Indicators and a Monitoring Framework for the Sustainable Development Goals

Launching a Data Revolution

SUSTAINABLE DEVELOPMENT SOLUTIONS NETWORK
A GLOBAL INITIATIVE FOR THE UNITED NATIONS

A report to the Secretary-General of the United Nations by the
Leadership Council of the Sustainable Development Solutions Network

Indicators and a Monitoring Framework
for the
Sustainable Development Goals

Launching a data revolution for the SDGs

A report to the Secretary-General of the United Nations
by the Leadership Council of the
Sustainable Development Solutions Network

June 12, 2015

About this report

This report is the result of over 18 months of consultative work led by the SDSN with the contributions of nearly 500 organizations and thousands of individuals – draft versions of the report have so far been downloaded over 80,000 times. The SDSN Thematic Groups, a large number of UN agencies and other international institutions, national statistical offices, civil society organizations, academia, and businesses have provided expert input that has helped us improve the indicator framework. We are particularly grateful for the detailed comments received during two public consultations, the first from February to March 2014, and the second in January 2015. Comments submitted during these consultations and changes made to our report are provided on our website.

This is the final version of the report, though the list of Global Monitoring Indicators may be periodically updated as experts agree on metrics or new ones are developed to fill the identified gaps. These updates will be made on our new indicator web platform: http://unsdsn.org/indicators.

Acknowledgments

The writing of this report was led by Guido Schmidt-Traub, Eve de la Mothe Karoubi, and Jessica Espey with support from the Secretariat of the SDSN, including Chandrika Bahadur, Lauren Barredo, Claire Bulger, Megan Cassidy, María Cortés-Puch, Emmanuel Guerin, Holger Kuhle, Carl Mas, Bonnie Scarborough, and Kathy Zhang. This report has been reviewed and broadly endorsed by members of the SDSN Leadership Council, though some may not be in full agreement with every detail.

We are immensely grateful to professionals working at the following organizations who have provided critiques and suggestions for improving the report and the proposed indicator framework. None of these organizations or individuals were asked to endorse the final report. All remaining errors and inaccuracies remain the responsibility of the SDSN Secretariat.

1,000 Days Partnership | 11.11.11 - Coalition of the Flemish North-South Movement| A38 | A4ID | AbleChildAfrica | Aboriginal Rights Coalition Australia | Access Global Ltd| Action Against AIDS Germany | Action Against Hunger | Action for Global Health | ActionAid International| Active Remedy Ltd | ADD International| Addis Ababa University | AEEFG| Africa Freedom of Information Centre| Africa Network Campaign on Education For All (ANCEFA)| African Medical and Research Foundation | Aga Khan University | Agirre Lehendakaria Center for Social and Political Studies, Basque Country University | AGRECO | AIG | American Public Health Association (APHA) | American Red Cross | Amis des Etrangers au Togo (ADET)| Amnesty International | Anheuser-Busch InBev | AquaFed | ARGE Consulting| Asia-Europe Foundation| Asian Development Bank | Asian Pacific Resource and Research Centre for Women (ARROW)| Associated Country Women of the World| Association pour la Formation et l' Insertion de l'Adolescent et de la Femme | Australian Refrigeration Association| Austrian Federal Ministry of Labour, Social Affairs and Consumer Protection | Aviva | Badan Pusat Statistik Indonesia | Baruch Professional Services Ltd| Beer Canada | Belgian Development Cooperation | Beyond Copenhagen Coalition | Bingham Centre for the Rule of Law| Bioregional| Bioversity International | Bokma Multilink | Brazilian Society for Ecological Economics | Bread for the World, Germany| Bridging Agriculture and Conservation Initiative (BACI)| Bundesvereinigung Lebenshilfe | Business Innovation Research Development (BIRD) | CAFOD| Cambodian Child's Dream Organization | Caribbean Policy Development Centre | Caritas Austria | Caritas Germany | CBM | Center for International Earth Science Information Network (CIESIN), Columbia University | Center for Sustainable Development, Bangalore | Center for Sustainable Development, Udayana University | Centre for Communication and Development Studies | Centre for Community Economics and Development Consultants Society | Centre for Development, Environment and Policy, SOAS (University of London) | Center for Global Child Health, Hospital for Sick Children | Centre for Global Mental Health, King's College London | Centre for Poverty Analysis (CEPA) | Centre for Public Mental Health, Department of Psychiatry and Mental Health, University of Cape Town | Centre for Public Mental Health, University of Cape Town| Centre for Sustainable Community Development, Simon Fraser University | Centre for Sustainable Food Systems, Wilfrid Laurier University | CESR| CGIAR Consortium of International Agricultural Research Centers |

Change Planet Partners Climate Innovation Foundation - CPPCIF | ChildFund Alliance | Children of the Earth | Children's Investment Fund Foundation| Christ is calling you (Cristo te llama) | Chung-hua Institution for Economic Research | CIMMYT| CIRCE - Research Center for Energy Resources and Consumption| Citizens United to Promote Peace & Democracy in Liberia | Civil Society Working Group on HIV | Columbia University | Commons Action for the UN | Commonwealth Youth Council | Commonwealth Youth Programme | Communitas Coalition| Community Peacebuilding and Cultural Sustainability (CPCS) | Congregation of Our Lady of Charity of the Good Shepherd | Consejo Nacional de Evaluación de la Política de Desarrollo Social| Conservation for the Oceans Foundation| Consumers India | Consumers International (CI)| Corporación Globalización Ciudadana CGC | Countdown 2015 Europe | Counterfactual Consulting and Advocacy | D. Mendeleev University of Chemical Technology of Russia | Dance4life foundation| DataShift, CIVICUS| Demographic and Health Survey (DHS) Program | Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) | Deutsche Stiftung Weltbevoelkerung | Deutsche Welthungerhilfe e.V. (WHH)| Developmental Media Inc | Dignitas International | Disability & Development Cooperation (bezev) | Disability Rights Fund| DSW| Earth Institute | Earth System Science Group, University of Exeter| Education International | End Water Poverty | ENDA Tiers Monde| Endangered Wildlife Trust| ENERGIA, International Network on Gender and Sustainable Energy| ENERTEC-SARL | Environment Research Cente, University of Technology, Iraq | Equity for Children| Ericsson | Esri| Ethical Markets Media | EuroNGOs | European Federation of Older Persons | Eurostat | Every Newborn Action Plan (ENAP) Metrics Group| Family Care International | FEMNET (The African Women's Development & Communications Network)| FIA Foundation | Fondazione Achille Sclavo | Fondazione Eni Enrico Mattei (FEEM) | Food and Agriculture Organization (FAO) | Forest Stewardship Council | FOS| Free Trade Union Development Center| French Water Partnership| Friends of Franbarnie International (FOFI) | Friends of the Chair Group on Broader Measures of Progress | Frontline Health Workers Coalition| Future Earth ecoHEALTH and EcoHealth Alliance| Gallup | Gender and Development Network| Gender and Disability Advisory Committee| Gender and Water Programme Bangladesh | Gender Links| GenderInSITE | German Federal Ministry for Economic Cooperation and Development| German NGO Forum on Environment and Development | Gerontology Centre Belgrade, Serbia | Girls Not Brides | GlaxoSmithKline| Global Alcohol Policy Alliance| Global Alcohol Producers Group | Global Alliance for Clean Cookstoves| Global Alliance on Armed Violence (GAAV) | Global Alliance to Prevent Prematurity and Stillbirth (GAPPS) | Global Campaign for Education (GCE) | Global Coalition for Social Protection Floors| Global Crop Diversity Trust | Global Ecovillage Network | Global Financial Integrity| Global Forest Coalition (GFC)| Global Forum for Media Development| Global Health Technologies Coalition | Global Initiative to End All Corporal Punishment of Children | Global Network for Disaster Reduction | Global Network for Neglected Tropical Diseases/Sabin Vaccine Institute | Global Public-Private Partnership for Handwashing with Soap (PPPHW) | Global Reporting Initiative| Global Soap Project | Global Water Partnership | Goal Patrol| Habitat for Humanity| Habitat International Coalition (HIC)| Handicap International | Harvard University | HDS systems design science| Health Workforce Advocacy Initiative| HelpAge International | Hertie School of Governance | High-Level Task Force for the ICPD| HNB Garhwal Central University | Horizon International, Yale University | Human Rights Defenders Alert | ICCA Consortium | IDEAS For Us | Institut pour un Développement Durable | Institute for Advanced Sustainability Studies - Potsdam| Institute for Global Health - University College London| Institute of Applied Manpower Research, Planning Commission | institute of Noahide | Instituto Politécnico Nacional-México | Inter-American Development Bank | Interessenvertretung Selbstbestimmt Leben in Deutschland | International AIDS Vaccine Initiative| International Alliance Of Women| International Budget Partnership| International Center for a Research on Women (ICRW)| International Center for Alcohol Policies | International Center for Not-for-Profit Law| International Collaboration for Essential Surgery (ICES) | International Council on Social Welfare | International Disability Alliance (IDA) | International Disability and Development Consortium (IDDC) | International Environment Forum| International Federation for Family Development | International Federation of Freight Forwarders Association | International Federation of Surgical Colleges (IFSC) | International Fertilizer Industry Association (IFA) | International Forum for Volunteering in Development | International Gay and Lesbian Human Rights Commission (IGLHRC)| International Institute for Applied Systems Analysis (IIASA)| International Labor Organization (ILO) | International Movement ATD Fourth World | International Organisation for Migration (IOM) | International Pediatric Association (IPA) | International Planned Parenthood Federation| International Plant Nutrition Institute (IPNI) | International Risk Governance Council| International Service | International Union for Conservation of Nature (IUCN) | IntraHealth International| IPPF EN | IRENA| IREX | Islamic Relief Worldwide| Islands and Small States Institute, University of Malta | Istituto per lo Sviluppo della Formazione Professionale dei Lavoratori (ISFOL) | Japan International

Cooperation Agency (JICA) | JSD and co Consulting | Kalpavriksh | Kiel Institute for the World Economy | Kindernothilfe | King's College London| Kinga Africa | KPMG International | Kwame Nkrumah University of Science and Technology | L'Institut de recherche pour le développement (IRD) | l'Intégration et le Développement Durable au Burundi-AIDB | Landesa | Learning Metrics Task Force Secretariat | Leonard Cheshire Disability | Leverhulme Centre for Integrative Research on Agriculture and Health (LCIRAH) | Liberia Action Network on Small Arms (LANSA) | Liberia NGOs Network (LINNK) | Liberians United to Expose Hidden Weapons | Light for the World| London School of Hygiene and Tropical Medicine | Major Group for Children and Youth| MARCH Centre London School of Hygiene & Tropical Medicine (LSHTM)| March of Dimes | Materia de Cooperación Internacional al Desarrollo de la Universidad Católica Boliviana, La Paz | Medical Mission Sisters| Melbourne Sustainable Society Institute | Micronutrient Initiative | Millennium Alliance for Humanity and the Biosphere | Millennium Project| Ministry for Foreign Affairs, Sweden | Ministry of Labor and Social Affairs of the Czech Republic | Misereor | Momma Bear| Movement for peace - MPDL| NASA Goddard Institute for Space Studies/Columbia University| National Campaign on Dalit Human Rights (NCDHR) | National Planning Commission, Johannesburg, South Africa | Natural Resources Defense Council | NAWO (National Alliance of Women's Organisations, UK)| NCD Alliance | NERC Centre for Ecology & Hydrology| New Economics Foundation (NEF) | New York University Program in Global Mental Health | Newcastle University | Nigerian National Bureau of Statistics| NORRAG | NPS Italia onlus | Occupy Canada | Office of the High Commissioner for Human Rights | Omniclimate| On The Way| Open Contracting Partnership| Open Society Foundations | Open Society Justice Initiative | Orchid Project| Organisation for Economic Co-operation and Development (OECD)| Otto & Associates | Overseas Development Institute (ODI) | Oxfam | Oxfam India | Oxford Poverty and Human Development Initiative (OPHI) | Pace University | PARIS21 | Partnership for Maternal, Newborn and Child Health | Partnership on Sustainable Low Carbon Transport (SLoCaT)| Peace Child International| Pforzheim University | Phenix Center for Economic and Informatics Studies| Plan Bleu (UNEP-MAP) | Plan International| Planetafilia | PLANETE 21| Population and Sustainable Development Alliance (PSDA) | Population Matters | Population Media Center | Practical Action| Programme for the Conservation of Forest in Peru – Ministry of Environment | Reacción Climática| ReAct - Action on antibiotic resistance| RIPESS - Intercontinental Network for the Promotion of Social Solidarity Economy | Roll Back Malaria - Monitoring and Evaluation Reference Group | Royal Belgian Institute for Natural Sciences | Royal Society| RRI| Rutgers WPF | Saferworld | Samajik Augraon Foundation | Save the Children | Saving Newborn Lives| ScEnSers Independent Expertise| SDSN Youth| Secretariat of the Convention on Biological Diversity (SCBD)| Secretariat of the International Land Coalition (ILC)| Senior Policy Advisor, Fragile States| Sensoa | Seton Hall University| SFU Ctr for Sust Comm Dev| Siemens | Sightsavers International | SIL International | SIPC, Aboriginal Rights Coalition joint submision| Sisters of Saint Anne Social Justice Office | SIWI| SJ Around the Bay | Society for Development Studies (SDS) | SOLIDAR| Sonke Gender Justice | SOS Children's Villages| Statistics Canada | Stockholm International Peace Research Institute | Stockholm International Water Institute | Stockholm Resilience Centre | Stop AIDS Alliance| STOPAIDS | SUST4IN| Sustainabilitycorp.net | Sustainable Energy Associates| Task Team on CSO Development Effectiveness and Enabling Environment| Tellus Institute| Texas A&M University | The Church of Sweden| The Ecumenical Foundation for Africa | The Fertilizer Institute (TFI) | The Foundation for Civilizational Transformation and Conscious Evolution | The Girl Generation: Together to End FGM| The Global Alliance for Surgical, Obstetric, Trauma, and Anaesthesia Care (The G4 Alliance)| The Global Coalition on Aging | The International Real Estate Federation (FIABCI) | The Johanniter International Assistance | The Land Alliance Inc| The Rainforest Foundation UK| The Society for Upliftment of Masses (SUM) | The Sustainability Report | The Wecskaop Project (What Every Citizen Should Know About Our Planet)| The Wellbeing Foundation| The WILD Foundation| Thornicroft| To Love Children Educational Foundation International Inc. | Tsere lamba | UK Department for International Development (DFID)| UK Health Forum | UK Office of National Statistics| UN Economic Commission for Europe - Population Unit, Statistical Division | UN Foundation | UN Peacebuilding Support Office | UN Secretary-General's Advisory Board on Water and Sanitation | UN Statistics Division | UN-Habitat | UN/CSD Education Caucus | UNAIDS | UNECE - Working Group on Ageing | UNEP| UNESCO Institute for Statistics| UNF Global Alliance for Clean Cookstoves | UNFPA | UNICEF | UNIDO | United Nations Economic Commission for Europe| Universidad Iberoamericana Ciudad de México | Universidade Federal do Ceará | Universitat de València | Université de Djibouti| University College London | University of California, Berkeley | University of Edinburgh | University of Hawai'i | University of Hong Kong | University of Pennsylvania| University of Siena | University of the Witwatersrand | University of Washington | University Research Company | UNSCN| UNSG Advisory Board on Water and Sanitation | USAID Office of Population and Reproductive Health | Verband

Entwicklungspolitik deutsche Nichtregierungsorganisationen (VENRO) | Village Water| Volvo Group | VSO| Walmart | WaterAid | WECF International| White Ribbon Alliance| Women Deliver| Women for Women's Human Rights (WWHR)-NEW WAYS| Women in Alternative Action | Women NGOs Secretariat of Liberia (WONGOSOL) | Women's Environment and Development Organization| World Aquarium| World Association of Girl Guides and Girl Scouts | World Bank | World Food Programme | World Future Council| World Obesity Federation| World Society for the Protection of Animals (WSPA) | World Values Survey | World Vision International | WSSCC| Wuppertal Institute Climate, Energy and Environment | WWF| Yale Center for Environmental Law & Policy| YouAct | Young Lives| Youth Network for Good Leadership in Nigeria | Zonta International| Zoological Society of London (ZSL)

Table of contents

Acronyms and Abbreviations

AFOLU - Agriculture, Forestry and Other Land Use
BIS - Bank for International Settlements
CEB - UN Chief Executive Board for Coordination
CO2 - Carbon dioxide
ECOSOC - UN Economic and Social Council
EITI - Extractive Industries Transparency Initiative
ECLAC - Economic Commission for Latin America and the Caribbean
EPR - Employment to population ratio
FAO - Food and Agriculture Organization
GAVI - Global Alliance for Vaccines and Immunizations
GMI - Global Monitoring Indicators
GDP - Gross domestic product
GHG - Greenhouse gas
GNI - Gross national income
GNP - Gross national product
GRI – Global Reporting Initiative
HLP - High-level Panel of Eminent Persons on the Post-2015 Development Agenda
HLPF - High-Level Political Forum on Sustainable Development
IAEG-MDG - Inter-agency and Expert Group on MDG Indicators
IASB - International Accounting Standards Board
ICT - Information and communications technology
IEA - International Energy Agency
IEAG - Independent Expert Advisory Group on the Data Revolution
IFA - International Fertilizer Industry Association
IFRS - International Financial Reporting Standards
IGN - Intergovernmental Negotiation on Post-2015
IIRC - International Integrated Reporting Council
ILO - International Labor Organization
IMF - International Monetary Fund
IPT - Intermittent preventive treatment
IPU - Inter-Parliamentary Union
ITU - International Telecommunication Union
IUCN - International Union for Conservation of Nature
LDCs - Least Developed Countries
MDGs - Millennium Development Goals
MNCs - Multi-national corporations
NEET - Not in education, employment or training
NSOs - National statistical offices
NTDs - Neglected Tropical Disease
ODA - Official Development Assistance
OECD - Organisation for Economic Co-operation and Development
OWG - Open Working Group on Sustainable Development Goals
PGA - President of the UN General Assembly
PM - Particulate matter
PMTCT - Preventing mother to child transmission
PPP - Purchasing power parity
SDGs - Sustainable Development Goals
SEEA - System of Environmental-Economic Accounting
SDSN - Sustainable Development Solutions Network
SG - UN Secretary-General
TB - Tuberculosis
TBD - To be determined
UN DESA - UN Department of Economic and Social Affairs
UNAIDS - Joint UN Programme on HIV and AIDS
UNDG - UN Development Group
UNDP - UN Development Programme
UNEP - UN Environment Programme
UNESCO - UN Educational, Scientific and Cultural Organization
UNFCCC - UN Framework Convention on Climate Change
UNFPA - UN Population Fund
UNHCR - UN High Commissioner for Refugees
UNICEF - UN Children's Fund
UNIDO - UN Industrial Development Organization
UNISDR - UN International Strategy for Disaster Reduction
UNOCHA - UN Office for the Coordination of Humanitarian Affairs
UNODC - UN Office on Drugs and Crime
UNSC - UN Statistical Commission
UNSD - UN Statistics Division
WBCSD - World Business Council for Sustainable Development
WHO - World Health Organization
WIPO - World Intellectual Property Organization
WTO - World Trade Organization

Executive Summary

In September 2015, a summit of heads of state will adopt the Sustainable Development Goals (SDGs). The experience of the Millennium Development Goals (MDGs) underscores the importance of thinking through the indicators as early as possible; we cannot afford a lag of several years before we start to measure progress towards achieving the SDGs. The international community has rightly begun to shift attention to the indicator framework and associated monitoring systems. In June 2015, the Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs) will convene to start the technical work of defining an SDG indicator framework.

This report is offered as a contribution to the multi-stakeholder debate in support of the SDGs. It outlines how a comprehensive indicator framework might be established to support the goals and targets proposed by the Open Working Group on the SDGs (OWG). The report is the result of 18 months of intensive global discussions involving thousands of experts from UN organizations, academia, civil society, business, and a large number of national statistical offices (NSOs). The large number of detailed comments received from all parts of the world and all areas of expertise gives us confidence that it is possible to measure the full spectrum of SDGs and their targets through a compact indicator framework.

Indicators will be the backbone of monitoring progress towards the SDGs at the local, national, regional, and global levels. A sound indicator framework will turn the SDGs and their targets into a **management tool** to help countries develop implementation strategies and allocate resources accordingly, as well as a **report card** to measure progress towards sustainable development and help ensure the accountability of all stakeholders for achieving the SDGs.

The mechanics of SDG monitoring are still being worked out, but an emerging consensus suggests that the focus of SDG monitoring will be at the national level. Complementary monitoring will occur at regional and global levels. Moreover, each major thematic community, such as health, education, agriculture, and so forth, will mobilize, analyze, and communicate data on progress towards achieving its objectives. Such thematic monitoring and review will be an important complement to official monitoring and review at national, regional, and global levels.

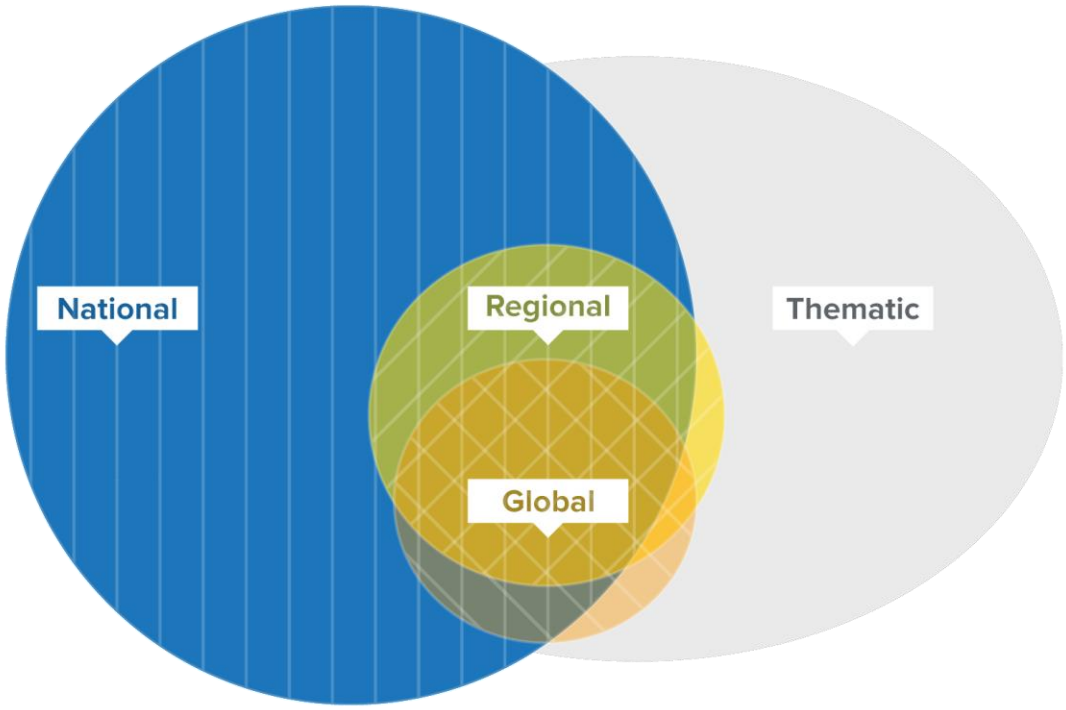
Each level of monitoring requires different types of indicators (see Figure 1 and Annex 5 for an illustration). This report proposes **100 Global Monitoring Indicators**, accompanied by suggestions for **Complementary National Indicators**, which together track the full range of SDGs and targets in an integrated, clear, and effective manner (see Tables 1 and 2). Based on discussions with a large number of statistical offices, including Eurostat, BPS Indonesia, the OECD, the Philippines, the UK, and many others, we believe 100 to be the maximum number of global indicators on which NSOs can report and communicate effectively in a harmonized manner. This conclusion was strongly endorsed during the 46th UN Statistical Commission in March 2015, as well as the preceding Expert Group Meeting on SDG indicators.

Each country should pick the number and range of Complementary National Indicators that best suit its needs and capacity to collect and analyze data. Given the breadth of country circumstances we expect substantial variation in the number and type of national indicators that countries will adopt. This report includes some initial suggestions for such indicators. We underscore that the preliminary list of Complementary National Indicators is far from exhaustive and meant only for inspiration and illustration.

All SDG indicators need to be considered as an integrated package and must work in harmony with one another. Many important issues, such as gender equality, health, sustainable consumption and production, and nutrition, cut across goals and targets. The goals and targets are themselves interdependent, and must be pursued together, since progress in one area often depends on progress in other areas. As a result many indicators contribute to monitoring more than one target (Table 2). An SDG indicator and monitoring framework must also give careful thought to tracking cross-cutting issues so that it can support integrated, systems-based approaches to implementation (see Annex 1, page 67).

This report outlines ten principles for Global Monitoring Indicators (GMIs), so they track the range of SDG priorities in a clear and effective manner. Inter alia such indicators should be limited in number; simple, intuitive, and policy-relevant; consensus-based, in line with international standards; relevant to all countries and all people; and able to be disaggregated to track progress for all relevant groups.

Figure 1: Schematic illustration with explanation of the indicators for national, regional, global, and thematic monitoring



National monitoring is the prerogative of each national government. Each country decides on number and nature of national indicators, which follow national standards and may not all be internationally comparable. A limited set of Global Monitoring Indicators will also be integrated into national monitoring efforts. Although likely to be drawn from official data sources, countries may also decide to include non-official data among their national indicators.

Global monitoring is based on a set of Global Monitoring Indicators that are harmonized to common global standards and would form basis for review at the High Level Political Forum. GMIs would be predominantly drawn from official data. GMIs are generally applicable to all countries, but some my only cover a subset (e.g. malaria does not apply to countries in temperate zones and landlocked countries do not report on oceans).

Regional monitoring provides a platform to foster knowledge-sharing, peer review, and reciprocal learning across regions. Regional indicators comprise Global Monitoring Indicators, Complementary National Indicators, and possibly a small number of indicators targeting specific regional priorities. Regional monitoring mechanisms should build on existing regional mechanisms.

Thematic monitoring comprises specialist indicators reported on by epistemic communities. They can include input and process metrics as helpful complements to official indicators. Many communities may also use other sources of unofficial data and experiment with creative and novel ways of collecting, analyzing, and presenting data.

This report identifies a number of urgent technical priorities that need to be addressed over the coming months to develop an effective indicator framework for the SDGs. They include filling gaps in available indicators; harnessing new, innovative sources of data; and moving towards annual monitoring. Annual monitoring is particularly crucial if the SDG indicators are to serve as a management tool, informing national planning and budgetary processes, as well as global follow-up (see Annex 2, page 92). In contrast to the MDGs, where data was spotty and produced infrequently with long lags, SDG indicators should be *reported* annually, though not all data will be *produced* annually. For some metrics, interim annual estimates can be produced using robust estimation methodologies.

Implementing the changes outlined in this report and ensuring effective data for the SDGs will require increased resources. Working with major leading international organizations and in consultation with large number of NSOs, the SDSN has detailed the investment needs for robust SDG monitoring. We project that $1 billion will be required each year to monitor the SDGs. At least half of this will need to be raised through domestic resource mobilization, but at least $100-200m will be required in incremental ODA.

Another key step will be the establishment of a Global Partnership for Sustainable Development Data, to help drive the Data Revolution. This Partnership can bring together public and private stakeholders to fill gaps in our knowledge, establish global norms and standards to increase the ease and security of sharing and using data, help countries develop robust national strategies for data development, and – crucially – help mobilize urgently needed financial resources. If adequately resourced, a Global Partnership for Sustainable Development Data would empower countries around the world to make the SDGs a real management tool for sustainable development.

Our confidence in the robustness and feasibility of the steps towards a data revolution for the SDGs that are outlined in this report is based on extensive, in-depth consultations with the world's leading experts and stakeholders involved in the SDG process. In our broad, global consultations with the technical communities, as well as other stakeholders, we have witnessed outstanding expertise and tremendous enthusiasm for making the SDGs and their monitoring a success. We are convinced that the practical steps discussed in this report can be taken in a timely fashion. The SDSN will continue to work with other interested partners to help develop a sound SDG indicator and monitoring framework, and to realize the great potential of the data revolution for sustainable development.

Designing Indicators and an Integrated Monitoring Framework for the Sustainable Development Goals

In September 2015, a summit of heads of state will adopt the Sustainable Development Goals (SDGs). The goals will chart out a universal, holistic set of objectives to help set the world on a path towards sustainable development, by addressing all three dimensions of economic development, social inclusion, and environmental sustainability.

Following more than a year of inclusive and intensive deliberations, a set of 17 Sustainable Development Goals and 169 accompanying targets was proposed by the Open Working Group on the SDGs (OWG), in mid-2014. The UN Secretary-General has endorsed the conclusions of the OWG in the synthesis report *The Road to Dignity by 2030*.[1] Member States have agreed that the agenda laid out by the OWG is the main basis for the Post-2015 intergovernmental process.[2] Through to September 2015, Member States will review the goals and targets and consider the means of implementation. They will also consider a framework for monitoring, follow-up and review of implementation.

The High-Level Panel on the Post-2015 Development Agenda (HLP) and the Independent Experts Advisory Group on the Data Revolution (IEAG)[3] have highlighted the opportunities and promise of a data revolution for the SDGs, using big data, new forms of social and geophysical data, and innovative means of data sharing. We are firmly convinced that such a data revolution for the SDGs is possible and that it will generate substantial benefits for all countries. As a contribution to this data revolution, this report outlines how a comprehensive indicator framework might be established to support the goals and targets proposed by the Open Working Group on the SDGs (OWG).

This report is the result of 18 months of intensive global discussions involving thousands of experts from UN organizations, academia, civil society, business, and a large number of national statistical offices (NSOs). The large number of detailed comments received from all parts of the world and all areas of expertise gives us confidence that it is possible to measure the full spectrum of SDGs and their targets through a compact indicator framework that is technically robust, operationally feasible, and provides the information that governments and other stakeholders need.

The report is organized as follows: it starts by outlining the rationale and criteria for a set of integrated indicators, including suggestions for the different levels of monitoring. It then lays out a roadmap for action to develop a robust SDG indicator and monitoring framework. Table 1 summarizes the proposed Global Monitoring Indicators and the suggested Complementary National Indicators arranged by OWG Goals. The same indicators are mapped to OWG Targets in Table 2. Annex 1 (page 67) describes how the proposed indicator and monitoring framework addresses major cross-cutting issues in a consistent and coherent way. Annex 2 (page 92) discusses the feasibility of annual SDG monitoring to help ensure that the SDGs can become a management tool for governments and other stakeholders. Annex 3 (page 96)

[1] UN Secretary-General (2014). *The Road to Dignity by 2030: Ending Poverty, Transforming All Lives and Protecting the Planet*. Synthesis Report of the Secretary-General on the Post-2015 Agenda.
[2] See conclusions of the sixty-eighth session of the General Assembly: http://www.un.org/en/ga/68/meetings
[3] High Level Panel Report (2013). *A New Global Partnership: Eradicate Poverty and Transform Economies through Sustainable Development*; and Independent Expert Advisory Group on the Data Revolution (2014). *A World That Counts*.

explains how indicators might be disaggregated so inequalities in SDG achievement can be monitored, to ensure no one is left behind. Annex 4 (page 99) provides more details on the four levels of monitoring and discusses which types indicators might be best suited to national, regional, global, and thematic monitoring. Annex 5 (page 103) describes each Global Monitoring Indicator in detail and defines suggested Complementary National Indicators. Annex 6 (page 211) answers frequently asked questions in relation to SDG indicators and this report.

I. Towards a Data Revolution for the SDGs: the Role of Indicators

Indicators will be the backbone of monitoring progress towards the SDGs at the local, national, regional, and global levels. A sound indicator framework will turn the SDGs and their targets into a **management tool** to help countries and the global community develop implementation strategies and allocate resources accordingly. They will also serve as a **report card** to measure progress towards sustainable development and to help ensure the accountability of all stakeholders for achieving the SDGs. The monitoring framework and indicators for the SDGs should reflect the lessons learned from the MDGs (Box 1).

Box 1: The Importance of Metrics and Indicators – Lessons from the MDGs

There have been great improvements in data gathering under the MDGs, but it has been insufficient for the goals to serve as either a management tool or a real-time report card. MDG data comes with too great a time lag – often three or more years – and too often is incomplete and of poor quality.

MDG monitoring also gave too little attention to what should be measured, so, to this day, we lack some important metrics for key development priorities. Similarly, there was too little investment in strengthening statistical capacity to ensure effective real-time monitoring of the MDGs and to establish statistical standards and quality requirements.

The SDGs require annual reporting of high-quality data from all countries. This, in turn, will require much greater investments in building independent, impartial national statistical capacities and strengthening statistical quality and standards. NSOs must be actively involved in the development of global and national SDG indicator frameworks, through the Inter-agency and Expert Group on SDG Indicators that will be convened by the UN Statistical Commission. The SDGs will be goals for the world – applicable to all countries, as well as to multiple, diverse actors. In developing the goals, as well as the accompanying monitoring architecture the best statistical input from business, science, academia, and civil society should be sought.

Time is of the essence in developing an integrated indicator and monitoring framework for the SDGs, if the world is to start implementing the Goals in 2016. Both existing and new data systems will require continuous strengthening over coming decades. Many aspects of a comprehensive SDG monitoring system can only be implemented over several years, but important decisions will need to be taken soon.

The 46th Session of the UN Statistical Commission provided an important moment in the development of an SDG monitoring system, and has put in place a multi-stakeholder process to devise the SDG indicators, via an Inter-agency and Expert Group on SDG Indicators (IAEG-SDGs). Meanwhile, the July 2015 Financing for Development Conference will be a crucial opportunity to mobilize the necessary means, so that the full indicator framework and a sound baseline can be adopted in time for the first High-Level Political Forum (HLPF) of the SDG era in July 2016. An effective annual review of the whole set of Global Monitoring Indicators will take some time to achieve, but by 2018 at the latest, we hope the international system, notably the UN organizations and partner institutions (OECD, World Bank, WTO, and others) will have in place an accurate and effective annual monitoring system.

This report is offered as a contribution to the multi-stakeholder debate on SDG indicators. It was developed over the course of 18 months drawing on numerous detailed comments and expert inputs

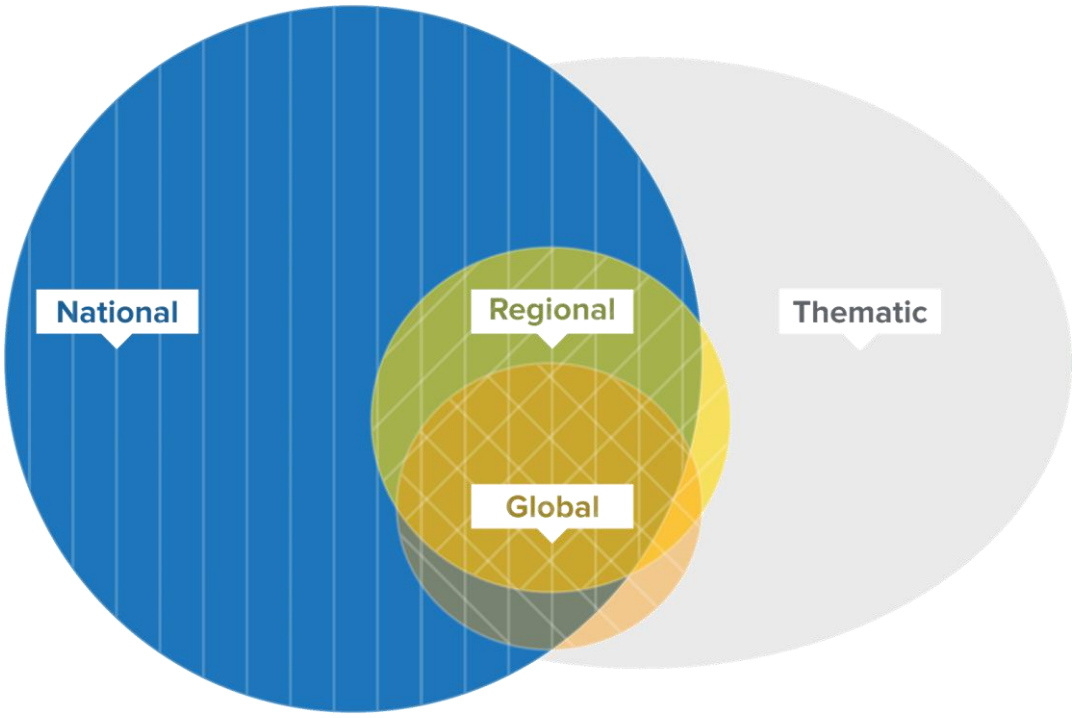
from UN and specialist agencies, academia, civil society, business, and national statistical offices (NSOs). We propose a framework of 100 Global Monitoring Indicators, accompanied by Complementary National Indicators. We also outline principles for effective SDG monitoring, unpack the possible levels of review, and present a roadmap for action. Urgent technical priorities will include filling gaps in available indicators, harnessing new innovative sources of data, and moving towards annual monitoring. Annual monitoring is particularly crucial if the SDG indicators are to serve as a management tool, informing national planning and budgetary processes, as well as global follow-up (see Annex 2, page 92).

II. An Integrated Monitoring Framework: Multi-level Review Processes and Indicators

As underscored by the OWG, the focus of SDG monitoring must be at the national level. Each country will choose the national SDG indicators that are best suited to track its own progress towards sustainable development. Given the breadth of country circumstances, we expect substantial variation in the number and type of national indicators that countries will adopt. This report includes some initial suggestions for such indicators, though the list is far from exhaustive and meant only for inspiration and illustration.

Yet, the Goals also describe a global agenda, including some global public goods that cannot be implemented by any country on its own. Success will require international coordination and collaboration, which in turn requires accountability and monitoring at the global level. Unless an effective global monitoring framework complements national efforts, the SDGs cannot be achieved in time. Global monitoring requires a harmonized and universal set of indicators, which we tentatively refer to as Global Monitoring Indicators. To ensure effective global monitoring, the Global Monitoring Indicators for the SDGs would be tracked in every country and reported periodically at the global level and by each country.

Figure 2: Schematic illustration of the indicators for national, regional, global, and thematic monitoring



In addition, regional monitoring and accountability will play a critical role in fostering the regional collaboration and coherence in strategies to pursue the SDGs. A fourth and critical level of monitoring occurs in each thematic or epistemic community, such as health, education, agriculture, and so forth.

Each community will mobilize, analyze, and communicate data on progress towards achieving its objectives.

These four levels of monitoring – national, regional, global, and thematic – are laid out in the Secretary-General's synthesis report[4] and illustrated in Figure 2. As described in the technical report by the Bureau of the UNSC, these levels of monitoring should be "organized in an integrated architecture."[5]

Below we briefly review each level of monitoring and implications for the choice of suitable indicators. Annex 4 (page 99) illustrates the use of national, global, and thematic indicators of proposed SDG 14 ("Conserve and sustainably use the oceans, seas and marine resources for sustainable development") as one example for how the global indicator framework might be organized.

1. National monitoring

National monitoring is the most important level of monitoring and will rely on nationally defined sets of indicators. National ownership at all levels of the SDGs is critical, and national monitoring must respond to national priorities and needs. As recognized in *The Road the Dignity by 2030*, national monitoring of the SDGs should "build on existing national and local mechanisms and processes, with broad, multi-stakeholder participation."[6] Countries can thus define the nature of the indicators, their specifications, timing, data collection methods, and disaggregation to suit their national needs and priorities.

Each country needs to decide whether such indicators should comprise only official data collected and vetted by the respective NSO or whether other official and non-official indicators should also be considered. For example, countries may consider data from privately operated satellites, surveys conducted by NGOs, business metrics, and a range of other data sources. Such "unofficial" data can add richness to the monitoring of the SDGs. Given the breadth of the SDG agenda, countries may choose to foster broad, multi-stakeholder participation in national monitoring.

This report presents two sets of indicators that together map out national indicators. Global Monitoring Indicators are harmonized across countries to ensure comparability and support global SDG monitoring. The vast majority of Global Monitoring Indicators are collected in every country. Complementary National Indicators allow each country to track country-specific challenges. The need for Complementary National Indicators derives from the fact that harmonized global indicators impose substantial costs on the collection and processing of data by NSOs and other stakeholders. A trade-off exists between the need for harmonized global data and countries' need to ensure that data is collected in a manner and subject to standards that reflect local needs and priorities.

Some Complementary National Indicators are only applicable to a subset of countries, such as indicators for neglected tropical diseases (NTDs). Others give countries greater scope in applying complex concepts, such as inequality, to their specific needs, and/or allow for greater specificity on issues of national concern. The Complementary National Indicators presented in this report offer a menu of options for countries that want to expand their national level monitoring. We underscore throughout

[4] UNSG (2014), para 146.
[5] Bureau of the United Nations Statistical Commission, (March 2015), *Technical report on the process of the development of an indicator framework for the goals and targets of the post-2015 development agenda - Working draft*.
[6] UNSG (2014), para i.

this report that the list of Complementary National Indicators is far from exhaustive and meant only for inspiration and illustration. In practice, many countries will track many additional indicators that are not listed in this report.

The MDGs provide several powerful examples of how countries successfully adapted global indicators to suit their national priorities. For example, Mongolia developed a 9th MDG on Strengthening Human Rights and Fostering Democratic Governance, which were seen as necessary preconditions for the achievement of all the other MDGs.[7] This new goal was supported by additional targets and indicators to track progress towards democratic governance and human rights. The indicators included nationally specific measures, such as "Expert evaluation of conformity of Mongolian laws and regulations with international human rights treaties and conventions (percentage)," as well as perceptions-based indicators such as "People's perception on press and media freedom."[8] Similarly, Bangladesh adapted the MDGs to meet local needs by setting new targets and indicators for promoting women in local government bodies, as well as separate targets on access to reproductive health services. Continuing in this vein, Bangladesh prepared a detailed national proposal for potential SDG indicators in their 2012 MDG report.[9]

Given the greater breadth and universality of the SDG agenda, we expect that national adaptation of the goals, targets, and supporting indicators will play a bigger role than under the MDGs. For this reason, a very large number of Complementary National Indicators may emerge over time that may surpass the indicators presented in this report.

2. Global monitoring

Global monitoring is a vital complement to national monitoring to ensure global coordination, support strategies for managing global public goods, and to indicate which countries and thematic areas are in need of greatest assistance. A global dialogue on SDG progress will also encourage knowledge-sharing and reciprocal learning. To this end, a set of Global Monitoring Indicators for the SDGs is required, and should be reported to the HLPF.

Global Monitoring Indicators are designed to be truly universal indicators, but some (such as malaria metrics) may not apply to every country (Figure 2). Similarly, some Global Monitoring Indicators track global commons, such as the oceans, and may therefore not be reported at the country level.

The majority of Global Monitoring Indicators proposed in this report will be derived from NSOs, drawing on official data sources such as administrative data from ministries, censuses, civil registration and vital statistics, and household surveys. A small number of Global Monitoring Indicators may be prepared by specialist agencies, for example where no suitable, comparable official data exists. To ensure comparability, Global Monitoring Indicators must be harmonized across countries. We therefore recommend that each Global Monitoring Indicator has at least one lead technical or specialist agency, responsible for coordinating data standards and collection, ensuring harmonization, and providing technical support where necessary (Table 1).

[7] See UNDP Mongolia website: http://www.mn.undp.org/content/mongolia/en/home/mdgoverview
[8] Government of Mongolia (2009). *The Millennium Development Goals Implementation: Third National Report*.
[9] Government of Bangladesh Planning Commission (2013). *The Millennium Development Goals: Bangladesh Progress Report 2012*. See Annex 3.

Global Monitoring Indicators should be limited in number to minimize the monitoring burden on national statistical offices. In our consultations with NSOs, it has become clear that 100 Global Monitoring Indicators represent the upper limit of what can be reported at a global level (Box 2).[10] The indicator selection process should also play close attention to encouraging integration across the goals. As highlighted in Table 2, indicators may be used multiple times, across various goals, to track all the dimensions of sustainable development in an integrated way (see Box 4).

Box 2: Why 100 Global Monitoring Indicators?

The much broader SDG agenda will require a richer and broader set of indicators than covered under the 60 MDG indicators. During extensive, global consultations with NSOs, hundreds of experts, and other stakeholders, it has become clear that the number of harmonized Global Monitoring Indicators needs to be limited for three reasons.

First, globally harmonized indicators impose additional cost and time requirements on NSOs and the global data system. Senior statisticians from the statistical offices of Eurostat, BPS Indonesia, the OECD, the Philippines, the UK, and many others have told the SDSN that 100 Global Monitoring Indicators represent the upper limit of feasibility. Since some of these offices are among the best-resourced statistical agencies in the world, it seems that 100 really does constitute an upper bound. In fact many experts believe that the number of globally harmonized indicators should be lower. The need for a limited number of global indicators was strongly endorsed at the 46th UN Statistical Commission in March 2015, as well as the proceeding Expert Group Meeting on SDG indicators.

Second, even if the data can be collected, globally harmonized indicators may not correspond to national priorities and preferences. Many countries have expressed a desire for nationally appropriate indicators, which in turn limits the scope for global indicators. Third, a very large number of indicators would be difficult to communicate during the HLPF discussions.

The proposed Global Monitoring Indicators and the Complementary National Indicators track the full range of SDG priorities in a clear and effective manner (Tables 1 and 2). Over time, the data revolution may make it possible to collect vastly greater volumes of data to serve the SDGs, in a globally harmonized manner.

Based on the MDG experience reviewed in Box 1, we underscore the critical need for annual monitoring of Global Monitoring Indicators to the HLPF. The data should be collected from NSOs within the preceding year or based on robust estimations. Annex 2 (page 92) provides more information on the feasibility of annual monitoring.

The timing of the annual review needs to be considered carefully by member states. Currently the HLPF is scheduled to meet at the margins of the UN Economic and Social Council (ECOSOC) in June/July, so the annual SDG data would need to be available towards the second quarter of each year. The advantage of annual monitoring in the middle of a calendar year is that the outcomes of the review might still affect

[10] For comparison, the MDGs have some 60 indicators. As emphasized above, there should be no limit to number of Complementary National Indicators that countries will use to adapt the SDGs and their monitoring to national priorities and needs.
See UN Statistical Commission, (March 2015), *Draft Report from the 46th session.*

the annual budget cycle for the following year, so that resources can be mobilized in response to progress or shortfalls in SDG implementation. On the other hand, SDSN consultations with several NSOs and international organizations suggest that mid-year monitoring would make it technically impossible to consider data from the previous calendar year, since most NSOs generate such data by the middle of the following calendar year. A 2-year gap between data collection and global review could undermine the SDGs' role as a real-time report card and management tool. On balance, it seems that a strong case exists to move the annual monitoring on the SDGs towards the end of a calendar year. Clearly, such a decision involves complex political and organizational issues that require careful consideration by member states.

Assuming end-of-year monitoring of the SDGs, an indicative schedule for preparing the annual report might look as follows:

> (1) During the first half of each calendar year, the NSO and/or specialized agencies gather the national data to complete the national reports on that indicator, no later than [June 30] of the new year.
>
> (2) The national tables are then forwarded to the international organization(s) tasked with preparing the Annual SDG Report. This agency (or agencies) would have [six] weeks to compile and prepare the draft report of the preceding year's data.
>
> (3) The draft report would be presented at the UN to the Secretary General (SG) and the President of the General Assembly (PGA) in [early September], for a final review and a cover statement.
>
> (4) The preliminary report would be prepared for publication and translation by [September] to be available to HLPF or ECOSOC meetings in [October-November].
>
> (5) In [December] the report will be finalized with corrected and updated data, and the final report disseminated and posted online.

This approach is ambitious and will obviously push all countries and participating organizations hard, but the goal will be to turn the SDG indicators into useful tools for real-time national and sub-national management. This monitoring cycle will be unattainable without dedicated financing to improve the statistical infrastructure and capacity of each country. As highlighted by the UN Statistics Division, "the main challenge is that the required capacity to measure the full range of sustainable development indicators currently does not exist in most countries."[11] The 46th Statistical Commission also highlighted the urgency of investments in national statistical capacity to "enable national statistical offices to play a leading and coordinating role" in post-2015 monitoring processes.[12]

3. Regional monitoring

Regional monitoring can play an important role in fostering knowledge-sharing, reciprocal learning, and peer review across countries in the same region. It will also promote shared accountability for regional priorities, such as shared watersheds, regional conflicts, or regional infrastructure.

[11] UN Statistics Division, in collaboration with the Friends of the Chair group on broader measures of progress (2014). *Compendium of statistical notes for the Open Working Group on Sustainable Development Goals*, para. 1.8.

[12] UN Statistical Commission, (March 2015), *Draft Report from the 46th session*, p.3. See also Espey, J. et al.(2015*) A Needs Assessment for SDG Monitoring and Statistical Capacity Development*, SDSN Report, Paris France and New York, USA: SDSN.

As a result, indicators for regional monitoring extend beyond the scope of the Global Monitoring Indicators and may include a small number of metrics not considered under Complementary National Indicators (Figure 2). We do not endeavor to identify regional indicators in this report, as this work should be undertaken by the Regional Economic Commissions and other competent bodies in each region. These bodies also have an important complementary role in promoting best practices, providing technical cooperation and capacity building, and developing and disseminating methodologies to adapt and harmonize indicators. Examples of ongoing statistical harmonization work include Eurostat's macroeconomic statistics harmonization in EU member states, the ECLAC Working Group on Harmonization of Statistics on Income Poverty and Public Transfers, and the AU Strategy for the Harmonization of Statistics in Africa (SHaSA).

Where possible, regional monitoring should build on existing regional mechanisms, such as the Regional Economic Commissions, the Africa Peer Review Mechanism, or the Asia-Pacific Forum on Sustainable Development.[13] Regional monitoring processes can also broker a link between the national and global levels. The Regional Economic Commissions may play a particularly important role in preparing inputs to the HLPF, under the auspices of ECOSOC, since Regional Commissions are already subsidiary bodies of the Economic and Social Council.

4. Thematic monitoring

To achieve the SDGs, complex challenges must be addressed across a broad range of sectors and thematic areas, such as health, education, agriculture, nutrition, the water-energy nexus, sustainable consumption and production patterns, or infrastructure design. Lessons learned in one country can inform progress in other countries. Similarly, implementation challenges and technology gaps are often common across countries, so major thematic communities need to be mobilized globally in support of the SDGs. These thematic or epistemic communities should focus on monitoring progress and challenges in implementation.

Thematic communities – often under the leadership of specialized international organizations –develop specialist indicators for monitoring and accountability that are tracked in countries across the globe. Often these indicators include input and process metrics that are helpful complements to official indicators, which tend to be more outcome-focused (Figure 2).

The implementation of the MDGs provides good examples for effective thematic monitoring under the auspices of international organizations, universities, civil society organizations, and business groups (Box 3). In particular, the health sector provides important lessons on how increased collaboration between diverse groups has improved the frequency and quality of data.[14] What was previously a fragmented sector successfully managed to bring together data producers, users, and analysts, and, as a result, the health-related MDG indicators have the highest level of data availability and reporting frequency.[15]

For example, the UN Inter-Agency Group on Child Mortality Estimation, which has developed a specialist hub responsible for analyzing, checking, and improving mortality estimation. This group, and its

[13] UNSG (2014), para 149, ii.
[14] SDSN is preparing a forthcoming Issue Brief that will aim to examine the case study on health sector data and draw conclusions for thematic reporting.
[15] Cassidy, M. (2014). "Assessing Gaps in Indicator Availability and Coverage." Briefing paper. Paris, France and New York, USA: SDSN.

associated database CME Info, is a leading source for child morality information for both governments and non-governmental actors. [16] The group, which consists of UN agency specialists supported by a technical advisory group of academic and scientific experts, has pioneered innovations in statistical modeling to generate accurate estimates of child mortality despite limited availability of high-quality data for many low- and middle-income countries.

In some cases, universities have a leading role in thematic monitoring. For example, the Université Catholique de Louvain maintains the EM-DAT database on disasters; the University of Maryland Institute of Human Virology has one of the most extensive e-databases on virology and HIV in low and lower-middle income countries;[17] and the University of Washington hosts the Institute for Health Metrics and Evaluation (IHME). IHME has become a leading and internationally trusted repository for collecting, vetting, and harmonizing key public health data, specifically population health, its determinants, and the performance of health systems. IHME recently renewed its partnership with WHO to continue working on improving data used to generate estimates of levels and trends in health.[18] This work informs the ongoing Global Burden of Disease (GBD) study, which includes information essential for informing health policies such as on levels and trends for age-sex-specific mortality.

In other cases, businesses may have access to data that can underpin thematic SDG monitoring (Box 3). In the agriculture sector, the International Fertilizer Association (IFA) maintains one of the most extensive databases on fertilizer supply, production, and use around the world. Data from companies' supply chains can help track food loss and waste, and ICT companies can share data on the use of modern communication technologies.

Thematic reporting is also an opportunity to go beyond global indicators and develop specialized and sector-specific indicators. Sustainable Energy For All, Roll-Back Malaria, and UN Water (through the Joint Monitoring Programme) have demonstrated the power of collective multi-stakeholder monitoring of specific thematic priorities.

To coordinate thematic monitoring under the SDGs, each thematic initiative may have one or more lead specialist agencies or "custodians" as per the IAEG-MDG monitoring processes. Lead agencies would be responsible for convening multi-stakeholder groups, compiling detailed thematic reports, and encouraging ongoing dialogues on innovation. These thematic groups can become testing grounds in launching a data revolution for the SDGs, trialing new measurements and metrics that in time can feed into the global monitoring process. As suggested in the UN Secretary-General's synthesis report, thematic reports are needed on an annual basis and may benefit from in-depth technical examination of specific concerns each year.[19]

[16] See the CME Info database online at www.childmortality.org
[17] Ritz, D. (2014). Measuring e-Health Impact: An e-Health Evaluation Framework that Leverages Process Control Theory and Big Data Analytics. *Big Data and Health Analytics*, 309.
[18] See the IHME website at www.healthdata.org
[19] Ibid, para 149, iv.

Box 3: Aligning Business Metrics with SDG Indicators

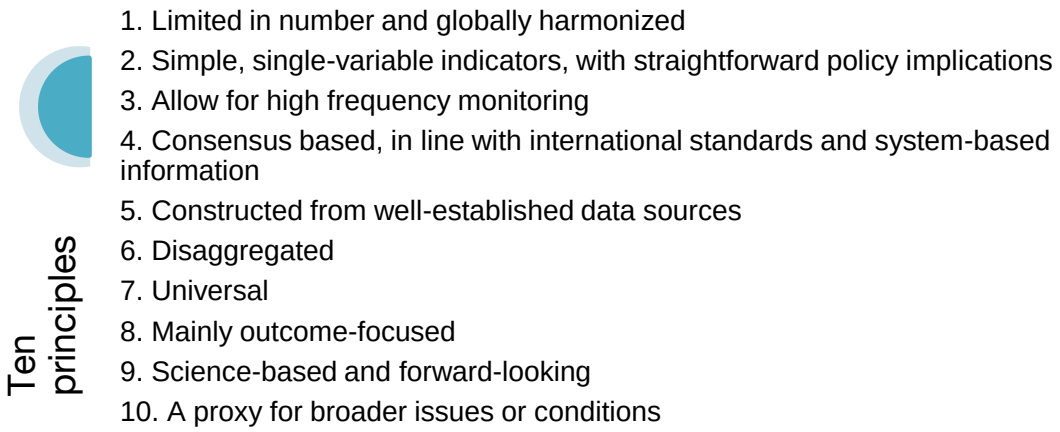
Businesses will need to play a critical role in achieving many SDGs. Their roles include direct investment (e.g. in infrastructure); developing new technologies for energy, health and other SDG priorities; and aligning business incentives and behavior with the social objectives of sustainable development. For this reason, it is critical that business metrics be closely aligned with the SDGs and the underlying indicator framework.

The Global Reporting Initiative (GRI), the UN Global Compact (UNGC), and the World Business Council for Sustainable Development (WBCSD) have recently launched a joint initiative to align business metrics with SDG indicators and monitoring frameworks. This initiative will use GRI standards, as well as other commonly-used corporate sustainability indicators, to help identify Key Performance Indicators (KPIs) that can help track businesses' contributions to the SDGs. We applaud this timely and important work by the business community as it holds great potential to ensure coherence between business reporting and the global SDG framework.

III. Principles for setting SDG indicators and an integrated monitoring framework

Building upon the standards proposed in the UN Development Group (UNDG) handbook and the CES Recommendations on Measuring Sustainable Development,[20] we propose 10 criteria for robust Global Monitoring Indicators. These principles have also been informed by lessons from the MDGs (Box 1); comments from NSOs collected through our public consultation and via the Friends of the Chair on Broader Measures of Progress; as well as the principles laid out in various reports including *The Future We Want*, *A New Global Partnership* and *A World That Counts*.[21]

Figure 3: Towards an integrated monitoring and indicator framework: Ten principles for Global Monitoring Indicators



Robust Global Monitoring Indicators for the SDGs should be:

1. Limited in number and globally harmonized: Since a very large number of indicators would be required to comprehensively track progress towards all aspects of the 169 targets proposed by the Open Working Group, we recommend that countries consider two sets of indicators. Up to 100 Global Monitoring Indicators would be reported on in a harmonized way by every country on an annual basis and collated by the international community. One hundred globally harmonized indicators appear to be the upper limit of feasibility (Box 2). In addition, countries will identify a nationally appropriate number of Complementary National Indicators.

2. Simple, single-variable indicators with straightforward policy implications: Indicators need to be simple to compile and easy to interpret and communicate. They must also have clear policy implications. For global reporting composite indices should be avoided where possible since they require more complex data collection methods, and often rely on imputation for missing variables and arbitrary

[20] United Nations (2003). *Indicators for Monitoring the Millennium Development Goals: Definitions, Rationale, Concepts, and Sources*. New York, NY: United Nations. Also featured in the Report of the Friends of the Chair Group on Broader Measures of Progress, released on 16th December 2014 [E/CN.3/2015/2].

[21] United Nations (2012). *The Future We Want, Our Common Vision*. Outcome document of the Rio+20 Conference; HLP (2013); and IEAG on the Data Revolution (2014).

weighting. Moreover, composite indices do not lend themselves easily to policy recommendations, and they expand the number of (underlying) variables that need to be collected through official statistical systems, which might undermine the feasibility of a monitoring framework. Instead, Global Monitoring Indicators should rely as much as possible on metrics that consist of one variable only.[22]

3. Allow for high frequency monitoring: Timeliness is crucial for data to be a useful management and policy tool. To align with national planning and budgetary processes, SDG monitoring should operate on an annual cycle. The MDGs were also reported annually, but data featured in annual reports was often two to three years out of date, if available at all. To overcome this, the SDG indicators should lend themselves to annual production, or bi- or tri-yearly production with interim annual figures produced using robust estimation methodologies (Annex 2, page 92). These figures would then be reported upon annually, within an internationally harmonized national monitoring cycle.

4. Consensus-based, in line with international standards and information already collected by national and environmental-economic information systems: Global Monitoring Indicators should be underpinned by a broad international consensus on their measurement and be based on international standards, recommendations, and best practices to facilitate international comparison. Where possible, indicators should be broadly consistent with systems of national accounts, systems of environmental-economic accounting, and other systems-based information.

5. Constructed from well-established data sources: Indicators should draw on well-established sources of public and private data, and be consistent to enable measurement over time. For a small number of new indicators, well-established data sources may be unavailable. In such cases, the establishment of a baseline will need to be an urgent priority over the next two or more years.

6. Disaggregated: Preference should be given to indicators that lend themselves to disaggregation in order to track inequalities in SDG achievement. As the HLP report recommends, targets can only be considered achieved if they are met for all relevant groups.[23] As reviewed in detail in Annex 3 (page 96), key dimensions for disaggregation include:

(i) characteristics of the individual or household (e.g. sex, age, income, disability, religion, ethnicity and indigenous status);
(ii) economic activity;
(iii) spatial dimensions (e.g. by metropolitan areas, urban and rural, or districts).

7. Universal: The set of SDG indicators as a whole needs to track a universal agenda. Most though not all Global Monitoring Indicators should therefore be applicable in developed as well as developing countries. Given the many layers of the SDG monitoring process, indicators should be applicable at the global, regional, national, and local levels (Figure 2). The ability of indicators to be localized is particularly important to encourage active implementation of the agenda within subnational levels of government, such as cities, which are home to over half of the global population.

[22] The Global Monitoring Indicators presented in this report include a small number of composite indices as exceptions from principle 2. The motivation for each exception is explained in the text. The arguments against the use of composite indices apply less to Complementary National Indicators where the number of underlying variables does not need to be restricted. Hence composite indices can play an important role in supporting national monitoring processes. They may also be useful for thematic monitoring.

[23] HLP (2013), 17.

8. Mainly outcome-focused: As with SDG targets, it is generally preferable for Global Monitoring Indicators to track outcomes (or the ends) rather than means. Yet the choice between input and outcome measures must be handled pragmatically. In some cases, input metrics can play a critical role in driving and tracking the changes needed for sustainable development. For example, access to health services is a vital component of Universal Health Coverage. Similarly, Official Development Assistance (ODA) is difficult to mobilize but critical for achieving the SDGs. Finally, some environmental change occurs slowly and with long lag times, so that intermediate metrics are necessary to track progress. Indicators for national and thematic monitoring will likely focus to a greater extent on tracking inputs and process metrics for implementation.

9. Science-based and forward-looking: The SDGs are expected to cover a 15-year period. Much will change in that time. For example, the world population is projected to increase by 1 billion people by 2030, and two-thirds of those will be living in cities. Indicators must be designed in such a way to account for these changing global dynamics and to anticipate future changes. The indicator framework must also be flexible and allow for new indicators to replace outdated ones.

10. A proxy for broader issues or conditions: A single indicator cannot measure every aspect of a complex issue, but well-chosen Global Monitoring Indicators can track broader concepts. For example, to measure rule of law and access to justice, several aspects must be measured, including the capacity to redress crime, citizens' trust in the police and court systems, and the rates of redress. The proposed indicator on the investigation and sentencing of sexual and gender-based violent crimes serves as a proxy for the treatment of vulnerable groups and access to justice overall. As described further in Annex 1 (page 67), the indicator and monitoring framework needs to track a number of cross-cutting issues that may not be captured in the title of individual goals.

As illustrated in Figure 2 and the preceding chapter, national, regional, and thematic monitoring serve specific purposes, which must be reflected in the choice of indicators. As a result, some of the principles for setting Global Monitoring Indicators may not apply. For example, national indicators reflect national priorities and traditions, so they do not need to be harmonized internationally. Countries may also place a much greater emphasis on tracking the implementation of their strategies for achieving the SDGs, including through nationally appropriate indicators on policies and laws, which would be difficult to harmonize at the global level. Similarly, countries may opt to use non-official data for their own purposes. Analogous considerations apply to regional monitoring.

The health sector demonstrates how thematic monitoring can make effective use of process indicators, such as the number of Directly Observed Therapy Short course (DOTS) administered to treat TB or the share of hospitals stocking the full set of essential medicines. Such process metrics provide a rich understanding of how sectors are performing and allow countries to share lessons. Thematic monitoring offers the scale and flexibility to test new approaches to data collection and make creative use of technological innovations as described in Section IV.3 below. It may also make greater use of composite indicators that lend themselves to support effective communication.

All of the principles above must be used when selecting SDG indicators. Taken together, the principles also reflect the integrated nature of the SDGs. The SDGs proposed by the OWG rightly emphasize the need for integration across the goals. For example, gender equality must be addressed in virtually every goal, and decarbonization or sustainable consumption and production cannot be pursued by undermining economic growth. This integration must be reflected in the design of the indicator and monitoring framework (see Box 4).

Together, indicators for national, regional, thematic, and global monitoring will help the SDGs provide a rich, integrated, and dynamic framework. Chosen carefully, the indicators will complement one another, thereby strengthening the comparative advantages of each monitoring level. Above all, in collecting and sharing information on progress towards the SDGs, they will provide a dynamic framework that will foster a crucial innovation: a data revolution for the SDGs.

Box 4: Designing an integrated indicator and monitoring framework

The SDSN has paid careful attention to the need for the indicators to track the breadth of the SDG agenda. As a result, many global and national indicators contribute to tracking several SDG targets, and many targets require several indicators (Table 2). Together, the 100 GMIs proposed in this report constitute an integrated indicator framework.

Some analysts have suggested that each indicator should be "integrated," but such a principle is hard to operationalize in practice without resorting to composite indices that we consider inadvisable for the reasons outlined in our principles. Indicators need to be simple and easy to communicate, so they should track clearly identified variables that may capture only part of an issue.

Take the example of sustainable agriculture, which is multi-faceted and covers the full spectrum of the economic, social, and environmental dimensions of sustainable development. Some indicators are required to track productivity (e.g. crop yield gap or productivity growth). Others will track the environmental impact of agriculture (e.g. water use, nitrogen flows, land-use change). Yet others need to track the social dimension of agriculture, particularly support to smallholder farmers (e.g. extension workers). Agriculture-related nutrition and food security metrics cut across the economic and social sphere (e.g. stunting, micronutrient deficiencies). Countries will develop a robust understanding of sustainable agriculture by considering in combination a reasonable range of indicators.

The indicators need to be considered as an integrated package and must work in harmony with one another. They should help us look at every issue through an economic, social, and environmental lens. Only by monitoring all GMIs can we understand whether the world is on track for achieving sustainable development. In turn, this reinforces the need for a limited number of GMIs or else the SDG indicators, and monitoring itself, may become difficult to manage and hard to communicate.

IV. Priority Challenges in Setting SDG Indicators

A first critical step in launching a data revolution for development must be to ensure that all countries and the international community are well equipped to monitor them with robust indicators, so they can serve their dual purpose as management tool and report card. To the extent possible, monitoring should start in 2016, when the SDGs will take effect. To this end, three priority challenges must be urgently addressed.

1. Filling gaps in available indicators

Many indicators, especially relating to poverty and economic development, are already collected (e.g. as part of the MDG process), but in some areas, new indicators will have to be developed together with information-gathering systems. Some new indicators are presented in this report. Preliminary suggestions and indicators still under development are presented in square brackets.

Developing new indicators will in some cases require major investments in the national and international capacity to collect and analyze data. In many cases, sound indicators exist, but data is not systematically collected on a routine, harmonized, and comparable basis–particularly in low-income countries. As highlighted in three SDSN Briefing Papers on household survey and indicator coverage, important gaps exist, particularly for key social and environmental metrics.[24] The coming months need to be used by NSOs and the international organizations to identify practical strategies for filling data gaps. In some cases, this will require increased investments in national statistical systems.

In preparing this report, the SDSN has consulted extensively to obtain feedback from interested international institutions and other organizations on the relevance, accuracy, appropriateness, and realism of the recommended indicators. In some cases, not every suggestion may be possible to implement in a timely and accurate manner. In other cases, additional indicators may need to be considered.

We encourage the competent specialized agencies of the UN System, NSOs, and other international statistical organizations, such as the OECD or Eurostat, to identify and review available indicator options for each major gap. Decisions on what can actually be measured should be guided by the relevant expert communities, with the advice and leadership of the global institutions charged with oversight, measurement, standards, and implementation of programs.

2. Moving towards annual monitoring

Timeliness of SDG data is crucial if the Goals are to be a management and policy tool. To align with national planning and budgetary processes, SDG monitoring needs to operate on an annual cycle. Ensuring annual and up-to-date data will be a major step towards achieving a data revolution for development. For a more detailed discussion of annual monitoring, please see Annex 2 (page 92).

[24] See i) Cassidy, M. (2014); ii) Alkire, S. and Samman, E. (2014), *Mobilizing the household data required to progress toward the SDGs*. SDSN Briefing Paper; and iii) Alkire, S (2014). *Towards frequent and accurate poverty data.* SDSN Briefing Paper.

Annual monitoring on progress does not necessarily mean that new data need to be produced every year. For a number of indicators this may be impossible or inadvisable.[25] In such cases producing data every two to three years and doing robust projections, extrapolations or modeled estimates may be sufficient. But even this level of frequency will require a step change in the way data is collected and disseminated.

Given how infrequently some indicators are collected today, it might seem impossible to shift towards such high frequency monitoring for SDG indicators. Yet a careful review of the issues suggests it is utterly feasible. In fact, many countries have shown what can be done with clear commitments, the creative use of modern technologies, institutional innovation, and modest resources. Some 60 countries already report annual figures on multiple social and economic indicators based on annual survey data.

International institutions also have made the effort to generate annual estimates. Such approaches could be applied to other SDG indicators to enable timely annual monitoring of progress.[26] In this context we applaud the World Bank's recent commitment to report annually on poverty and boosting shared prosperity.[27]

3. Adopting innovative approaches to data collection and establishing strategies to harmonize unofficial metrics

Monitoring the SDGs requires many different types of data. Taken together, they will enable launching a data revolution for development. Official statistics derived from surveys and other official administrative data will play a critical, preeminent role. They will be complemented by unofficial data, and other performance metrics including business metrics, polling data, and georeferenced information on government facilities, among others.

This report, the product of a broad consultative exercise, and the findings from earlier consultations, suggest that official data, including international household survey data, will play a critical role for the foreseeable time in tracking the SDGs and shaping governments programs. But the revolution in information and communication technologies and the growing role of civil society organizations and businesses offer unprecedented opportunities for using new types of complementary metrics and data.

Of particular importance is georeferenced data that can now be collected easily using mobile phones to provide location-specific information on government facilities, water points, and environmental challenges. As one impressive example, the Nigerian Senior Special Advisor to the President on the MDGs, with support from the Earth Institute's Sustainable Engineering Laboratory, developed the Nigeria MDG Information System, an online interactive data platform. Using this system, all government

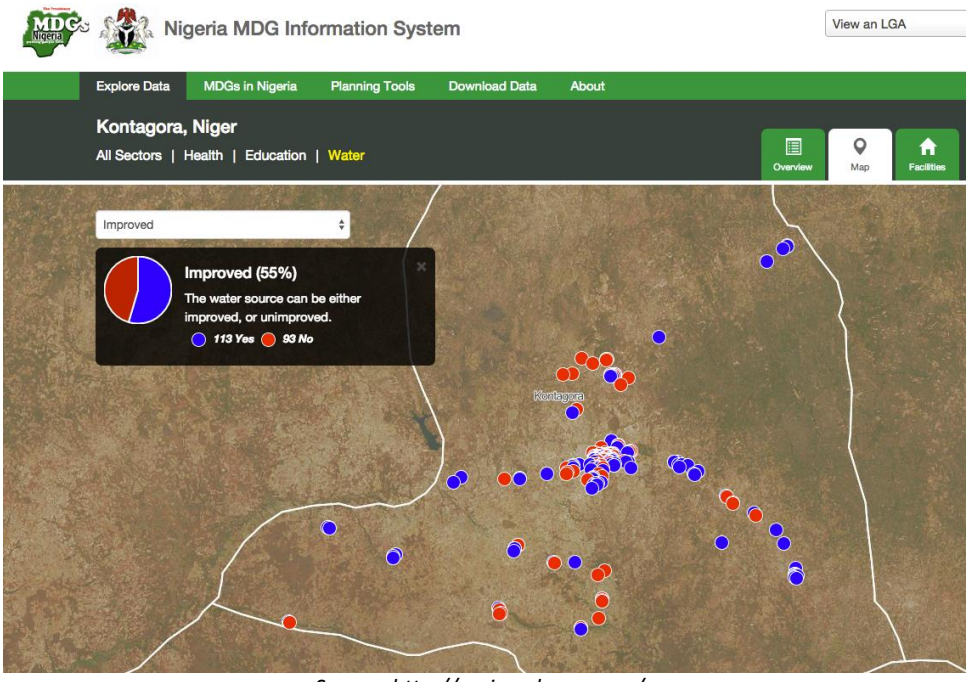
[25] Indicators unsuited to annual production are indicators that (i) exhibit year-on-year variation that is significantly smaller than the error margin, (ii) require a very large number of observations to be computed, (iii) may be affected or compromised by year on year monitoring, such as attitudinal and behavior change. A preliminary assessment suggests that this applies to at least four GMIs featured in this report: life expectancy, maternal mortality rate, fertility rate, and prevalence of non-communicable diseases.

[26] See the CME Info online database: www.childmortality.org

[27] See World Bank President Jim Yong Kim's Speech at Georgetown University (April 2013), online at: http://www.worldbank.org/en/news/speech/2013/04/02/world-bank-group-president-jim-yong-kims-speech-at-georgetown-university

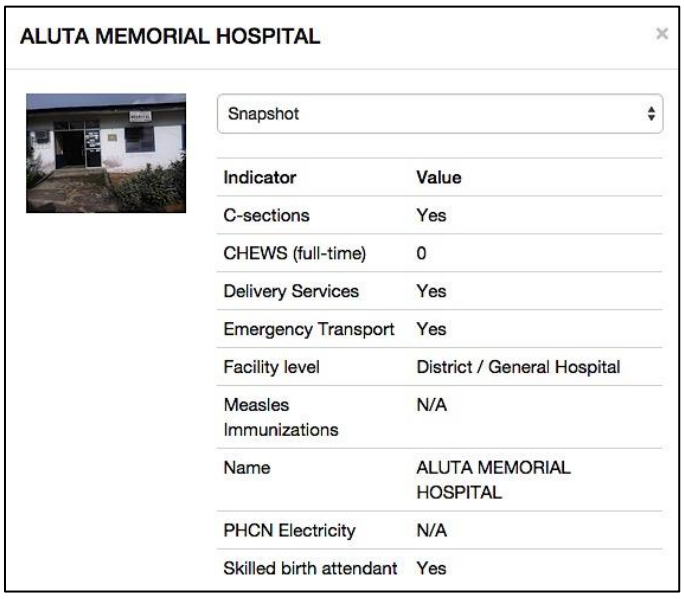
health and education facilities as well as water access points were mapped across Nigeria within a mere two months (Figure 4).

Figure 4: Screenshot of Nigeria MDG Information System showing the location and status of water sources in the Kontagora region of Niger State, Nigeria



Source: *http://nmis.mdgs.gov.ng/*

Figure 5: Screenshot of Nigeria MDG Information System - information on general hospital in the Isoko south region of Delta State, Nigeria



Source: http://nmis.mdgs.gov.ng/

The system now reports the latest status of more than 250,000 facilities using data generated with the help of smartphones. Any internet user can now ascertain the status of every facility across the entire country (Figure 5).

The software tools used for the Nigeria MDG Information System are open-source. National and sub-national governments, civil society organizations, and businesses can use them to develop dedicated georeferenced surveys for a variety of purposes. For example, such tools make it possible to generate the management information that local authorities need in order to improve service delivery. They can also be used by civil society organizations for example to track which infrastructure facilities are fully operational or where illegal logging is occurring.

Specialized UN agencies and other international organizations should organize thematic discussions with NSOs, businesses, and civil society organizations to determine the most promising uses of georeferenced data and to identify complementary metrics to official SDG indicators. Such groups can then propose standards and systems for collecting and processing such data.

V. Next Steps and Opportunities for Leadership

The experience of the MDGs underscores the importance of thinking through the indicators as early as possible, to ensure the goals and targets can be monitored and implemented. So far, the international community's attention has been focused primarily on defining goals and targets. The next step is to agree on the indicators and associated monitoring systems so that the world will be ready to implement the SDGs in 2016.

Success will require a data revolution for development, following some of the bold but feasible steps outlined in this report. Key milestones on the way to building an effective indicator and monitoring framework for the SDGs include:

(i) a multi-stakeholder process to identify global indicators and baselines via the IEAG-SDG;
(ii) ongoing thematic consultations to agree upon long-lists of specialist indicators for thematic monitoring; and
(iii) the establishment of a Global Partnership for Sustainable Development Data, to fulfill the Data Revolution.

1. Multi-stakeholder process to set Global Monitoring Indicators and establish baselines

The UN Statistical Commission (UNSC) at its 46th session (March 5-6, 2015) discussed the roadmap for developing and implementing an SDG indicator and monitoring framework. Given the breadth and complexity of the SDG agenda, it has recommended the creation of an Inter-Agency Expert Group on SDG Indicators, consisting of *"national statistical offices and, as observers, the regional and international organizations and agencies, that will be tasked with fully developing a proposal for the indicator framework for the monitoring of the goals and targets of the post-2015 development agenda at the global level, under the leadership of the national statistical offices."*[28] This is a welcome first step, though SDSN encourages this group to involve all branches of government, civil society, business, and other stakeholders, to contribute towards the development of Global Monitoring Indicators. We hope that this report will make a contribution towards this multi-stakeholder process and towards science-based SDG indicators.

As recommended by the Friends of the Chair Group on Broader Measures of Progress and in the Technical Report of the Bureau of the UN Statistical Commission, a set of indicative indicators should be developed by September 2015, so that a definitive set can be adopted by the 47th session of the UNSC in 2016. An urgent priority will be to establish baselines for monitoring the indicators. Where indicators are already well understood and a consensus is emerging around them, the establishment of adequate baselines can start right away.

2. Thematic consultations

During 2015, UN agencies and other organizations have an opportunity to convene multi-stakeholder consultations involving governments, civil society, business, and science in order to develop thematic monitoring frameworks as described above. These groups should fill gaps in available indicators and develop detailed recommendations on how to move towards annual monitoring of priority thematic

[28] Bureau of the United Nations Statistical Commission, (March 2015), *Technical report on the process of the development of an indicator framework for the goals and targets of the post-2015 development agenda - Working draft*.

indicators. For example, more regular monitoring on child nutrition may require increased investments in household surveys or health-sector administrative data collection. Alternatively, it may require investments in national statistical literacy to enable NSOs to compute robust year-on-year estimations.

Another key technical challenge for consideration in thematic consultations is how each Global Monitoring Indicator can be collected in ways that enable sufficient disaggregation. For some indicators, this may require twinning official metrics with geospatial data or using larger sample sizes. Each indicator will need to be accompanied by a comprehensive strategy explaining how detailed disaggregated data can be compiled.

The consultations need to consider official as well as non-official statistics and the potential offered by big data and innovative technologies. Fostering innovation will be particularly important to ensure that each indicator is sufficiently disaggregated so that countries can make sure that "no one is left behind." It may also enable countries to leapfrog the use of labor-intensive statistical tools, in favor of cost-saving metadata analysis.

Currently, UN organizations work on these issues to varying degrees. Some have already started reaching out to businesses and NGOs, but others focus solely on official indicator sets. The UN Chief Executive Board for Coordination (CEB) could table this important issue to encourage leadership by agencies in their respective areas, identify best practices, promote coordination, and explore ways in which the UN System can support innovation in driving a data revolution for development. Together, these thematic consultations will help translate the data revolution into practical action, with clear roles and responsibilities for UN agencies, member states, the scientific community, civil society, and business.

3. Global Partnership for Sustainable Development Data: global standards, greater innovation, and adequate resources

In its report *A World That Counts,* the Independent Expert Advisory Group on the Data Revolution recommends a UN-led "Global Partnership for Sustainable Development Data." The role of the partnership would be to mobilize and coordinate as many initiatives and institutions as possible to achieve a data revolution for development. In practice, this partnership may consist of a high-level multi-stakeholder committee, with representatives from the UN, national governments, businesses, academia, science and civil society. The committee would perform three essential functions:

(i) convening diverse data communities (such as Members of the Open Government Partnership and the G8 Open Data Charter) to foster consensus and harmonize global standards;
(ii) incentivizing innovation and encouraging public-private partnerships for data; and
(iii) mobilizing additional resources.

A set of global standards for data harmonization and use will be essential for national governments and NSOs to effectively compile, interpret, and utilize the broad range of development data sets. Standardization will be particularly important for non-official sources of data, such as business monitoring, which over time may be used to complement official metrics. In the short- to medium term, standardizing efforts may require more methodological research to better understand how unofficial or big data can be used to complement official sources. A high-level, powerful group will be essential to convene the various data and transparency initiatives under one umbrella, in support of sustainable development, and to secure the cooperation of both Member States and businesses.

Second, any new Global Partnership for Sustainable Development Data should strive to **foster innovation** in SDG monitoring. The IEAG on the Data Revolution has recommended a web of data innovation networks to advance innovation and analysis. To focus energies and incentivize year on year progress, we also recommend an annual prize, awarded at an annual conference or "World Forum on Sustainable Development Data."[29] This award would be given to NSOs, specialist groups, civil society organizations, or businesses that have developed innovative approaches to improve SDG indicators (e.g. by increasing the frequency or disaggregation) or replace existing indicators with new metrics that are better and/or less expensive to collect.

A third core function of the Global Partnership will be to **mobilize additional resources** to support sound monitoring system. SDSN has been working in coalition with more than 15 organizations, including Open Data Watch, PARIS21, the World Bank, and others, to consolidate available data on the levels of investment required for SDG monitoring and statistical capacity development. Our new report, *Data for Development: A Needs Assessment for SDG Monitoring and Statistical Capacity*, estimates that the 77 ODA-eligible countries will need to spend approximately $1 billion a year to upgrade their statistical systems and carry out regular data collection for the SDGs. Although it is hard to estimate an exact funding gap, it is clear that there is a large margin between current expenditures and future requirements. An analysis of National Strategies for the Development of Statistics (NSDSs) shows that countries are planning on aid at a level of 49% of current NSDS budgets. Donors will therefore need to maintain current contributions to statistics, of approximately US$300 million per annum, and go further, leveraging US$100-200 million more in Official Development Assistance (ODA) to support country efforts.[30]

Current financing mechanisms and modalities for data are not only underfunded, they are also fragmented and beset with high transaction costs. In addition to quantifying incremental financing needs, the international community will therefore need to determine how additional resources can be used most effectively for maximum results. Experience in other areas suggests that pooled financing mechanisms can be very effective by:

(i) reducing transaction costs and minimizing duplication;
(ii) strengthening national ownership in the design and implementation of programs;
(iii) facilitating knowledge transfer and the consolidation of lessons learnt across countries;
(iv) facilitating partnerships with the private sector through dedicated windows for public-private partnerships; and
(v) supporting transparent criteria for countries' resource mobilization.[31]

Based on a clear indicator framework and a robust needs assessment, the first steps towards a data revolution can start now, including vital resource mobilization. Given the public attention that will be paid to the SDGs during 2015, it would seem possible to complete the fundraising by the latter half of the year–in time for implementation. As part of these efforts, recommendations on pooled funding mechanisms for SDG data should be considered as soon as possible, with the intention that a coordinated mechanism will launch in early 2016.

[29] UN Secretary General (2014), para. 143.
[30] Espey, J. et al.(2015*) A Needs Assessment for SDG Monitoring and Statistical Capacity Development*, SDSN Report, Paris France and New York, USA: SDSN.
[31] Sachs, J. and G Schmidt-Traub (2013). F*inancing for development and climate change post-2015*. SDSN Briefing Paper, Paris, France and New York, USA: SDSN.

Figure 6: Opportunities for action: a timeline of key processes for monitoring and review

In our consultations with technical communities, including NSOs, UN and other international organizations, scientists, civil society groups, and business organizations, we have witnessed outstanding expertise and tremendous enthusiasm for making the SDGs and their monitoring a success. We are convinced that these practical steps can be taken in a timely fashion. Over time, an SDG data revolution, in which vastly greater volumes of data are collected in a harmonized manner, can put powerful statistics in the service of humanity and the planet. The SDSN will continue to support UNSD and to work with other interested partners to help develop a sound SDG indicator and monitoring framework, and to realize the great potential of the data revolution for sustainable development.

Table 1: Suggested SDG Indicators arranged by OWG Goals

This table identifies potential lead agencies for each indicator and highlights cross-references to other goals. For ease of presentation, it lists the indicators by goals proposed by the OWG. Table 2 on page 39 provides a complementary summary of indicators by OWG targets. It demonstrates that the suggested indicators contribute directly to the measurement of several targets.

Indicator number	Potential and Indicative Indicator	Potential lead agency or agencies	Other goals indicator applies to
Goal 1. End poverty in all its forms everywhere			
1	Proportion of population below $1.25 (PPP) per day (MDG Indicator)	World Bank	8
2	Proportion of population living below national poverty line, by urban/rural (modified MDG Indicator)	World Bank, UN DESA	11
3	Multidimensional Poverty Index	UNDP, World Bank, UNSD, UNICEF	2, 3, 4, 8, 11
4	Percentage of eligible population covered by national social protection programs	ILO	8, 10, 11
5	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.	FAO, UNDP, UN-Habitat	2, 5, 10, 11
6	Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)	UNISDR, FAO, WHO, CRED	2, 6, 11, 13
7	Total fertility rate	UN Population Division, UNFPA	
	Complementary National Indicators: 1.1. Poverty gap ratio (MDG Indicator) 1.2. Percentage of population using banking services (including mobile banking) 1.3. [Indicator on equal access to inheritance] – to be developed 1.4. [Disaster Risk Reduction Indicator] – to be developed		
Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture *See Annex 1 (page 67) for a synthesis of how indicators track food security and nutrition across all goals*			
8	Proportion of population below minimum level of dietary energy consumption (MDG Indicator)	FAO, WHO	3
9	Percentage of women of reproductive age (15-49) with anemia	FAO, WHO	3
10	Prevalence of stunting and wasting in children under 5 years of age	WHO, UNICEF	1, 3
11	Percentage of infants under 6 months who are exclusively breast fed	WHO, UNICEF	3
12	Percentage of women, 15-49 years of age, who consume at least 5 out of 10 defined food groups	FAO, WHO	3, 5
13	Crop yield gap (actual yield as % of potential or water-limited potential yield)	FAO	
14	Number of agricultural extension workers per 1000 farmers [or share of farmers covered by agricultural extension programs and services]	FAO	

15	Nitrogen use efficiency in food systems	FAO, International Fertilizer Industry Association (IFA)	
16	[Crop water productivity (tons of harvested product per unit irrigation water)] – to be developed	FAO	6
	Complementary National Indicators: 2.1. Percentage of population with shortfalls of: iron, zinc, iodine, vitamin A, folate, vitamin B12, [and vitamin D] 2.2. Proportion of infants 6–23 months of age who receive a minimum acceptable diet 2.3. Percentage children born with low birth weight 2.4. Cereal yield growth rate (% p.a.) 2.5. Livestock yield gap (actual yield as % of attainable yield) 2.6. [Phosphorus use efficiency in food systems] – to be developed 2.7. Share of calories from non-staple crops 2.8. Percentage of total daily energy intake from protein in adults 2.9. [Access to drying, storage and processing facilities] – to be developed 2.10. [Indicator on genetic diversity in agriculture] – to be developed 2.11. [Indicator on irrigation access gap] – to be developed 2.12. [Farmers with nationally appropriate crop insurance (%)] – to be developed 2.13. Public and private R&D expenditure on agriculture and rural development (% of GNI) 2.14. [Indicator on food price volatility] – to be developed		
Goal 3. Ensure healthy lives and promote well-being for all at all ages *See Annex 1 (page 67) for a synthesis of how indicators track health across all goals*			
17	Maternal mortality ratio (MDG Indicator) and rate	WHO, UN Population Division, UNICEF, World Bank	5
18	Neonatal, infant, and under-5 mortality rates (modified MDG Indicator)	WHO, UNICEF, UN Population Division	
19	Percent of children receiving full immunization (as recommended by national vaccination schedules)	UNICEF, GAVI, WHO	
20	HIV incidence, treatment rate, and mortality (modified MDG Indicator)	WHO, UNAIDS	
21	Incidence, prevalence, and death rates associated with all forms of TB (MDG Indicator)	WHO	
22	Incidence and death rates associated with malaria (MDG Indicator)	WHO	
23	Probability of dying between exact ages 30 and 70 from any of cardiovascular disease, cancer, diabetes, chronic respiratory disease, [or suicide]	WHO	11
24	Percent of population overweight and obese, including children under 5	WHO	12
25	Road traffic deaths per 100,000 population	WHO, UN-Habitat	9, 11
26	[Consultations with a licensed provider in a health facility or the community per person, per year] – to be developed	WHO	
27	[Percentage of population without effective financial protection for health care] – to be developed	WHO	11
28	Proportion of persons with a severe mental disorder (psychosis, bipolar affective disorder, or moderate-severe depression) who are using services	WHO	
29	Contraceptive prevalence rate (MDG Indicator)	UN Population	5

		Division and UNFPA	
30	Current use of any tobacco product (age-standardized rate)	WHO	12
	Complementary National Indicators: 3.1. Percentage of births attended by skilled health personnel (MDG Indicator) 3.2. Antenatal care coverage (at least one visit and at least four visits) (MDG Indicator) 3.3. Post-natal care coverage (one visit) (MDG Indicator) 3.4. Coverage of iron-folic acid supplements for pregnant women (%) 3.5. Incidence rate of diarrheal disease in children under 5 years 3.6. Percentage of 1 year-old children immunized against measles (MDG Indicator) 3.7. Percent HIV+ pregnant women receiving PMTCT 3.8. Condom use at last high-risk sex (MDG Indicator) 3.9. Percentage of tuberculosis cases detected and cured under directly observed treatment short course (MDG Indicator) 3.10. Percentage of children under 5 with fever who are treated with appropriate anti-malarial drugs (MDG Indicator) 3.11. Percentage of people in malaria-endemic areas sleeping under insecticide-treated bed nets (modified MDG Indicator) 3.12. Percentage of confirmed malaria cases that receive first-line antimalarial therapy according to national policy 3.13. Percentage of suspected malaria cases that receive a parasitological test 3.14. Percentage of pregnant women receiving malaria IPT (in endemic areas) 3.15. Neglected Tropical Disease (NTD) cure rate 3.16. Incidence and death rates associated with hepatitis 3.17. Percentage of women with cervical cancer screening 3.18. Percentage of adults with hypertension diagnosed & receiving treatment 3.19. Harmful use of alcohol 3.20. Healthy life expectancy at birth 3.21. Waiting time for elective surgery 3.22. Prevalence of insufficient physical activity 3.23. Fraction of calories from saturated fat and added sugar 3.24. Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years 3.25. Prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruit and vegetables per day 3.26. Percentage change in per capita [red] meat consumption relative to a 2015 baseline 3.27. Age-standardized (to world population age distribution) prevalence of diabetes (preferably based on HbA1c), hypertension, cardiovascular disease, and chronic respiratory disease 3.28. [Mortality from indoor air pollution] – to be developed 3.29. Percentage of health facilities meeting service specific readiness requirements 3.30. Percentage of population with access to affordable essential drugs and commodities on a sustainable basis 3.31. Percentage of new health care facilities built in compliance with building codes and standards 3.32. Public and private R&D expenditure on health (% GNP) 3.33. Ratio of health professionals to population (MDs, nurse midwives, nurses, community health workers, EmOC caregivers) 3.34. Percentage of women and men aged 15–49 who report discriminatory attitudes towards people living with HIV 3.35. Stillbirth rate		
Goal 4. Ensure inclusive and equitable quality education and promote life-long learning opportunities for all			
31	Percentage of children (36-59 months) receiving at least one year of a quality pre-primary education program	UNESCO, UNICEF, World Bank	
32	Early Child Development Index (ECDI)	UNICEF,	

		UNESCO	
33	Primary completion rates for girls and boys	UNESCO	5
34	[Percentage of girls and boys who master a broad range of foundational skills, including in literacy and mathematics by the end of the primary school cycle (based on credibly established national benchmarks)] – to be developed	UNESCO	5
35	Secondary completion rates for girls and boys	UNESCO	5, 8
36	[Percentage of girls and boys who achieve proficiency across a broad range of learning outcomes, including in literacy and in mathematics by end of lower secondary schooling cycle (based on credibly established national benchmarks)] – to be developed	UNESCO	5
37	Tertiary enrollment rates for women and men	UNESCO	5, 8
	Complementary National Indicators: 4.1. [Percentage of girls and boys who acquire skills and values needed for global citizenship and sustainable development (national benchmarks to be developed) by the end of lower secondary] – to be developed 4.2. Percentage of children under 5 experiencing responsive, stimulating parenting in safe environments 4.3. Number of children out of school 4.4. [Percentage of adolescents (15-19 years) with access to school-to-work programs] – to be developed 4.5. Literacy rate of 15-24 year-olds, women and men (MDG Indicator) 4.6. [Percentage of young adults (18-24 years) with access to a learning program]-to be developed 4.7. [Indicator on share of education facilities that provide an effective learning environment] – to be developed 4.8. Pupil to computer ratio in primary and secondary education 4.9. [Indicator on scholarships for students from developing countries] – to be developed 4.10. [Indicator on supply of qualified teachers] – to be developed 4.11. Presence of legal frameworks that guarantee the right to education for all children for early childhood and basic education, and that guarantee a minimum age of entry to employment not below the years of basic education.		
Goal 5. Achieve gender equality and empower all women and girls *See Annex 1 (page 67) for a synthesis of how indicators track gender equality across all goals*			
38	Prevalence of girls and women 15-49 who have experienced physical or sexual violence [by an intimate partner] in the last 12 months	WHO, UNSD	3
39	Percentage of referred cases of sexual and gender-based violence against women and children that are investigated and sentenced	UN Women	16
40	Percentage of women aged 20-24 who were married or in a union by age 18	UNICEF	3
41	Percentage of girls and women aged 15-49 years who have undergone FGM/C	UNICEF	3
42	Average number of hours spent on paid and unpaid work combined (total work burden), by sex	ILO with IAEG-GS (UNSD)	
43	Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)	Inter-Parliamentary Union (IPU)	10, 16
44	Met demand for family planning (modified MDG Indicator)	UN Population Division, UNFPA	3
	Complementary National Indicators: 5.1. Gender gap in wages, by sector of economic activity 5.2. Share of women on corporate boards of national / multi-national corporations (MNCs) 5.3. Percentage of women without incomes of their own 5.4. Adolescent birth rate (MDG Indicator) 5.5. Percentage of young people receiving comprehensive sexuality education		

Goal 6. Ensure availability and sustainable management of water and sanitation for all *See Annex 1 (page 67) for a synthesis of how indicators track water and sanitation across all goals*			
45	Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)	WHO/UNICEF Joint Monitoring Programme (JMP)	1, 2, 3, 9, 11
46	Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)	WHO/UNICEF JMP	1, 2, 3, 9, 11
47	Percentage of wastewater flows treated to national standards [and reused] – to be developed	WHO/UNICEF JMP	3, 9, 11, 12, 14
48	[Indicator on water resource management] – to be developed	UN Water	12, 14, 15
49	Proportion of total water resources used (MDG Indicator)	FAO, UNEP	2, 9, 11, 12
	Complementary National Indicators: 6.1. Percentage of population practicing open defecation 6.2. Percentage of population with basic hand washing facilities with soap and water at home 6.3. Proportion of the population connected to collective sewers or with on-site storage of all domestic wastewaters 6.4. Percentage of pupils enrolled in primary schools and secondary schools providing basic drinking water, adequate sanitation, and adequate hygiene services 6.5. Percentage of beneficiaries using hospitals, health centers and clinics providing basic drinking water, adequate sanitation, and adequate hygiene 6.6. Proportion of the flows of treated municipal wastewater that are directly and safely reused 6.7. [Reporting of international river shed authorities on transboundary river-shed management] – to be developed 6.8. [Indicator on international cooperation and capacity building in water and sanitation-related activities] – to be developed 6.9. [Indicator on participation of local communities for improving water and sanitation management] – to be developed		
Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all *See Annex 1 (page 67) for a synthesis of how indicators track sustainable energy for all across all goals*			
50	Share of the population using modern cooking solutions, by urban/rural	Sustainable Energy for All, IEA, WHO	1, 3, 5, 9, 11, 12
51	Share of the population using reliable electricity, by urban/rural	Sustainable Energy for All, IEA, World Bank	1, 3, 5, 9, 11, 12
52	Implicit incentives for low-carbon energy in the electricity sector (measured as US$/MWh or US$ per ton avoided CO_2)	IEA, UNFCCC	11, 13
53	Rate of primary energy intensity improvement	Sustainable Energy for All, IEA	11, 13
	Complementary National Indicators: 7.1. Primary energy by type 7.2. Fossil fuel subsidies ($ or %GNI) 7.3. Share of energy from renewables		
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all *See Annex 1 (page 67) for a synthesis of how indicators track growth and employment across all goals*			
54	GNI per capita (PPP, current US$ Atlas method)	IMF, World Bank, UNSD	11

55	Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts	UNSD	12, 17
56	Youth employment rate, by formal and informal sector	ILO	11
57	Ratification and implementation of fundamental ILO labor standards and compliance in law and practice	ILO	5, 9, 10, 11, 17
	Complementary National Indicators: 8.1. Growth rate of GDP per person employed (MDG Indicator) 8.2. Working poverty rate measured at $2 PPP per capita per day 8.3. [Indicator of decent work] – to be developed 8.4. Household income, including in-kind services (PPP, current US$) 8.5. Employment to population ratio (EPR) by gender and age group (15–64) 8.6. Share of informal employment in total employment 8.7. Percentage of own-account and contributing family workers in total employment 8.8. Percentage of young people not in education, employment or training (NEET) 8.9. [Indicator on implementation of 10-year framework of programs on sustainable consumption and production] – to be developed		
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation *See Annex 1 (page 67) for a synthesis of how indicators track industrialization across all goals*			
58	Access to all-weather road (% access within [x] km distance to road)	World Bank	2, 7, 11
59	Mobile broadband subscriptions per 100 inhabitants, by urban/rural	ITU	2, 11, 17
60	Index on ICT maturity	ITU	17
61	Manufacturing value added (MVA) as percent of GDP	World Bank, OECD, UNIDO	8, 11
62	Total energy and industry-related GHG emissions by gas and sector, expressed as production and demand-based emissions (tCO_2e)	UNFCCC, OECD, UNIDO	7, 11, 13
63	Personnel in R&D (per million inhabitants)	OECD, UNESCO	8, 17
	Complementary National Indicators: 9.1. Percentage of households with Internet, by type of service by urban/rural areas 9.2. Employment in industry (% of total employment)		
Goal 10. Reduce inequality within and among countries *See Annex 1 (page 67) for a synthesis of how indicators track inequalities across all goals*			
64	[Indicator on inequality at top end of income distribution: GNI share of richest 10% or Palma ratio]	UNSD, World Bank, OECD	1, 8
65	Percentage of households with incomes below 50% of median income ("relative poverty")	World Bank, OECD, UNSD	1, 8
	Complementary National Indicators: 10.1. Gini Coefficient 10.2. Income/wage persistence (intergenerational socioeconomic mobility) 10.3. Human Mobility Governance Index 10.4. Net ODA to LDCs as percentage of high-income countries' GNI (modified from MDG Indicator) 10.5. Indicator on share of LDCs / LIC representatives on boards of IMF / WB (and other institutions of governance) 10.6. [Remittance transfer costs] – to be developed		
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable *See Annex 1 (page 67) for a synthesis of how indicators track sustainable cities and human settlements across all goals*			

66	Percentage of urban population living in slums or informal settlements (MDG Indicator)	UN-Habitat, Global City Indicators Facility	1, 6
67	Percentage of people within 0.5km of public transit running at least every 20 minutes.	UN-Habitat	9
68	[Ratio of land consumption rate to population growth rate, at comparable scale] – to be developed	UN-Habitat, World Bank	3, 12
6 cross-reference	Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)	UNISDR, FAO, WHO, CRED	*1, 2, 6, 13*
69	Mean urban air pollution of particulate matter (PM10 and PM2.5)	UN-Habitat, UNEP, WHO	9, 11, 12
70	Area of public and green space as a proportion of total city space	UN-Habitat	13, 17
71	Percentage of urban solid waste regularly collected and well managed	UN-Habitat, WHO	
95 cross-reference	Domestic revenues allocated to sustainable development as percent of GNI - by sector		
	Complementary National Indicators: 11.1. Number of street intersections per square kilometer 11.2. Existence and implementation of a national urban and human settlements policy framework 11.3. Percentage of cities with more than 100,000 inhabitants that are implementing risk reduction and resilience strategies informed by accepted international frameworks (such as forthcoming Hyogo-2 Framework) 11.4. Presence of urban building codes stipulating either the use of local materials and/or new energy efficient technologies or with incentives for the same 11.5. City biodiversity index (Singapore index) 11.6. Percentage of consumption of food and raw materials within urban areas that are produced and delivered in/from rural areas within the country		
Goal 12. Ensure sustainable consumption and production patterns *See Annex 1 (page 67) for a synthesis of how indicators track SCP across all goals*			
72	Disclosure of Natural Resource Rights Holdings	EITI, UNCTAD, UN Global Compact	15, 16, 17
73	Global Food Loss Index [or other indicator to be developed to track the share of food lost or wasted in the value chain after harvest]	FAO	2, 11
74	Consumption of ozone-depleting substances (MDG Indicator)	UNEP Ozone Secretariat	9
75	Aerosol optical depth (AOD)	UNEP	9, 11, 13
76	[Share of companies valued at more than [$1 billion] that publish integrated monitoring] – to be developed	Global Compact, WBCSD, GRI, IIRC	8, 17
	Complementary National Indicators: 12.1. [Strategic environmental and social impact assessments required] – to be developed 12.2. [Legislative branch oversight role regarding resource-based contracts and licenses]-to be developed 12.3. [Indicator on chemical pollution] – to be developed 12.4. CO_2 intensity of the building sector and of new buildings ($KgCO_2/m2/year$) 12.5. [Indicator on policies for sustainable tourism] – to be developed 12.6. [Indicator on sustainable public procurement processes] – to be developed		

Goal 13. Take urgent action to combat climate change and its impacts *See Annex 1 (page 67) for a synthesis of how indicators track climate change across all goals*			
77	Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.	UNFCCC	9, 11, 12, 17
78	CO_2 intensity of new power generation capacity installed (gCO_2 per kWh), and of new cars (gCO_2/pkm) and trucks (gCO_2/tkm)	UNFCCC, IEA	7, 8, 9, 11
79	Net GHG emissions in the Agriculture, Forest and other Land Use (AFOLU) sector (tCO_2e)	UNFCCC	2, 15
80	Official climate financing from developed countries that is incremental to ODA (in US$)	OECD DAC, UNFCCC, IEA	17
	Complementary National Indicators: 13.1. [Climate Change Action Index] – to be developed 13.2. GHG emissions intensity of areas under forest management ($GtCO_2e$ / ha)		
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development *See Annex 1 (page 67) for a synthesis of how indicators track sustainable oceans across all goals, and Annex 4 (page 99) for an illustration of Thematic Monitoring for this goal area*			
81	Share of coastal and marine areas that are protected	UNEP-WCMC, IUCN	
82	Percentage of fish tonnage landed within Maximum Sustainable Yield (MSY)	FAO	2, 12
	Complementary National Indicators: 14.1. Eutrophication of major estuaries 14.2. Ocean acidity (measured as surface pH) 14.3. [Indicator on the implementation of spatial planning strategies for coastal and marine areas]– to be developed 14.4. Area of coral reef ecosystems and percentage live cover 14.5. Proportion of fish stocks within safe biological limits (MDG Indicator) 14.6. Percentage of fisheries with a sustainable certification 14.7. Does flag state require International Maritime Organization (IMO) numbers and transponders for all fishing vessels more than 24 meters or 100 tons? 14.8. Has Regional Fisheries Management Organizations (RFMO) established satellite- monitoring program? 14.9. [Use of destructive fishing techniques] – to be developed 14.10. [Indicator on access to marine resources for small-scale artisanal fishers] – to be developed 14.11. [Indicator on transferring marine technology] – to be developed 14.12. Area of mangrove deforestation (hectares and as % of total mangrove area)		
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss *See Annex 1 (page 67) for a synthesis of how indicators track sustainable land use and ecosystems across all goals*			
83	Annual change in forest area and land under cultivation (modified MDG Indicator)	FAO, UNEP	2, 12, 13
84	Area of forest under sustainable forest management as a percent of forest area	FAO, UNEP	12
85	Annual change in degraded or desertified arable land (% or ha)	FAO, UNEP	2
86	Red List Index	IUCN	
87	Protected areas overlay with biodiversity	UNEP-WCMC	
	Complementary National Indicators: 15.1. Improved tenure security and governance of forests 15.2. [Indicator on the conservation of mountain ecosystems] – to be developed 15.3. Vitality Index of Traditional Environmental Knowledge		

	15.4. [Indicator on access to genetic resources] – to be developed 15.5. Abundance of invasive alien species 15.6. [Indicator on financial resources for biodiversity and ecosystems] – to be developed 15.7. [Indicator on financial resources for sustainable forest management] – to be developed 15.8. [Indicator on global support to combat poaching and trafficking of protected species] – to be developed 15.9. Living Planet Index		
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels *See Annex 1 (page 67) for a synthesis of how indicators track peace and security, and governance across all goals*			
88	Violent injuries and deaths per 100,000 population	UNODC, WHO, UNOCHA	3, 5, 11
89	Number of refugees	UNHCR, OCHA, IOM	3
90	Proportion of legal persons and arrangements for which beneficial ownership information is publicly available	OECD	17
91	Revenues, expenditures, and financing of all central government entities are presented on a gross basis in public budget documentation and authorized by the legislature	UN Global Compact, EITI, and/or UNCTAD	17
92	Percentage of children under age 5 whose birth is registered with a civil authority	UNICEF	3, 5, 10
93	Existence and implementation of a national law and/or constitutional guarantee on the right to information	UNESCO	10
94	Perception of public sector corruption	Transparency International	
	Complementary National Indicators: 16.1. Percentage of women and men who report feeling safe walking alone at night in the city or area where they live 16.2. Compliance with recommendations from the Universal Periodic Review and UN Treaties 16.3. Frequency of payment of salaries within security forces 16.4. Percentage of people and businesses that paid a bribe to a public official, or were asked for a bribe by a public official, during the last 12 months 16.5. Percentage of total detainees who have been held in detention for more than 12 months while awaiting sentencing or a final disposition of their case 16.6. [Indicator on illicit financial flows] – to be developed 16.7. [Indicator on international cooperation in preventing violence and combating terrorism and crime] – to be developed 16.8. Representation of women among mediators, negotiators and technical experts in formal peace negotiations 16.9. Number of journalists and associated media personnel that are physically attacked, unlawfully detained or killed as a result of pursuing their legitimate activities		
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development *See Annex 1 (page 67) for a synthesis of how indicators track global partnership, including financing, across all goals*			
95	Domestic revenues allocated to sustainable development as percent of GNI, by sector	IMF	10
96	Official development assistance and net private grants as percent of GNI	OECD	10
97	Private net flows for sustainable development at market rates as share of high-income country GNI, by sector	OECD DAC	10

98	Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), and World Trade Organization (WTO) [other organizations to be added] on the relationship between international rules and the SDGs and the implementation of relevant SDG targets	BIS, IASB, IFRS, IMF, WIPO, WTO	2, 10
99	Share of SDG Indicators that are reported annually	UNSD, OECD World Bank	10, 11
100	Evaluative Wellbeing and Positive Mood Affect	SDSN, OECD	3
	Complementary National Indicators: 17.1. Total Official Support for Development 17.2. Country Programmable Aid 17.3. [Indicator on debt sustainability] – to be developed 17.4. Gross domestic expenditure on R&D as share of GDP 17.5. [Indicator on technology sharing and diffusion] – to be developed 17.6. [Indicator on the creation of / subscription to the Technology Bank and STI (Science, Technology and Innovation) Capacity Building Mechanism for LDCs by 2017] – to be developed 17.7. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (MDG Indicator) 17.8. Value of LDC exports as a percentage of global exports 17.9. [Indicator on investment promotion regimes for LDCs] – to be developed 17.10. Percent of official development assistance (ODA), net private grants, and official climate finance channeled through priority pooled multilateral financing mechanisms		

Table 2: Suggested SDG Indicators arranged by OWG Targets

This table complements the list of indicators summarized in Table 1 by mapping the indicators to the targets identified by the OWG. Since some indicators can help monitor more than one target, they may appear several times in the table. This repetition will also help to ensure that the SDG indicator framework is integrated, with cross-references to the social, economic, and environmental dimensions throughout, with a relatively small number of Global Monitoring Indicators and Complementary National Indicators.

OWG Target	Proposed Indicators
Goal 1. End poverty in all its forms everywhere	
1.1 by 2030, eradicate extreme poverty for all people everywhere, currently measured as people living on less than $1.25 a day	1. Proportion of population below $1.25 (PPP) per day (MDG Indicator)
	3. Multidimensional Poverty Index
	4. Percentage of eligible population covered by national social protection programs
	5. Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.
1.2 by 2030, reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions according to national definitions	2. Proportion of population living below national poverty line, differentiated by urban/rural (modified MDG Indicator)
	3. Multidimensional Poverty Index
	7. Total fertility rate
	1.1. Poverty gap ratio (MDG Indicator)
1.3 implement nationally appropriate social protection systems and measures for all, including floors, and by 2030 achieve substantial coverage of the poor and the vulnerable	4. Percentage of eligible population covered by national social protection programs
	6. Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)
1.4 by 2030 ensure that all men and women, particularly the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership, and control over land and other forms of property, inheritance, natural resources, appropriate new technology, and financial services including microfinance	5. Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.
	1.2. Percentage of population using banking services (including mobile banking)
	1.3. [Indicator on equal access to inheritance] – to be developed
1.5 by 2030 build the resilience of the poor and those in vulnerable situations, and reduce their exposure and vulnerability to climate-related extreme events and other economic, social and environmental shocks and disasters	6. Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)
	1.4. [Disaster Risk Reduction Indicator] – to be developed
1.a create sound policy frameworks, at national, regional and international levels, based on pro-poor and gender-sensitive development strategies to support accelerated investments in poverty	11.2. Existence and implementation of a national urban and human settlements policy framework
	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International

eradication actions	Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	99. Share of SDG Indicators that are reported annually
1.b ensure significant mobilization of resources from a variety of sources, including through enhanced development cooperation to provide adequate and predictable means for developing countries, in particular LDCs, to implement programs and policies to end poverty in all its dimensions	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	96. Official development assistance and net private grants as percent of GNI
	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	97. Private net flows for sustainable development at market rates as share of high-income country GNI, by sector
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture	
2.1 by 2030 end hunger and ensure access by all people, in particular the poor and people in vulnerable situations including infants, to safe, nutritious and sufficient food all year round	8. Proportion of population below minimum level of dietary energy consumption (MDG Indicator)
	9. Percentage of women of reproductive age (15-49) with anemia
	10. Prevalence of stunting and wasting in children under 5 years of age
	11. Percentage of infants under 6 months who are exclusively breast fed
	12. Percentage of women (15-49) who consume at least 5 out of 10 defined food groups
	2.1. Percentage of population with shortfalls of: iron, zinc, iodine, vitamin A, folate, vitamin B12 [and vitamin D]
	2.2. Proportion of infants 6-23 months of age who receive a minimum acceptable diet
	2.3. Percentage children born with low birth weight
2.2 by 2030 end all forms of malnutrition, including achieving by 2025 the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women, and older persons	9. Percentage of women of reproductive age (15-49) with anemia
	10. Prevalence of stunting and wasting in children under 5 years of age
	11. Percentage of infants under 6 months who are exclusively breast fed
	2.1. Percentage of population with shortfalls of: iron, zinc, iodine, vitamin A, folate, vitamin B12 [and vitamin D]
	2.2. Proportion of infants 6-23 months of age who receive a minimum acceptable diet
	2.8. Percentage of total daily energy intake from protein in adults

2.3 by 2030 double the agricultural productivity and the incomes of small-scale food producers, particularly women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	5. Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.
	6. Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)
	13. Crop yield gap (actual yield as % of potential or water-limited potential yield)
	14. Number of agricultural extension workers per 1000 farmers [or share of farmers covered by agricultural extension programs and services]
	15. Nitrogen use efficiency in food systems
	16. [Crop water productivity (tons of harvested product per unit irrigation water)] – to be developed
	82. Percentage of fish tonnage landed within Maximum Sustainable Yield (MSY)
	2.4. Cereal yield growth rate (% p.a.)
	2.5. Livestock yield gap (actual yield as % of attainable yield)
	2.6. [Phosphorus use efficiency in food systems] – to be developed
	2.9. [Access to drying, storage and processing facilities] – to be developed
	2.11. [Indicator on irrigation access gap] – to be developed
	2.12. [Farmers with nationally appropriate crop insurance (%)] – to be developed
2.4 by 2030 ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production, that help maintain ecosystems, that strengthen capacity for adaptation to climate change, extreme weather, drought, flooding and other disasters, and that progressively improve land and soil quality	6. Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)
	13. Crop yield gap (actual yield as % of potential or water-limited potential yield)
	15. Nitrogen use efficiency in food systems
	83. Annual change in forest area and land under cultivation (modified MDG Indicator)
	85. Annual change in degraded or desertified arable land (% or ha)
	2.4. Cereal yield growth rate (% p.a.)
	2.5. Livestock yield gap (actual yield as % of attainable yield)
	2.6. [Phosphorus use efficiency in food systems] – to be developed
	2.11. [Indicator on irrigation access gap] – to be developed
	2.12. [Farmers with nationally appropriate crop insurance (%)] – to be developed
	2.13. Public and private R&D expenditure on agriculture and rural development (% of GNI)
2.5 by 2020 maintain genetic diversity of seeds, cultivated plants, farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at national, regional and international levels, and ensure access to and fair and equitable sharing of benefits arising from the utilization of genetic	14. Number of agricultural extension workers per 1000 farmers [or share of farmers covered by agricultural extension programs and services]
	2.7. Share of calories from non-staple crops

resources and associated traditional knowledge as internationally agreed	2.10. [Indicator on genetic diversity in agriculture] – to be developed
	17.5. [Indicator on technology sharing and diffusion] – to be developed
2.a increase investment, including through enhanced international cooperation, in rural infrastructure, agricultural research and extension services, technology development, and plant and livestock gene banks to enhance agricultural productive capacity in developing countries, in particular in least developed countries	14. Number of agricultural extension workers per 1000 farmers [or share of farmers covered by agricultural extension programs and services]
	59. Mobile broadband subscriptions per 100 inhabitants, by urban/rural
	96. Official development assistance and net private grants as percent of GNI
	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	97. Private net flows for sustainable development at market rates as share of high-income country GNI, by sector
	2.13. Public and private R&D expenditure on agriculture and rural development (% of GNI)
2.b. correct and prevent trade restrictions and distortions in world agricultural markets including by the parallel elimination of all forms of agricultural export subsidies and all export measures with equivalent effect, in accordance with the mandate of the Doha Development Round	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	17.7. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (MDG Indicator)
	17.8. Value of LDC exports as a percentage of global exports
2.c adopt measures to ensure the proper functioning of food commodity markets and their derivatives, and facilitate timely access to market information, including on food reserves, in order to help limit extreme food price volatility	2.14. [indicator on food price volatility] – to be developed
Goal 3. Ensure healthy lives and promote well-being for all at all ages	
3.1 by 2030 reduce the global maternal mortality ratio to less than 70 per 100,000 live births	17. Maternal mortality ratio (MDG Indicator) and rate
	3.1. Percentage of births attended by skilled health personnel (MDG Indicator)
	3.2. Antenatal care coverage (at least one visit and at least four visits) (MDG Indicator)
	3.3. Post-natal care coverage (one visit) (MDG Indicator)
	3.4. Coverage of iron-folic acid supplements for pregnant women (%)
	3.29. Percentage of health facilities meeting service specific readiness requirements.

3.2 by 2030 end preventable deaths of newborns and under-5 children	11. Percentage of infants under 6 months who are exclusively breast fed
	18. Neonatal, infant, and under-5 mortality rates (modified MDG Indicator)
	19. Percent of children receiving full immunization (as recommended by national vaccination schedules)
	3.1. Percentage of births attended by skilled health personnel (MDG Indicator)
	3.2. Antenatal care coverage (at least one visit and at least four visits) (MDG Indicator)
	3.3. Post-natal care coverage (one visit) (MDG Indicator)
	3.5. Incidence rate of diarrheal disease in children under 5 years
	3.10. Percentage of children under 5 with fever who are treated with appropriate anti-malarial drugs (MDG Indicator).
3.3 by 2030 end the epidemics of AIDS, tuberculosis, malaria, and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases	19. Percent of children receiving full immunization (as recommended by national vaccination schedules)
	20. HIV incidence, treatment rate, and mortality (modified MDG Indicator)
	21. Incidence, prevalence, and death rates associated with all forms of TB (MDG Indicator)
	22. Incidence and death rates associated with malaria (MDG Indicator)
	26. [Consultations with a licensed provider in a health facility or in the community per person, per year] – to be developed
	27. [Percentage of population without effective financial protection or health care, per year] – to be developed
	3.5. Incidence rate of diarrheal disease in children under 5 years
	3.6. Percentage of 1 year-old children immunized against measles (MDG Indicator)
	3.7. Percent HIV+ pregnant women receiving PMTCT
	3.8. Condom use at last high-risk sex (MDG Indicator)
	3.9. Percentage of tuberculosis cases detected and cured under directly observed treatment short course (MDG Indicator)
	3.10. Percentage of children under 5 with fever who are treated with appropriate anti-malarial drugs (MDG Indicator).
	3.11. Percentage of people in malaria-endemic areas sleeping under insecticide-treated bed nets (modified MDG Indicator).
	3.12. Percentage of confirmed malaria cases that receive first-line antimalarial therapy according to national policy.
	3.13. Percentage of suspected malaria cases that receive a parasitological test.
	3.14. Percentage of pregnant women receiving malaria IPT (in endemic areas)
	3.15. Neglected Tropical Disease (NTD) cure rate
	3.16. Incidence and death rate associated with hepatitis
	3.34. Percentage of women and men aged 15-49 who report discriminatory attitudes towards people living with HIV
3.4 by 2030 reduce by one-third pre-mature mortality from non-communicable diseases (NCDs) through prevention and treatment, and promote	23. Probability of dying between exact ages 30 and 70 from any of cardiovascular disease, cancer, diabetes, chronic respiratory disease, [or suicide]

mental health and wellbeing	24. Percent of population overweight and obese, including children under 5
	26. [Consultations with a licensed provider in a health facility or in the community per person, per year] – to be developed
	28. Proportion of persons with a severe mental disorder (psychosis, bipolar affective disorder, or moderate-severe depression) who are using services
	30. Current use of any tobacco product (age-standardized rate)
	3.17 Percentage of women with cervical cancer screening
	3.18. Percentage with hypertension diagnosed & receiving treatment
	3.21. Waiting time for elective surgery
	3.22. Prevalence of insufficient physical activity
	3.23. Fraction of calories from saturated fat and added sugar
	3.24. Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years
	3.25. Prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruit and vegetables per day
	3.26. Percentage change in per capita [red] meat consumption relative to a 2015 baseline
	3.27. Age-standardized (to world population age distribution) prevalence of diabetes (preferably based on HbA1c), hypertension, cardiovascular disease, and chronic respiratory disease.
3.5 strengthen prevention and treatment of substance abuse, including narcotic drug abuse and harmful use of alcohol	30. Current use of any tobacco product (age-standardized rate)
	3.19. Harmful use of alcohol
3.6. by 2030 halve global deaths from road traffic accidents	25. Road traffic deaths per 100,000 population
3.7 by 2030 ensure universal access to sexual and reproductive health care services, including for family planning, information and education, and the integration of reproductive health into national strategies and programs	7. Total fertility rate
	29. Contraceptive prevalence rate (MDG Indicator)
	44. Met demand for family planning (modified MDG Indicator)
	5.4. Adolescent birth rate (MDG Indicator)
	5.5. Percentage of young people receiving comprehensive sexuality education
3.8 achieve universal health coverage (UHC), including financial risk protection, access to quality essential health care services, and access to safe, effective, quality, and affordable essential medicines and vaccines for all	19. Percent of children receiving full immunization (as recommended by national vaccination schedules)
	26. [Consultations with a licensed provider in a health facility or in the community per person, per year] – to be developed
	27. [Percentage of population without effective financial protection or health care, per year] – to be developed
	3.20. Healthy life expectancy at birth
	3.21. Waiting time for elective surgery
	3.29. Percentage of health facilities meeting service specific readiness requirements.
	3.30. Percentage of population with access to affordable essential drugs and commodities on a sustainable basis
	3.31. Percentage of new health care facilities built in compliance with building codes and standards
	3.33. Ratio of health professionals to population (MDs, nurse midwives, nurses, community health workers, EmOC caregivers)

3.9 by 2030 substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water, and soil pollution and contamination	69. Mean urban air pollution of particulate matter (PM10 and PM2.5)
	3.28. [Mortality from indoor air pollution] – to be developed
	12.3. [Indicator on chemical pollution] – to be developed
3.a strengthen implementation of the Framework Convention on Tobacco Control in all countries as appropriate	30. Current use of any tobacco product (age-standardized rate)
3.b support research and development of vaccines and medicines for the communicable and non-communicable diseases that primarily affect developing countries, provide access to affordable essential medicines and vaccines, in accordance with the Doha Declaration which affirms the right of developing countries to use to the full the provisions in the TRIPS agreement regarding flexibilities to protect public health and, in particular, provide access to medicines for all	3.30. Percentage of population with access to affordable essential drugs and commodities on a sustainable basis
	3.32. Public and private R&D expenditure on health (% GNP)
	17.5. [Indicator on technology sharing and diffusion] – to be developed
3.c increase substantially health financing and the recruitment, development and training and retention of the health workforce in developing countries, especially in LDCs and SIDS	96. Official development assistance and net private grants as percent of GNI
	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	3.32. Public and private R&D expenditure on health (% GNP)
	3.33. Ratio of health professionals to population (MDs, nurse midwives, nurses, community health workers, EmOC caregivers)
3.d strengthen the capacity of all countries, particularly developing countries, for early warning, risk reduction, and management of national and global health risks	96. Official development assistance and net private grants as percent of GNI
	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	3.32. Public and private R&D expenditure on health (% GNP)
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	
4.1 by 2030, ensure that all girls and boys complete free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes	33. Primary completion rates for girls and boys
	34. [Percentage of girls and boys who master a broad range of foundational skills, including in literacy and mathematics by the end of the primary school cycle (based on credibly established national benchmarks)] – to be developed
	35. Secondary completion rates for girls and boys
	36. [Percentage of girls and boys who achieve proficiency across a broad range of learning outcomes, including in reading and in mathematics by end of lower secondary schooling cycle (based on credibly established national benchmarks)] – to be developed
	4.3. Number of children out of school
4.2 by 2030 ensure that all girls and boys have access to quality early childhood development, care and pre-primary education so that they are ready for primary education	31. Percentage of children (36-59 months) receiving at least one year of a quality pre-primary education program
	32. Early Child Development Index (ECDI)
	4.2. Percentage of children under 5 experiencing responsive,

	stimulating parenting in safe environments
4.3 by 2030 ensure equal access for all women and men to affordable quality technical, vocational and tertiary education, including university	37. Tertiary enrollment rates for women and men
	4.4. [Percentage of adolescents (15-19 years) with access to school-to-work programs] – to be developed
	4.6. [Percentage of young adults (18-24 years) with access to a learning program] – to be developed
4.4 by 2030, increase by x% the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship	35. Secondary completion rates for girls and boys
	36. [Percentage of girls and boys who achieve proficiency across a broad range of learning outcomes, including in reading and in mathematics by end of lower secondary schooling cycle (based on credibly established national benchmarks)] – to be developed
	37. Tertiary enrollment rates for women and men
	4.5. Literacy rate of 15-24 years olds, women and men (MDG indicator)
	4.8. Pupil to computer ratio in primary and secondary education
4.5 by 2030, eliminate gender disparities in education and ensure equal access to all levels of education and vocational training for the vulnerable, including persons with disabilities, indigenous peoples, and children in vulnerable situations	31. Percentage of children (36-59 months) receiving at least one year of a quality pre-primary education program
	33. Primary completion rates for girls and boys
	35. Secondary completion rates for girls and boys
	37. Tertiary enrollment rates for women and men
	4.3. Number of children out of school
	4.6. [Percentage of young adults (18-24 years) with access to a learning program] – to be developed
	4.11. Presence of legal frameworks that guarantee the right to education for all children for early childhood and basic education, and that guarantee a minimum age of entry to employment not below the years of basic education
4.6 by 2030 ensure that all youth and at least x% of adults, both men and women, achieve literacy and numeracy	33. Primary completion rates for girls and boys
	34. [Percentage of girls and boys who master a broad range of foundational skills, including in literacy and mathematics by the end of the primary school cycle (based on credibly established national benchmarks)] – to be developed
	35. Secondary completion rates for girls and boys
	4.5. Literacy rate of 15-24 years olds, women and men (MDG indicator)
4.7 by 2030 ensure all learners acquire knowledge and skills needed to promote sustainable development, including among others through education for sustainable development and sustainable lifestyles, human rights, gender equality, promotion of a culture of peace and non-violence, global citizenship, and appreciation of cultural diversity and of culture's contribution to sustainable development	36. [Percentage of girls and boys who achieve proficiency across a broad range of learning outcomes, including in reading and in mathematics by end of lower secondary schooling cycle (based on credibly established national benchmarks)] – to be developed
	4.1. [Percentage of girls and boys who acquire skills and values needed for global citizenship and sustainable development (national benchmarks to be developed) by the end of lower secondary] – to be developed
4.a build and upgrade education facilities that are child, disability and gender sensitive and provide safe, non-violent, inclusive and effective learning environments for all	4.7. [Indicator on share of education facilities that provide an effective learning environment] – to be developed
	6.4. Percentage of pupils enrolled in primary schools and secondary schools providing basic drinking water, adequate sanitation, and adequate hygiene services.

4.b by 2020 expand by x% globally the number of scholarships for developing countries in particular LDCs, SIDS and African countries to enroll in higher education, including vocational training, ICT, technical, engineering and scientific programs in developed countries and other developing countries	4.9. [Indicator on scholarships for students from developing countries] – to be developed
4.c by 2030 increase by x% the supply of qualified teachers, including through international cooperation for teacher training in developing countries, especially LDCs and SIDS	96. Official development assistance and net private grants as percent of GNI
	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	4.10. [Indicator on supply of qualified teachers] – to be developed
Goal 5. Achieve gender equality and empower all women and girls	
5.1 end all forms of discrimination against women and girls everywhere	5. Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.
	27. [Percentage of population without effective financial protection or health care, per year] – to be developed
	33. Primary completion rates for girls and boys
	35. Secondary completion rates for girls and boys
	43. Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)
	1.3. [Indicator on equal access to inheritance] – to be developed
	5.1. Gender gap in wages, by sector of economic activity
	88. Violent injuries and deaths per 100,000 population
5.2 eliminate all forms of violence against all women and girls in public and private spheres, including trafficking and sexual and other types of exploitation	38. Prevalence of girls and women 15-49 who have experienced physical or sexual violence [by an intimate partner] in the last 12 months
	39. Percentage of referred cases of sexual and gender-based violence against women and children that are investigated and sentenced
	88. Violent injuries and deaths per 100,000 population
	16.1. Percentage of women and men who report feeling safe walking alone at night in the city or area where they live
5.3 eliminate all harmful practices, such as child, early and forced marriage and female genital mutilations	40. Percentage of women aged 20-24 who were married or in a union before age 18
	41. Percentage of girls and women aged 15-49 years who have undergone FGM/C
5.4 recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies, and the promotion of shared responsibility within the household and the family as nationally appropriate	4. Percentage of eligible population covered by national social protection programs
	42. Average number of hours spent on paid and unpaid work combined (total work burden), by sex
5.5 ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic, and public	43. Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)

life	5.1. Gender gap in wages, by sector of economic activity
	5.2. Share of women on corporate boards of national / multi-national corporations (MNCs)
	5.3. Percentage of women without incomes of their own
	16.8. Representation of women among mediators, negotiators and technical experts in formal peace negotiations
5.6 ensure universal access to sexual and reproductive health and reproductive rights as agreed in accordance with the Programme of Action of the ICPD and the Beijing Platform for Action and the outcome documents of their review conferences	29. Contraceptive prevalence rate (MDG Indicator)
	41. Percentage of girls and women aged 15-49 years who have undergone FGM/C
	44. Met demand for family planning (modified MDG Indicator)
	5.5. Percentage of young people receiving comprehensive sexuality education
5.a undertake reforms to give women equal rights to economic resources, as well as access to ownership and control over land and other forms of property, financial services, inheritance, and natural resources in accordance with national laws	5. Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.
	1.2. Percentage of population using banking services (including mobile banking)
	1.3. [Indicator on equal access to inheritance] – to be developed
5.b enhance the use of enabling technologies, in particular ICT, to promote women's empowerment	59. Mobile broadband subscriptions per 100 inhabitants, by urban/rural
5.c adopt and strengthen sound policies and enforceable legislation for the promotion of gender equality and the empowerment of all women and girls at all levels	43. Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)
	5.1. Gender gap in wages, by sector of economic activity
	5.2. Share of women on corporate boards of national / multi-national corporations (MNCs)
Goal 6. Ensure availability and sustainable management of water and sanitation for all	
6.1. by 2030, achieve universal and equitable access to safe and affordable drinking water for all	45. Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)
	47. Percentage of wastewater flows treated to national standards [and reused] – to be developed
	49. Proportion of total water resources used (MDG Indicator)
	6.2. Percentage of population with basic hand washing facilities with soap and water at home
	6.4. Percentage of pupils enrolled in primary schools and secondary schools providing basic drinking water, adequate sanitation, and adequate hygiene services.
	6.5. Percentage of beneficiaries using hospitals, health centers and clinics providing basic drinking water, adequate sanitation, and adequate hygiene
6.2. by 2030, achieve access to adequate and equitable sanitation and hygiene for all, and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations	46. Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)
	6.1. Percentage of population practicing open defecation

	6.2. Percentage of population with basic hand washing facilities with soap and water at home
	6.3. Proportion of the population connected to collective sewers or with on-site storage of all domestic wastewaters
	6.4. Percentage of pupils enrolled in primary schools and secondary schools providing basic drinking water, adequate sanitation, and adequate hygiene services.
	6.5. Percentage of beneficiaries using hospitals, health centers and clinics providing basic drinking water, adequate sanitation, and adequate hygiene
6.3 by 2030, improve water quality by reducing pollution, eliminating dumping and minimizing release of hazardous chemicals and materials, halving the proportion of untreated wastewater, and increasing recycling and safe reuse by x% globally	47. Percentage of wastewater flows treated to national standards [and reused] – to be developed
	48. [Indicator on water resource management] – to be developed
6.4 by 2030, substantially increase water-use efficiency across all sectors and ensure sustainable withdrawals and supply of freshwater to address water scarcity, and substantially reduce the number of people suffering from water scarcity	16. [Crop water productivity (tons of harvested product per unit irrigation water)] – to be developed
	49. Proportion of total water resources used (MDG Indicator)
	6.6. Proportion of the flows of treated municipal wastewater that are directly and safely reused
6.5 by 2030 implement integrated water resources management at all levels, including through transboundary cooperation as appropriate	48. [Indicator on water resource management] – to be developed
	49. Proportion of total water resources used (MDG Indicator)
	6.7. [Reporting of international river shed authorities on transboundary river-shed management] – to be developed
6.6 by 2020 protect and restore water-related ecosystems, including mountains, forests, wetlands, rivers, aquifers and lakes	48. [Indicator on water resource management] – to be developed
	49. Proportion of total water resources used (MDG Indicator)
	47. Percentage of wastewater flows treated to national standards [and reused] – to be developed
	81. Share of coastal and marine areas that are protected
	84. Area of forest under sustainable forest management as a percent of forest area
	14.12 Area of mangrove deforestation (hectares and as % of total mangrove area)
6.a by 2030, expand international cooperation and capacity-building support to developing countries in water and sanitation related activities and programs, including water harvesting, desalination, water efficiency, wastewater treatment, recycling and reuse technologies	6.8. [Indicator on international cooperation and capacity building in water and sanitation-related activities] – to be developed
6.b support and strengthen the participation of local communities for improving water and sanitation management	6.9. [Indicator on participation of local communities for improving water and sanitation management] – to be developed
Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all	

7.1 by 2030 ensure universal access to affordable, reliable, and modern energy services	50. Share of the population using modern cooking solutions, by urban/rural
	51. Share of the population using reliable electricity, by urban/rural
	7.1. Primary energy by type
7.2 increase substantially the share of renewable energy in the global energy mix by 2030	52. Implicit incentives for low-carbon energy in the electricity sector (measured as US$/MWh or US$ per ton avoided CO_2)
	7.3. Share of energy from renewables
7.3 double the global rate of improvement in energy efficiency by 2030	53. Rate of primary energy intensity improvement
7.a by 2030 enhance international cooperation to facilitate access to clean energy research and technologies, including renewable energy, energy efficiency, and advanced and cleaner fossil fuel technologies, and promote investment in energy infrastructure and clean energy technologies	96. Official development assistance and net private grants as percent of GNI
	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	97. Private net flows for sustainable development at market rates as share of high-income country GNI, by sector
	7.2. Fossil fuel subsidies ($ or %GNI)
7.b by 2030 expand infrastructure and upgrade technology for supplying modern and sustainable energy services for all in developing countries, particularly LDCs and SIDS	51. Share of the population using reliable electricity, by urban/rural
	52. Implicit incentives for low-carbon energy in the electricity sector (measured as US$/MWh or US$ per ton avoided CO_2)
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all	
8.1 sustain per capita economic growth in accordance with national circumstances, and in particular at least 7% per annum GDP growth in the least-developed countries	54. GNI per capita (PPP, current US$ Atlas method)
	8.1. Growth rate of GDP per person employed (MDG Indicator)
	8.2. Working poverty rate measured at $2 PPP per capita per day
8.2 achieve higher levels of productivity of economies through diversification, technological upgrading and innovation, including through a focus on high value added and labor-intensive sectors	59. Mobile broadband subscriptions per 100 inhabitants, by urban/rural
	60. Index on ICT maturity
	61. Manufacturing value added (MVA) as percent of GDP
	63. Personnel in R&D (per million inhabitants)
	9.2. Employment in industry (% of total employment)
8.3 promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage formalization and growth of micro-, small- and medium-sized enterprises including through access to financial services	56. Youth employment rate, by formal and informal sector
	57. Ratification and implementation of fundamental ILO labor standards and compliance in law and practice
	1.2. Percentage of population using banking services (including mobile banking)
	8.3. [Indicator of decent work] – to be developed
	8.4. Household income, including in-kind services (PPP, current US$)
8.4 improve progressively through 2030 global resource efficiency in consumption and production, and endeavor to decouple economic growth from environmental degradation in accordance with the 10-year framework of programs on sustainable consumption and production with developed	15. Nitrogen use efficiency in food systems
	16. [Crop water productivity (tons of harvested product per unit irrigation water)] – to be developed
	49. Proportion of total water resources used (MDG Indicator)
	52. Implicit incentives for low-carbon energy in the electricity sector (measured as US$/MWh or US$ per ton avoided CO_2)

countries taking the lead	55. Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts
	74. Consumption of ozone-depleting substances (MDG Indicator)
	75. Aerosol optical depth (AOD)
	79. Net GHG emissions in the Agriculture, Forest and other Land Use (AFOLU) sector (tCO_2e)
	8.9. [Indicator on implementation of 10-year framework of programs on sustainable consumption and production] – to be developed
8.5 by 2030 achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value	56. Youth employment rate, by formal and informal sector
	57. Ratification and implementation of fundamental ILO labor standards and compliance in law and practice
	5.1. Gender gap in wages, by sector of economic activity
	8.5. Employment to population ratio (EPR) by gender and age group (15–64)
	8.6. Share of informal employment in total employment
	8.7. Percentage of own-account and contributing family workers in total employment
8.6 by 2020 substantially reduce the proportion of youth not in employment, education or training	35. Secondary completion rates for girls and boys
	37. Tertiary enrollment rates for women and men
	56. Youth employment rate, by formal and informal sector
	8.8. Percentage of young people not in education, employment or training (NEET)
8.7 take immediate and effective measures to secure the prohibition and elimination of the worst forms of child labor, eradicate forced labor, and by 2025 end child labor in all its forms including recruitment and use of child soldiers	57. Ratification and implementation of fundamental ILO labor standards and compliance in law and practice
	16.2. Compliance with recommendations from the Universal Periodic Review and UN Treaties
8.8 protect labor rights and promote safe and secure working environments of all workers, including migrant workers, particularly women migrants, and those in precarious employment	57. Ratification and implementation of fundamental ILO labor standards and compliance in law and practice
	8.3. [Indicator of decent work] – to be developed
	16.2. Compliance with recommendations from the Universal Periodic Review and UN Treaties
8.9 by 2030 devise and implement policies to promote sustainable tourism which creates jobs, promotes local culture and products	12.5. [Indicator on policies for sustainable tourism] – to be developed
8.10 Strengthen the capacity of domestic financial institutions to encourage and to expand access to banking, insurance and financial services for all	1.2. Percentage of population using banking services (including mobile banking)
8.a increase Aid for Trade support for developing countries, particularly LDCs, including through the Enhanced Integrated Framework for LDCs	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	17.7. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (MDG Indicator)

	17.8. Value of LDC exports as a percentage of global exports
8.b by 2020 develop and operationalize a global strategy for youth employment and implement the ILO Global Jobs Pact	56. Youth employment rate, by formal and informal sector
	57. Ratification and implementation of fundamental ILO labor standards and compliance in law and practice
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	
9.1 develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	45. Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)
	46. Percentage of population using basic sanitation services, by urban/rural (modified MDG Indicator)
	50. Share of the population using modern cooking solutions, by urban/rural
	51. Share of the population using reliable electricity, by urban/rural
	58. Access to all-weather road (% access within [x] km distance to road)
	59. Mobile broadband subscriptions per 100 inhabitants, by urban/rural
	60. Index on ICT maturity
	9.1. Percentage of households with Internet, by type of service by urban/rural areas
9.2 promote inclusive and sustainable industrialization, and by 2030 raise significantly industry's share of employment and GDP in line with national circumstances, and double its share in LDCs	61. Manufacturing value added (MVA) as percent of GDP
	9.2. Employment in industry (% of total employment)
9.3 increase the access of small-scale industrial and other enterprises, particularly in developing countries, to financial services including affordable credit and their integration into value chains and markets	1.2. Percentage of population using banking services (including mobile banking)
9.4 by 2030 upgrade infrastructure and retrofit industries to make them sustainable, with increased resource use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, all countries taking action in accordance with their respective capabilities	47. Percentage of wastewater flows treated to national standards [and reused] – to be developed
	60. Index on ICT maturity
	62. Total energy and industry-related GHG emissions by gas and sector, expressed as production and demand-based emissions (tCO_2e).
	69. Mean urban air pollution of particulate matter (PM10 and PM2.5)
	71. Percentage of urban solid waste regularly collected and well managed
9.5 enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, particularly developing countries, including by 2030 encouraging innovation and increasing the number of R&D workers per one million people by x% and public and private R&D spending	63. Personnel in R&D (per million inhabitants)
	17.4. Gross domestic expenditure on R&D as share of GDP
	17.5. [Indicator on technology sharing and diffusion] – to be developed

9.a facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, LDCs, LLDCs and SIDS	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	96. Official development assistance and net private grants as percent of GNI
	17.5. [Indicator on technology sharing and diffusion] – to be developed
	17.6. [Indicator on the creation of / subscription to the Technology Bank and STI (Science, Technology and Innovation) Capacity Building Mechanism for LDCs by 2017] – to be developed
9.b support domestic technology development, research and innovation in developing countries including by ensuring a conducive policy environment for inter alia industrial diversification and value addition to commodities	17.4. Gross domestic expenditure on R&D as share of GDP
	17.6. [Indicator on the creation of / subscription to the Technology Bank and STI (Science, Technology and Innovation) Capacity Building Mechanism for LDCs by 2017] – to be developed
9.c significantly increase access to ICT and strive to provide universal and affordable access to internet in LDCs by 2020	59. Mobile broadband subscriptions per 100 inhabitants, by urban/rural
	60. Index on ICT maturity
	9.1. Percentage of households with Internet, by type of service by urban/rural areas
Goal 10. Reduce inequality within and among countries	
10.1 by 2030 progressively achieve and sustain income growth of the bottom 40% of the population at a rate higher than the national average	64. [Indicator on inequality at top end of income distribution: GNI share of richest 10% or Palma Ratio]
	65. Percentage of households with incomes below 50% of median income ("relative poverty")
	10.1. Gini Coefficient
10.2. by 2030 empower and promote the social, economic and political inclusion of all irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status	5. Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.
	43. Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)
	57. Ratification and implementation of fundamental ILO labor standards and compliance in law and practice
	16.2. Compliance with recommendations from the Universal Periodic Review and UN Treaties
10.3 ensure equal opportunity and reduce inequalities of outcome, including through eliminating discriminatory laws, policies and practices and promoting appropriate legislation, policies and actions in this regard	43. Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)
	57. Ratification and implementation of fundamental ILO labor standards and compliance in law and practice
	10.2. Income/wage persistence (intergenerational socioeconomic mobility)

10.4 adopt policies especially fiscal, wage, and social protection policies and progressively achieve greater equality	4. Percentage of eligible population covered by national social protection programs
	57. Ratification and implementation of fundamental ILO labor standards and compliance in law and practice
	5.1. Gender gap in wages, by sector of economic activity
10.5 improve regulation and monitoring of global financial markets and institutions and strengthen implementation of such regulations	76. [Share of companies valued at more than [$1 billion] that publish integrated monitoring] – to be developed
	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	97. Private net flows for sustainable development at market rates as share of high-income country GNI, by sector
	10.1 Indicator on share of LDCs / LIC representatives on boards of IMF / WB (and other institutions of governance)
10.6. ensure enhanced representation and voice of developing countries in decision making in global international economic and financial institutions in order to deliver more effective, credible, accountable and legitimate institutions	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	10.5. Indicator on share of LDCs / LIC representatives on boards of IMF / WB (and other institutions of governance)
10.7 facilitate orderly, safe, and responsible migration and mobility of people, including through implementation of planned and well-managed migration policies	89. Number of refugees
	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	10.3. Human Mobility Governance Index
10.a implement the principle of special and differential treatment for developing countries, in particular least developed countries, in accordance with WTO agreements	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	17.7. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (MDG Indicator)
	17.8. Value of LDC exports as a percentage of global exports
10.b encourage ODA and financial flows, including foreign direct investment, to states where the need	96. Official development assistance and net private grants as percent of GNI

is greatest, in particular LDCs, African countries, SIDS, and LLDCs, in accordance with their national plans and programs	97. Private net flows for sustainable development at market rates as share of high-income country GNI, by sector
	10.4. Net ODA to LDCs as percentage of high-income countries' GNI (modified from MDG Indicator)
	17.1. Total Official Support for Development
	17.2. Country Programmable Aid
10.c by 2030, reduce to less than 3% the transaction costs of migrant remittances and eliminate remittance corridors with costs higher than 5%	10.6. [Remittance transfer costs] – to be developed

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable	
11.1 by 2030, ensure access for all to adequate, safe and affordable housing and basic services, and upgrade slums	4. Percentage of eligible population covered by national social protection programs
	26. [Consultations with a licensed provider in a health facility or the community per person, per year] – to be developed
	45. Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)
	46. Percentage of population using basic sanitation services, by urban/rural (modified MDG Indicator)
	50. Share of the population using modern cooking solutions, by urban/rural
	51. Share of the population using reliable electricity, by urban/rural
	66. Percentage of urban population living in slums or informal settlements (MDG Indicator)
11.2 by 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	25. Road traffic deaths per 100,000 population
	58. Access to all-weather road (% access within [x] km distance to road)
	67. Percentage of people within 0.5km of public transit running at least every 20 minutes
11.3 by 2030 enhance inclusive and sustainable urbanization and capacities for participatory, integrated and sustainable human settlement planning and management in all countries	68. [Ratio of land consumption rate to population growth rate, at comparable scale] – to be developed
	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	11.1. Number of street intersections per square kilometer
	11.2. Existence and implementation of a national urban and settlements policy framework
11.4 strengthen efforts to protect and safeguard the world's cultural and natural heritage	11.3. Percentage of cities with more than 100,000 inhabitants that are implementing risk reduction and resilience strategies informed by international frameworks (such as forthcoming Hyogo-2 framework)
	86. Red List Index
	87. Protected areas overlay with biodiversity
11.5 by 2030 significantly reduce the number of deaths and the number of affected people and decrease by y% the economic losses relative to GDP caused by disasters, including water-related disasters, with the focus on protecting the poor and people in vulnerable situations	6. Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)
	11.3. Percentage of cities with more than 100,000 inhabitants that are implementing risk reduction and resilience strategies informed by accepted international frameworks (such as forthcoming Hyogo-2 Framework)

11.6 by 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality, municipal and other waste management	47. Percentage of wastewater flows treated to national standards [and reused] – to be developed
	68. [Ratio of land consumption rate to population growth rate, at comparable scale] – to be developed
	69. Mean urban air pollution of particulate matter (PM10 and PM2.5)
	71. Percentage of urban solid waste regularly collected and well managed
11.7 by 2030, provide universal access to safe, inclusive and accessible, green and public spaces, particularly for women and children, older persons and persons with disabilities	68. [Ratio of land consumption rate to population growth rate, at comparable scale] – to be developed
	70. Area of public space as a proportion of total city space
	11.1. Number of street intersections per square kilometer
	11.2. Existence and implementation of a national urban and settlements policy framework
	11.6. Percentage of consumption of food and raw materials within urban areas that are produced and delivered in/from rural areas within the country
11.a support positive economic, social and environmental links between urban, peri-urban and rural areas by strengthening national and regional development planning	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	11.2. Existence and implementation of a national urban and settlements policy framework
	11.6. Percentage of consumption of food and raw materials within urban areas that are produced and delivered in/from rural areas within the country
11.b by 2020, increase by x% the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change, resilience to disasters, develop and implement in line with the forthcoming Hyogo Framework holistic disaster risk management at all levels	11.3. Percentage of cities with more than 100,000 inhabitants that are implementing risk reduction and resilience strategies informed by international frameworks (such as forthcoming Hyogo-2 framework)
11.c support least developed countries, including through financial and technical assistance, for sustainable and resilient buildings utilizing local materials	11.4. Presence of urban building codes stipulating either the use of local materials and/or new energy efficient technologies or with incentives for the same.
Goal 12. Ensure sustainable consumption and production patterns	
12.1 implement the 10-Year Framework of Programs on sustainable consumption and production (10YFP), all countries taking action, with developed countries taking the lead, taking into account the development and capabilities of developing countries	55. Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts
	12.5. [Indicator on policies for sustainable tourism] – to be developed
12.2 by 2030 achieve sustainable management and efficient use of natural resources	49. Proportion of total water resources used (MDG Indicator)
	55. Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts
	72. Disclosure of Natural Resource Rights Holdings

	91. Revenues, expenditures, and financing of all central government entities are presented on a gross basis in public budget documentation and authorized by the legislature
	12.1. [Strategic environmental and social impact assessments required] – to be developed
	12.2. [Legislative branch oversight role regarding resource-based contracts and licenses] – to be developed
12.3 by 2030 halve per capita global food waste at the retail and consumer level, and reduce food losses along production and supply chains including post-harvest losses	73. Global Food Loss Index [or other indicator to be developed to track the share of food lost or wasted in the value chain after harvest]
	2.9. [Access to drying, storage and processing facilities] – to be developed
12.4 by 2020 achieve environmentally sound management of chemicals and all wastes throughout their life cycle in accordance with agreed international frameworks and significantly reduce their release to air, water and soil to minimize their adverse impacts on human health and the environment	15. Nitrogen use efficiency in food systems
	55. Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts
	69. Mean urban air pollution of particulate matter (PM10 and PM2.5)
	74. Consumption of ozone-depleting substances (MDG Indicator)
	75. Aerosol optical depth (AOD)
	12.3. [Indicator on chemical pollution] – to be developed
12.5 by 2030, substantially reduce waste generation through prevention, reduction, recycling, and reuse	47. Percentage of wastewater flows treated to national standards [and reused] – to be developed
	71. Percentage of urban solid waste regularly collected and well managed
	73. Global Food Loss Index [or other indicator to be developed to track the share of food lost or wasted in the value chain after harvest]
12.6 encourage companies, especially large and trans-national companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle	76. [Share of companies valued at more than [$1 billion] that publish integrated monitoring] – to be developed
	12.1. [Strategic environmental and social impact assessments required] – to be developed
12.7 promote public procurement practices that are sustainable in accordance with national policies and priorities	8.9. [Indicator on implementation of 10-year framework of programs on sustainable consumption and production] – to be developed
12.8 by 2030 ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature	4.1. [Percentage of girls and boys who acquire skills and values needed for global citizenship and sustainable development (national benchmarks to be developed) by the end of lower secondary] – to be developed
12.a support developing countries to strengthen their scientific and technological capacities to move towards more sustainable patterns of consumption and production	63. Personnel in R&D (per million inhabitants)
	17.6. [Indicator on the creation of / subscription to the Technology Bank and STI (Science, Technology and Innovation) Capacity Building Mechanism for LDCs by 2017] – to be developed
	17.5. [Indicator on technology sharing and diffusion] – to be developed
12.b develop and implement tools to monitor sustainable development impacts for sustainable tourism which creates jobs, promotes local culture and products	12.5. [Indicator on policies for sustainable tourism] – to be developed

12.c rationalize inefficient fossil fuel subsidies that encourage wasteful consumption by removing market distortions, in accordance with national circumstances, including by restructuring taxation and phasing out those harmful subsidies, where they exist, to reflect their environmental impacts, taking fully into account the specific needs and conditions of developing countries and minimizing the possible adverse impacts on their development in a manner that protects the poor and the affected communities	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	7.2. Fossil fuel subsidies ($ or %GNI)
Goal 13. Take urgent action to combat climate change and its impacts*	
13.1 strengthen resilience and adaptive capacity to climate related hazards and natural disasters in all countries	6. Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)
	11.4. Presence of urban building codes stipulating either the use of local materials and/or new energy efficient technologies or with incentives for the same.
	13.1. [Climate Change Action Index] – to be developed
13.2 integrate climate change measures into national policies, strategies, and planning	52. Implicit incentives for low-carbon energy in the electricity sector (measured as US$/MWh or US$ per ton avoided CO_2)
	53. Rate of primary energy intensity improvement
	62. Total energy and industry-related GHG emissions by gas and sector, expressed as production and demand-based emissions (tCO_2e)
	77. Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.
	79. Net GHG emissions in the Agriculture, Forest and other Land Use (AFOLU) sector (tCO_2e)
	80. Official climate financing from developed countries that is incremental to ODA (in US$)
	13.2. GHG emissions intensity of areas under forest management ($GtCO_2e$ / ha)
13.3 improve education, awareness raising and human and institutional capacity on climate change mitigation, adaptation, impact reduction, and early warning	77. Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.
	80. Official climate financing from developed countries that is incremental to ODA (in US$)
13.a implement the commitment undertaken by developed country Parties to the UNFCCC to a goal of mobilizing jointly USD100 billion annually by 2020 from all sources to address the needs of developing countries in the context of meaningful mitigation actions and transparency on implementation and fully operationalize the Green Climate Fund through its capitalization as soon as possible	80. Official climate financing from developed countries that is incremental to ODA (in US$)

13.b Promote mechanisms for raising capacities for effective climate change related planning and management, in LDCs, including focusing on women, youth, local and marginalized communities	77. Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development	
14.1 by 2025, prevent and significantly reduce marine pollution of all kinds, particularly from land-based activities, including marine debris and nutrient pollution	15. Nitrogen use efficiency in food systems
	81. Share of coastal and marine areas that are protected
	6.3. Proportion of the population connected to collective sewers or with on-site storage of all domestic wastewaters
	6.6. Proportion of the flows of treated municipal wastewater that are directly and safely reused
	14.1. Eutrophication of major estuaries
14.2 by 2020, sustainably manage, and protect marine and coastal ecosystems to avoid significant adverse impacts, including by strengthening their resilience and take action for their restoration, to achieve healthy and productive oceans	81. Share of coastal and marine areas that are protected
	87. Protected areas overlay with biodiversity
	14.3. [Indicator on the implementation of spatial planning strategies for coastal and marine areas]– to be developed
	14.4. Area of coral reef ecosystems and percentage live cover
	14.12 Area of mangrove deforestation (hectares and as % of total mangrove area)
14.3 minimize and address the impacts of ocean acidification, including through enhanced scientific cooperation at all levels	77. Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.
	78. CO_2 intensity of new power generation capacity installed (gCO_2 per kWh), and of new cars (gCO_2/pkm) and trucks (gCO_2/tkm)
	79. Net GHG emissions in the Agriculture, Forest and other Land Use (AFOLU) sector (tCO_2e)
	13.1. [Climate Change Action Index] – to be developed
	14.2. Ocean acidity (measured as surface PH)
14.4 by 2020, effectively regulate harvesting, and end overfishing, illegal, unreported and unregulated (IUU) fishing and destructive fishing practices and implement science-based management plans, to restore fish stocks in the shortest time feasible at least to levels that can produce maximum sustainable yield as determined by their biological characteristics	82. Percentage of fish tonnage landed within Maximum Sustainable Yield (MSY)
	14.5. Proportion of fish stocks within safe biological limits (MDG Indicator): Percentage of fisheries with a sustainable certification
	14.7. Does flag state require International Maritime Organization (IMO) numbers and transponders for all fishing vessels more than 24 meters or 100 tons
	14.8. Has Regional Fisheries Management Organizations (RFMO) established satellite-monitoring program?
14.5 by 2020, conserve at least 10 per cent of coastal	81. Share of coastal and marine areas that are protected

and marine areas, consistent with national and international law and based on best available scientific information	14.3. [Indicator on the implementation of spatial planning strategies for coastal and marine areas]– to be developed
14.6 by 2020, prohibit certain forms of fisheries subsidies which contribute to overcapacity and overfishing, and eliminate subsidies that contribute to IUU fishing, and refrain from introducing new such subsidies, recognizing that appropriate and effective special and differential treatment for developing and least developed countries should be an integral part of the WTO fisheries subsidies negotiation	82. Percentage of fish tonnage landed within Maximum Sustainable Yield (MSY)
	14.5. Proportion of fish stocks within safe biological limits (MDG Indicator)
	14.6. Percentage of fisheries with sustainable certification
14.7 by 2030 increase the economic benefits to SIDS and LDCs from the sustainable use of marine resources, including through sustainable management of fisheries, aquaculture and tourism	82. Percentage of fish tonnage landed within Maximum Sustainable Yield (MSY)
	14.6. Percentage of fisheries with sustainable certification
	14.7. Does flag state require International Maritime Organization (IMO) numbers and transponders for all fishing vessels more than 24 meters or 100 tons
	14.8. Has Regional Fisheries Management Organizations (RFMO) established satellite-monitoring program?
	14.9. [Use of destructive fishing techniques] - Indicator to be developed
	14.10. [Indicator on access to marine resources for small-scale artisanal fishers] – to be developed
	14.12 Area of mangrove deforestation (hectares and as % of total mangrove area)
14.a increase scientific knowledge, develop research capacities and transfer marine technology taking into account the Intergovernmental Oceanographic Commission Criteria and Guidelines on the Transfer of Marine Technology, in order to improve ocean health and to enhance the contribution of marine biodiversity to the development of developing countries, in particular SIDS and LDCs	63. Personnel in R&D (per million inhabitants)
	14.9. [Use of destructive fishing techniques] - Indicator to be developed
	14.11. [Indicator on transferring marine technology] – to be developed
14.b provide access of small-scale artisanal fishers to marine resources and markets	14.10. [Indicator on access to marine resources for small-scale artisanal fishers] – to be developed
	14.9. [Use of destructive fishing techniques] - Indicator to be developed
14.c ensure the full implementation of international law, as reflected in UNCLOS for states parties to it, including, where applicable, existing regional and international regimes for the conservation and sustainable use of oceans and their resources by their parties	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss	
15.1 by 2020 ensure conservation , restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements	49. Proportion of total water resources used (MDG Indicator)
	83. Annual change in forest area and land under cultivation (modified MDG Indicator)
	84. Area of forest under sustainable forest management as a percent of forest area
15.2 by 2020, promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests, and increase afforestation and reforestation by x% globally	84. Area of forest under sustainable forest management as a percent of forest area
	85. Annual change in degraded or desertified arable land (% or ha)
	15.1. Improved tenure security and governance of forests
15.3 by 2020, combat desertification, and restore degraded land and soil, including land affected by desertification, drought and floods, and strive to achieve a land-degradation neutral world	85. Annual change in degraded or desertified arable land (% or ha)
15.4 by 2030 ensure the conservation of mountain ecosystems, including their biodiversity, to enhance their capacity to provide benefits which are essential for sustainable development	15.2. [Indicator on the conservation of mountain ecosystems] – to be developed
	15.9 Living Planet Index
15.5 take urgent and significant action to reduce degradation of natural habitat, halt the loss of biodiversity, and by 2020 protect and prevent the extinction of threatened species	86. Red List Index
	87. Protected areas overlay with biodiversity
	15.9 Living Planet Index
15.6 ensure fair and equitable sharing of the benefits arising from the utilization of genetic resources, and promote appropriate access to genetic resources	15.4. [Indicator on access to genetic resources] – to be developed
15.7 take urgent action to end poaching and trafficking of protected species of flora and fauna, and address both demand and supply of illegal wildlife products	86. Red List Index
	15.8. [Indicator on global support to combat poaching and trafficking of protected species] – to be developed
15.8 by 2020 introduce measures to prevent the introduction and significantly reduce the impact of invasive alien species on land and water ecosystems, and control or eradicate the priority species	15.5. Abundance of invasive alien species
15.9 by 2020, integrate ecosystems and biodiversity values into national and local planning, development processes and poverty reduction strategies, and	55. Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts
	15.3. Vitality Index of Traditional Environmental Knowledge

accounts	
15.a mobilize and significantly increase from all sources financial resources to conserve and sustainably use biodiversity and ecosystems	96. Official development assistance and net private grants as percent of GNI
	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	97. Private net flows for sustainable development at market rates as share of high-income country GNI, by sector
	15.6. [Indicator on financial resources for biodiversity and ecosystems] – to be developed
15.b mobilize significantly resources from all sources and at all levels to finance sustainable forest management, and provide adequate incentives to developing countries to advance sustainable forest management, including for conservation and reforestation	96. Official development assistance and net private grants as percent of GNI
	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	97. Private net flows for sustainable development at market rates as share of high-income country GNI, by sector
	15.7. [Indicator on financial resources for sustainable forest management] – to be developed
15.c enhance global support to efforts to combat poaching and trafficking of protected species, including by increasing the capacity of local communities to pursue sustainable livelihood opportunities	86. Red List Index
	87. Protected areas overlay with biodiversity
	15.8. [Indicator on global support to combat poaching and trafficking of protected species] – to be developed
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels	
16.1 significantly reduce all forms of violence and related death rates everywhere	38. Prevalence of girls and women 15-49 who have experienced physical or sexual violence [by an intimate partner] in the last 12 months
	88. Violent injuries and deaths per 100,000 population
	89. Number of refugees
16.2 end abuse, exploitation, trafficking and all forms of violence and torture against children	57. Ratification and implementation of fundamental ILO labor standards and compliance in law and practice
	88. Violent injuries and deaths per 100,000 population
	4.11. Presence of legal frameworks that guarantee the right to education for all children for early childhood and basic education, and that guarantee a minimum age of entry to employment not below the years of basic education
	16.2. Compliance with recommendations from the Universal Periodic Review and UN Treaties
16.3 promote the rule of law at the national and international levels, and ensure equal access to justice for all	39. Percentage of referred cases of sexual and gender-based violence against women and children that are investigated and sentenced
	16.2. Compliance with recommendations from the Universal Periodic Review and UN Treaties
	16.3. Frequency of payment of salaries within security forces
	16.5. Percentage of total detainees who have been held in detention for more than 12 months while awaiting sentencing or a final disposition of their case, by sex
16.4 by 2030 significantly reduce illicit financial and arms flows, strengthen recovery and return of stolen assets, and combat all forms of organized crime	90. Proportion of legal persons and arrangements for which beneficial ownership information is publicly available
	16.6. [Indicator on illicit financial flows] – to be developed

16.5 substantially reduce corruption and bribery in all its forms	91. Revenues, expenditures, and financing of all central government entities are presented on a gross basis in public budget documentation and authorized by the legislature
	94. Perception of public sector corruption
	16.4. Percentage of people and businesses that paid a bribe to a public official, or were asked for a bribe by a public official, during the last 12 months
16.6 develop effective, accountable and transparent institutions at all levels	91. Revenues, expenditures, and financing of all central government entities are presented on a gross basis in public budget documentation and authorized by the legislature
	94. Perception of public sector corruption
	16.2. Compliance with recommendations from the Universal Periodic Review and UN Treaties
16.7 ensure responsive, inclusive, participatory and representative decision-making at all levels	43. Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)
	16.8. Representation of women among mediators, negotiators and technical experts in formal peace negotiations
16.8 broaden and strengthen the participation of developing countries in the institutions of global governance	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
16.9 by 2030 provide legal identity for all including free birth registrations	92. Percentage of children under age 5 whose birth is registered with a civil authority
16.10 ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements	93. Existence and implementation of a national law and/or constitutional guarantee on the right to information
	16.9. Number of journalists and associated media personnel that are physically attacked, unlawfully detained or killed as a result of pursuing their legitimate activities.
16.a strengthen relevant national institutions, including through international cooperation, for building capacities at all levels, in particular in developing countries, for preventing violence and combating terrorism and crime	16.7. [Indicator on international cooperation in preventing violence and combating terrorism and crime] – to be developed
16.b promote and enforce non-discriminatory laws and policies for sustainable development	16.2. Compliance with recommendations from the Universal Periodic Review and UN Treaties
Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development	
17.1 strengthen domestic resource mobilization, including through international support to developing countries to improve domestic capacity for tax and other revenue collection	90. Proportion of legal persons and arrangements for which beneficial ownership information is publicly available
	95. Domestic revenues allocated to sustainable development as percent of GNI, by sector
	17.3. [Indicator on debt sustainability] – to be developed
17.2 developed countries to implement fully their ODA commitments, including to provide 0.7% of GNI in ODA	96. Official development assistance and net private grants as percent of GNI

to developing countries of which 0.15-0.20% to least-developed countries	17.10. Percent of official development assistance (ODA), net private grants, and official climate finance channeled through priority pooled multilateral financing mechanisms
17.3 mobilize additional financial resources for developing countries from multiple sources	97. Private net flows for sustainable development at market rates as share of high-income country GNI, by sector
	17.1. Total Official Support for Development
	17.2. Country Programmable Aid
	17.10. Percent of official development assistance (ODA), net private grants, and official climate finance channeled through priority pooled multilateral financing mechanisms
17.4 assist developing countries in attaining long-term debt sustainability through coordinated policies aimed at fostering debt financing, debt relief and debt restructuring, as appropriate, and address the external debt of highly indebted poor countries (HIPC) to reduce debt distress	17.3. [Indicator on debt sustainability] – to be developed
17.5 adopt and implement investment promotion regimes for LDCs	17.8. Value of LDC exports as a percentage of global exports
	17.9. [Indicator on investment promotion regimes for LDCs] – to be developed
17.6 enhance North-South, South-South and triangular regional and international cooperation on and access to science, technology and innovation, and enhance knowledge sharing on mutually agreed terms, including through improved coordination among existing mechanisms, particularly at UN level, and through a global technology facilitation mechanism when agreed	59. Mobile broadband subscriptions per 100 inhabitants, by urban/rural
	60. Index on ICT maturity
	63. Personnel in R&D (per million inhabitants)
	17.5. [Indicator on technology sharing and diffusion] – to be developed
17.7 promote development, transfer, dissemination and diffusion of environmentally sound technologies to developing countries on favorable terms, including on concessional and preferential terms, as mutually agreed	17.5. [Indicator on technology sharing and diffusion] – to be developed
	17.6. [Indicator on the creation of / subscription to the Technology Bank and STI (Science, Technology and Innovation) Capacity Building Mechanism for LDCs by 2017] – to be developed
17.8 fully operationalize the Technology Bank and STI (Science, Technology and Innovation) capacity building mechanism for LDCs by 2017, and enhance the use of enabling technologies in particular ICT	17.5. [Indicator on technology sharing and diffusion] – to be developed
	17.6. [Indicator on the creation of / subscription to the Technology Bank and STI (Science, Technology and Innovation) Capacity Building Mechanism for LDCs by 2017] – to be developed
17.9 enhance international support for implementing effective and targeted capacity building in developing countries to support national plans to implement all sustainable development goals, including through North-South, South-South, and triangular cooperation	17.1. Total Official Support for Development
	17.2. Country Programmable Aid
	17.3. [Indicator on debt sustainability] – to be developed
	17.4. Gross domestic expenditure on R&D as share of GDP
	17.5. [Indicator on technology sharing and diffusion] – to be developed
	17.6. [Indicator on the creation of / subscription to the Technology Bank and STI (Science, Technology and Innovation) Capacity Building Mechanism for LDCs by 2017] – to be developed
	17.7. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (MDG Indicator)
	17.8. Value of LDC exports as a percentage of global exports

	17.9. [Indicator on investment promotion regimes for LDCs] – to be developed
17.10 promote a universal, rules-based, open, non-discriminatory and equitable multilateral trading system under the WTO including through the conclusion of negotiations within its Doha Development Agenda	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	17.7. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (MDG Indicator)
	17.8. Value of LDC exports as a percentage of global exports
	17.9. [Indicator on investment promotion regimes for LDCs] – to be developed
17.11 increase significantly the exports of developing countries, in particular with a view to doubling the LDC share of global exports by 2020	17.7. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (MDG Indicator)
	17.8. Value of LDC exports as a percentage of global exports
17.12 realize timely implementation of duty-free, quota-free market access on a lasting basis for all least developed countries consistent with WTO decisions, including through ensuring that preferential rules of origin applicable to imports from LDCs are transparent and simple, and contribute to facilitating market access	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
	17.7. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (MDG Indicator)
	17.8. Value of LDC exports as a percentage of global exports
17.13 enhance global macroeconomic stability including through policy coordination and policy coherence	54. GNI per capita (PPP, current US$ Atlas method)
	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
17.14 enhance policy coherence for sustainable development	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets
17.15 respect each country's policy space and leadership to establish and implement policies for poverty eradication and sustainable development	98. Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the

	implementation of relevant SDG targets
17.16 enhance the global partnership for sustainable development complemented by multi-stakeholder partnerships that mobilize and share knowledge, expertise, technologies and financial resources to support the achievement of sustainable development goals in all countries, particularly developing countries	96. Official development assistance and net private grants as percent of GNI
	17.10. Percent of official development assistance (ODA), net private grants, and official climate finance channeled through priority pooled multilateral financing mechanisms
17.17 encourage and promote effective public, public-private, and civil society partnerships, building on the experience and resourcing strategies of partnerships	17.10. Percent of official development assistance (ODA), net private grants, and official climate finance channeled through priority pooled multilateral financing mechanisms
17.18 by 2020, enhance capacity building support to developing countries, including for LDCs and SIDS, to increase significantly the availability of high-quality, timely and reliable data disaggregated by income, gender, age, race, ethnicity, migratory status, disability, geographic location and other characteristics relevant in national contexts	55. Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts
	99. Share of SDG Indicators that are reported annually
17.19 by 2030, build on existing initiatives to develop measurements of progress on sustainable development that complement GDP, and support statistical capacity building in developing countries	100. Evaluative Wellbeing and Positive Mood Affect

Annex 1: Cross-Cutting Issues in the SDG Indicator and Monitoring Framework

Much has been said about the importance of integrating the Sustainable Development Goals, through the use of an integrated indicator and monitoring framework. Indeed, many important issues, such as gender equality, health, sustainable consumption and production, and nutrition, cut across different goals and targets. This report therefore proposes tracking by indicators appearing under more than one goal and target. Similarly, the goals and targets are interdependent and must be pursued together, since progress in one area often depends on progress in other areas. As a result, an SDG indicator framework needs to effectively track cross-cutting issues and support integrated, systems-based approaches to implementation.

Below we illustrate how some of the most commonly mentioned cross-cutting issues can be monitored by a combination of Global Monitoring Indicators and Complementary National Indicators. Some issues have standalone goals, while others are integrated across the framework. This Annex complements Table 2, which shows how the indicators proposed in this report relate to individual targets. Many indicators contribute to more than one target. For ease of reference and presentation we focus below on cross-references across goals. Similar tables can be prepared for targets, but this information is already contained in Table 2.

The presentation below is illustrative and incomplete. It focuses only on the indicators that measure explicit SDG outcomes, and does not endeavor to describe all cause-effect relationships.[32] Yet, even in this reduced form, a presentation of indicators by cross-cutting issues facilitates addressing the following critical questions:
(i) Are all critical components of the issue addressed in the indicator framework and how can an appropriate balance be struck between input and outcome indicators?
(ii) How can one indicator contribute towards more than one goal?
(iii) How could a systems-based implementation strategy towards addressing the cross-cutting issues be organized?
(iv) How could thematic monitoring (section II.4) be organized using relevant Global Monitoring Indicators?

A second important tool for tracking cross-cutting issues is disaggregation. As explained in the report and Annex 3 (page 96), the monitoring of indicators should be disaggregated as much as possible so that SDG outcomes can be tracked with a high degree of resolution. Achieving gender equality, for example, will require many indicators to be disaggregated by sex, such as those on health and education.

Here, we consider the following cross-cutting issues (arranged in alphabetical order):

a) Beyond GDP - new measures for development
b) Climate change adaptation and mitigation; disaster risk reduction
c) Food security and nutrition

[32] Such relationships are described in more detail in SDSN's *Action Agenda for Sustainable Development* and other reports.

d) Gender equality
e) Global partnership, including financing for sustainable development
f) Governance
g) Growth and Employment
h) Health
i) Inequalities
j) Industrialization
k) Peace and security, and support for vulnerable states
l) Science, technology, and innovation
m) Sustainable cities and human settlements
n) Sustainable consumption and production
o) Sustainable energy for all
p) Sustainable land use, forests and terrestrial ecosystems
q) Sustainable management of oceans and coastal areas
r) Water and sanitation
s) Wellbeing

(a) Beyond GDP - new measures for development

New measures for development that go beyond GDP are an important aspect of the SDGs. They do not have a dedicated Goal, but cut across several of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting issue
1	3	Multidimensional Poverty Index	Measures key aspects of deprivation
8	55	Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts	New measure for development
12	76	[Share of companies valued at more than [$1 billion] that publish integrated monitoring] – to be developed	Business reporting
17	98	Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets	International reporting
17	100	Evaluative Wellbeing and Positive Mood Affect	Happiness and subjective wellbeing

(b) Climate change adaptation and mitigation; disaster risk reduction

Climate change adaptation and mitigation, and disaster risk reduction are important SDG priorities. Climate change is explicitly considered under goal 13, but also cuts across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
1	6	Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)	Measures economic losses and lives lost to extreme climatic events and other disasters

7	52	Implicit incentives for low-carbon energy in the electricity sector (measured as US$/MWh or US$ per ton avoided CO_2)	Reduce greenhouse gas emissions
7	53	Rate of primary energy intensity improvement	Tracks transition to cleaner energy
9	62	Total energy and industry-related GHG emissions by gas and sector, expressed as production and demand-based emissions (tCO_2e).	Reduce greenhouse gas emissions
12	75	Aerosol optical depth (AOD)	Aerosols contribute to climate change
13	77	Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.	Part of goal 13
13	78	CO_2 intensity of new power generation capacity installed (gCO_2 per kWh), and of new cars (gCO_2/pkm) and trucks (gCO_2/tkm)	Part of goal 13
13	79	Net GHG emissions in the Agriculture, Forest and other Land Use (AFOLU) sector (tCO_2e)	Part of goal 13
13	80	Official climate financing from developed countries that is incremental to ODA (in US$)	Part of goal 13
15	83	Annual change in forest area and land under cultivation (modified MDG Indicator)	Part of goal 13

In addition, the following Complementary National Indicators relate to climate change adaptation and mitigation and disaster risk reduction:

Indicator number	**Complementary National Indicator**
1.4.	[Disaster Risk Reduction Indicator] – to be developed
7.1.	Primary energy by type
7.2.	Fossil fuel subsidies ($ or %GNI)
11.6.	Percentage of consumption of food and raw materials within urban areas that are produced and delivered in/from rural areas within the country
11.4.	Presence of urban building codes stipulating either the use of local materials and/or new energy efficient technologies or with incentives for the same.
11.3.	Percentage of cities with more than 100,000 inhabitants that are implementing risk reduction and resilience strategies informed by accepted international frameworks (such as the forthcoming Hyogo-2 framework)
13.1.	[Climate Change Action Index] – to be developed
13.2.	GHG emissions intensity of areas under forest management ($GtCO_2e$ / ha)

(c) Food security and nutrition

Food security and nutrition is an important priority that has a dedicated goal (SDG 2), but also cuts across many of the SDGs:

Goal	**Indicator number**	**Global Monitoring Indicator**	**Link to cross-cutting**
1	3	Multidimensional Poverty Index	Includes hunger measure
2	8	Proportion of population below minimum level of dietary energy consumption (MDG Indicator)	Part of hunger/nutrition goal
2	9	Percentage of women of reproductive age (15-49) with anemia	Part of hunger/nutrition goal

2	10	Prevalence of stunting and wasting in children under 5 years of age	Part of hunger/nutrition goal
2	11	Percentage of infants under 6 months who are exclusively breast fed	Part of hunger/nutrition goal
2	12	Percentage of women, 15-49 years of age, who consume at least 5 out of 10 defined food groups	Part of hunger/nutrition goal
2	13	Crop yield gap (actual yield as % of potential or water-limited potential yield)	Part of hunger/nutrition goal
2	14	Number of agricultural extension workers per 1000 farmers [or share of farmers covered by agricultural extension programs and services]	Part of hunger/nutrition goal
2	15	Nitrogen use efficiency in food systems	Part of hunger/nutrition goal
2	16	[Crop water productivity (tons of harvested product per unit irrigation water)] – to be developed	Part of hunger/nutrition goal
3	24	Percent of population overweight and obese, including children under 5	Component of good nutrition
6	45	Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)	Access to clean water for drinking and cooking
6	46	Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)	Access to sanitation improves nutritional status
12	73	Global Food Loss Index [or other indicator to be developed to track the share of food lost or wasted in the value chain after harvest]	Tracks food losses and waste
14	82	Percentage of fish tonnage landed within Maximum Sustainable Yield (MSY)	Secure and sustainable fish stocks
15	83	Annual change in forest area and land under cultivation (modified MDG Indicator)	Expansion of agricultural land
15	85	Annual change in degraded or desertified arable land (% or ha)	Quality of agricultural land

In addition, the following Complementary National Indicators relate to food security and nutrition:

Indicator number	**Complementary National Indicator**
2.1.	Percentage of population with shortfalls of: iron, zinc, iodine, vitamin A, folate, vitamin B12, [and vitamin D]
2.2.	Proportion of infants 6–23 months of age who receive a minimum acceptable diet
2.3.	Percentage children born with low birth weight
2.4.	Cereal yield growth rate (% p.a.)
2.5.	Livestock yield gap (actual yield as % of attainable yield).
2.6.	[Phosphorus use efficiency in food systems] – to be developed
2.7.	Share of calories from non-staple crops
2.8.	Percentage of total daily energy intake from protein in adults
2.9.	[Access to drying, storage and processing facilities] – to be developed
2.10.	[Indicator on genetic diversity in agriculture] – to be developed
2.11.	[Indicator on irrigation access gap] – to be developed
2.12.	[Farmers with nationally appropriate crop insurance (%)] – to be developed
2.13.	Public and private R&D expenditure on agriculture and rural development (% of GNI)
2.14.	[Indicator on food price volatility] – to be developed
3.4.	Coverage of iron-folic acid supplements for pregnant women (%)
3.23.	Fraction of calories from saturated fat and added sugar

3.24.	Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years
3.25.	Prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruit and vegetables per day
3.26.	Percentage change in per capita [red] meat consumption relative to a 2015 baseline
6.1.	Percentage of population practicing open defecation
6.2.	Percentage of population with basic hand washing facilities with soap and water at home
6.3.	Proportion of the population connected to collective sewers or with on-site storage of all domestic wastewaters
6.4.	Percentage of pupils enrolled in primary schools and secondary schools providing basic drinking water, adequate sanitation, and adequate hygiene services.
6.5.	Percentage of beneficiaries using hospitals, health centers and clinics providing basic drinking water, adequate sanitation, and adequate hygiene
6.6.	Proportion of the flows of treated municipal wastewater that are directly and safely reused
14.5.	Proportion of fish stocks within safe biological limits (MDG Indicator)
14.6.	Percentage of fisheries with a sustainable certification
14.9.	[Indicator on access to marine resources for small-scale artisanal fishers] – to be developed
14.8.	[Use of destructive fishing techniques] – To be developed

(d) Gender Equality

Gender equality is an important SDG priority that has a dedicated goal (SDG 5), but also cuts across most of the SDGs. To the maximum extent possible, SDG indicators should therefore be disaggregated by sex (Annex 3, page 96). Many dedicated indicators track dimensions of gender equality:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
1	3	Multidimensional Poverty Index	Disrupted or curtailed schooling usually affects girls
1	5	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.	Equal access to land tenure
2	8	Proportion of population below minimum level of dietary energy consumption (MDG Indicator)	Part of hunger/nutrition goal
3	29	Contraceptive prevalence rate (MDG Indicator)	Sexual and Reproductive Health and Rights
4	33	Primary completion rates for girls and boys	Equal access to education
4	35	Secondary completion rates for girls and boys	Equal access to education
4	37	Tertiary enrollment rates for women and men	Equal access to education
5	38	Prevalence of girls and women 15-49 who have experienced physical or sexual violence [by an intimate partner] in the last 12 months	Part of gender goal
5	39	Percentage of referred cases of sexual and gender-based violence against women and children that are investigated and sentenced	Part of gender goal
5	40	Percentage of women aged 20-24 who were married or in a union before age 18	Part of gender goal
5	41	Percentage of girls and women aged 15-49 years who	Part of gender goal

		have undergone FGM/C	
5	42	Average number of hours spent on paid and unpaid work combined (total work burden), by sex	Part of gender goal
5	43	Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)	Part of gender goal
5	44	Met demand for family planning (modified MDG Indicator)	Part of gender goal
7	50	Share of the population using modern cooking solutions, by urban/rural	Access to safer, modern cooking
7	51	Share of the population using reliable electricity, by urban/rural	Access to safe, reliable electricity
8	57	Ratification and implementation of fundamental ILO labor standards and compliance in law and practice	Ending discrimination
1	5	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.	Equal access to housing tenure
16	92	Percentage of children under age 5 whose birth is registered with a civil authority	Access to legal identity

In addition, the following Complementary National Indicators relate to gender equality:

Indicator number	**Complementary National Indicator**
3.1.	Percentage of births attended by skilled health personnel (MDG Indicator)
3.4.	Coverage of iron-folic acid supplements for pregnant women (%)
3.7.	Percent HIV+ pregnant women receiving PMTCT
3.8.	Condom use at last high-risk sex (MDG Indicator)
3.14.	Percentage of pregnant women receiving malaria IPT (in endemic areas)
3.17.	Percentage of women with cervical cancer screening
4.1.	[Percentage of girls and boys who acquire skills and values needed for global citizenship and sustainable development (national benchmarks to be developed) by the end of lower secondary] – to be developed
4.2.	Percentage of children under 5 experiencing responsive, stimulating parenting in safe environments
4.4.	[Percentage of adolescents (15-19 years) with access to school-to-work programs] – to be developed
4.5.	Literacy rate of 15-24 year-olds, women and men (MDG Indicator)
5.1.	Gender gap in wages, by sector of economic activity
5.2.	Share of women on corporate boards of multi-national corporations (MNCs)
5.3.	Percentage of women without incomes of their own
5.4.	Adolescent birth rate (MDG Indicator)
5.5.	Percentage of young people receiving comprehensive sexuality education
16.1.	Percentage of women and men who report feeling safe walking alone at night in the city or area where they live

(e) Global partnership including financing for sustainable development

Global partnership, including financing for sustainable development, is an important SDG priority that cuts across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
8	55	Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts	International monitoring on SD
9	59	Mobile broadband subscriptions per 100 inhabitants, by urban/rural	Private sector roll out of broadband coverage
9	60	Index on ICT maturity	Private sector roll out of ICT
13	80	Official climate financing from developed countries that is incremental to ODA (in US$)	Financing for development
17	98	Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Reporting Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), World Trade Organization (WTO) [other organizations to be added] on relationship between international rules and the SDGs and the implementation of relevant SDG targets	Tracking international organizations' compliance with and support for SDGs
17	96	Official development assistance (ODA) and net private grants as percent of GNI	Financing for development
17	95	Domestic revenues allocated to sustainable development as percent of GNI, by sector	Financing for development, domestic resource mobilization
17	97	Private net flows for sustainable development at market rates as share of high-income country GNI, by sector	Financing for development

In addition, the following Complementary National Indicators relate to global partnership and financing:

Indicator number	Complementary National Indicator
2.13.	Public and private R&D expenditure on agriculture and rural development (% of GNI)
3.32.	Public and private R&D expenditure on health (% GNP)
4.9.	[Indicator on scholarships for students from developing countries] – to be developed
6.8.	[Indicator on international cooperation and capacity building in water and sanitation-related activities] – to be developed
11.4.	Presence of urban building codes stipulating either the use of local materials and/or new energy efficient technologies or with incentives for the same.
15.6.	[Indicator on financial resources for biodiversity and ecosystems] – to be developed
15.7.	[Indicator on financial resources for sustainable forest management] – to be developed
15.8.	[Indicator on global support to combat poaching and trafficking of protected species] – to be developed
16.4.	Percentage of people and businesses that paid a bribe to a public official, or were asked for a bribe by a public official, during the last 12 months
16.7.	[Indicator on international cooperation in preventing violence and combating terrorism and crime] – to be developed
17.1.	Total Official Support for Development
17.2.	Country Programmable Aid
17.3.	[Indicator on debt sustainability] – to be developed
17.4.	Gross domestic expenditure on R&D as share of GDP
17.5.	[Indicator on technology sharing and diffusion] – to be developed
17.6.	[Indicator on the creation of / subscription to the Technology Bank and STI (Science, Technology and Innovation) Capacity Building Mechanism for LDCs by 2017] – to be developed
17.7.	Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (MDG Indicator)
17.8.	Value of LDC exports as a percentage of global exports

17.9.	[Indicator on investment promotion regimes for LDCs] – to be developed
17.10.	Percent of official development assistance (ODA), net private grants, and official climate finance channeled through priority pooled multilateral financing mechanisms

(f) Governance

The importance of governance to the SDG agenda is signified by a dedicated goal (SDG 16), but it also cuts across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
1	4	Percentage of eligible population covered by national social protection programs	Effective governance programs
5	39	Percentage of referred cases of sexual and gender-based violence against women and children that are investigated and sentenced	Rule of law and access to justice
5	43	Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)	Ending discrimination, ensuring access to political life, representative institutions
6	45	Percentage of population with access to safely managed water services, by urban/rural (modified MDG Indicator)	Service delivery
6	46	Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)	Service delivery
6	47	Percentage of wastewater flows treated to national standards [and reused] – to be developed	Service delivery
12	72	Disclosure of Natural Resource Rights Holdings	Transparent and accountable institutions
16	90	Proportion of legal persons and arrangements for which beneficial ownership information is publicly available	Part of goal 16
16	91	Revenues, expenditures, and financing of all central government entities are presented on a gross basis in public budget documentation and authorized by the legislature	Part of goal 16
16	92	Percentage of children under age 5 whose birth is registered with a civil authority	Part of goal 16
16	93	Existence and implementation of a national law and/or constitutional guarantee on the right to information	Part of goal 16
16	94	Perception of public sector corruption	Part of goal 16

In addition, the following Complementary National Indicators relate to governance:

Indicator number	Complementary National Indicator
12.2.	[Legislative branch oversight role regarding resource-based contracts and licenses]– to be developed
16.1.	Percentage of women and men who report feeling safe walking alone at night in the city or area where they live
16.2.	Compliance with recommendations from the Universal Periodic Review and UN Treaties
16.3.	Frequency of payment of salaries within security forces
16.4.	Percentage of people and businesses that paid a bribe to a public official, or were asked for a bribe by a public official, during the last 12 months

16.5.	Percentage of total detainees who have been held in detention for more than 12 months while awaiting sentencing or a final disposition of their case
16.6.	[Indicator on illicit financial flows] – to be developed
16.7.	[Indicator on international cooperation in preventing violence and combating terrorism and crime] – to be developed
16.8.	Representation of women among mediators, negotiators and technical experts in formal peace negotiations
16.9.	Number of journalists and associated media personnel that are physically attacked, unlawfully detained or killed as a result of pursuing their legitimate activities

(g) Growth and employment

Growth and employment are important SDG priorities, articulated in a dedicated goal (SDG 8), but they also cut across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
1	1	Proportion of population below $1.25 (PPP) per day (MDG Indicator)	Growth and employment reduce extreme poverty
2	14	Number of agricultural extension workers per 1000 farmers [or share of farmers covered by agricultural extension programs and services]	Supporting livelihoods in the agricultural sector
4	35	Secondary completion rates for girls and boys	Education promotes growth and employment
4	37	Tertiary enrollment rates for women and men	Education promotes growth and employment
8	54	GNI per capita (PPP, current US$ Atlas method)	Part of growth and employment goal
8	55	Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts	Part of growth and employment goal
8	56	Youth employment rate, by formal and informal sector	Part of growth and employment goal
8	57	Ratification and implementation of fundamental ILO labor standards and compliance in law and practice	Part of growth and employment goal
9	61	Manufacturing value added (MVA) as percent of GDP	Manufacturing creates employment
9	63	Personnel in R&D (per million inhabitants)	Research helps promote growth and employment

In addition, the following Complementary National Indicators relate to growth and employment:

Indicator number	Complementary National Indicator
2.9.	[Access to drying, storage and processing facilities] – to be developed
2.11.	[Indicator on irrigation access gap] – to be developed
2.12.	[Farmers with nationally appropriate crop insurance (%)] – to be developed
4.5.	Literacy rate of 15-24 year-olds, women and men (MDG Indicator)
4.6.	[Percentage of young adults (18-24 years) with access to a learning program] – to be developed
5.1.	Gender gap in wages, by sector of economic activity
8.1.	Growth rate of GDP per person employed (MDG Indicator)
8.2.	Working poverty rate measured at $2 PPP per capita per day
8.3.	[Indicator of decent work] – to be developed
8.4.	Household income, including in-kind services (PPP, current US$)
8.5.	Employment to population ratio (EPR) by gender and age group (15–64)

8.6.	Share of informal employment in total employment
8.7.	Percentage of own-account and contributing family workers in total employment
8.8.	Percentage of young people not in education, employment or training (NEET)
8.9.	[Indicator on implementation of 10-year framework of programs on sustainable consumption and production] – to be developed
17.4.	Gross domestic expenditure on R&D as share of GDP

(h) Health

In addition to the Global Monitoring Indicators under the dedicated health goal (SDG 3), several other indicators capture determinants and manifestations of good health:

Goal	Indicator number	Global Monitoring Indicator	Link to health
1	3	Multidimensional Poverty Index	Includes child mortality
1	4	Percentage of eligible population covered by national social protection programs	Social protection can determine access to healthcare
2	8	Proportion of population below minimum level of dietary energy consumption (MDG Indicator)	Good nutrition is central to good health
2	9	Percentage of women of reproductive age (15-49) with anemia	Good nutrition is central to good health
2	10	Prevalence of stunting and wasting in children under 5 years of age	Good nutrition is central to good health
2	11	Percentage of infants under 6 months who are exclusively breast fed	Good nutrition is central to good health
2	12	Percentage of women (15-49) who consume at least 5 out of 10 defined food groups	Good nutrition is central to good health
3	17	Maternal mortality ratio (MDG Indicator) and rate	Part of health goal
3	18	Neonatal, infant, and under-5 mortality rates (modified MDG Indicator)	Part of health goal
3	19	Percent of children receiving full immunization (as recommended by national vaccination schedules)	Part of health goal
3	20	HIV incidence, treatment rate, and mortality (modified MDG Indicator)	Part of health goal
3	21	Incidence, prevalence, and death rates associated with all forms of TB (MDG Indicator)	Part of health goal
3	22	Incidence and death rates associated with malaria (MDG Indicator)	Part of health goal
3	23	Probability of dying between exact ages 30 and 70 from any of cardiovascular disease, cancer, diabetes, chronic respiratory disease, [or suicide]	Part of health goal
3	24	Percent of population overweight and obese, including children under 5	Part of health goal
3	25	Road traffic deaths per 100,000 population	Part of health goal
3	26	[Consultations with a licensed provider in a health facility or the community per person, per year] – to be developed	Part of health goal
3	27	[Percentage of population without effective financial protection for health care] – to be developed	Part of health goal

3	28	Proportion of persons with a severe mental disorder (psychosis, bipolar affective disorder, or moderate-severe depression) who are using services	Part of health goal
3	29	Contraceptive prevalence rate (MDG Indicator)	Part of health goal
3	30	Current use of any tobacco product (age-standardized rate)	Part of health goal
5	38	Prevalence of girls and women 15-49 who have experienced physical or sexual violence [by an intimate partner] in the last 12 months	Violence causes physical and psychological health problems
5	40	Percentage of women aged 20-24 who were married or in a union before age 18	Early marriage can lead to many early, high-risk, pregnancies
5	41	Percentage of girls and women aged 15-49 years who have undergone FGM/C	FGM can cause physical and psychological health problems
5	44	Met demand for family planning (modified MDG Indicator)	SRHR
6	45	Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)	Access to clean sufficient water, and protection from water borne illnesses
6	46	Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)	Access to sanitation and protection from related illnesses
6	47	Percentage of wastewater flows treated to national standards [and reused] – to be developed	Protection from pollution and illnesses related to wastewater
7	50	Share of the population using modern cooking solutions, by urban/rural	Improvements in indoor air quality can help reduce lower respiratory infections
7	51	Share of the population using reliable electricity, by urban/rural	Improvements in indoor air quality, can help reduce lower respiratory infections
11	69	Mean urban air pollution of particulate matter (PM10 and PM2.5)	Part of urban goal
16	88	Violent injuries and deaths per 100,000 population	Conflict leads to health emergencies
16	89	Number of refugees	Precarious situations which can lead to pandemics
16	92	Percentage of children under age 5 whose birth is registered with a civil authority	Access to identity and health services
17	100	Evaluative Wellbeing and Positive Mood Affect	Mental health

In addition, the following Complementary National Indicators relate to health:

Indicator number	**Complementary National Indicator**
2.1.	Percentage of population with shortfalls of: iron, zinc, iodine, vitamin A, folate, vitamin B12, [and vitamin D]
2.2.	Proportion of infants 6–23 months of age who receive a minimum acceptable diet
2.3.	Percentage children born with low birth weight
3.1.	Percentage of births attended by skilled health personnel (MDG Indicator)
3.2.	Antenatal care coverage (at least one visit and at least four visits) (MDG Indicator)
3.3.	Post-natal care coverage (one visit) (MDG Indicator)
3.4.	Coverage of iron-folic acid supplements for pregnant women (%)
3.5.	Incidence rate of diarrheal disease in children under 5 years
3.6.	Percentage of 1 year-old children immunized against measles (MDG Indicator)
3.7.	Percent HIV+ pregnant women receiving PMTCT

3.8.	Condom use at last high-risk sex (MDG Indicator)
3.9.	Percentage of tuberculosis cases detected and cured under directly observed treatment short course (MDG Indicator)
3.10.	Percentage of children under 5 with fever who are treated with appropriate anti-malarial drugs (MDG Indicator)
3.11.	Percentage of people in malaria-endemic areas sleeping under insecticide-treated bed nets (modified MDG Indicator)
3.12.	Percentage of confirmed malaria cases that receive first-line antimalarial therapy according to national policy
3.13.	Percentage of suspected malaria cases that receive a parasitological test
3.14.	Percentage of pregnant women receiving malaria IPT (in endemic areas)
3.15.	Neglected Tropical Disease (NTD) cure rate
3.16.	Incidence and death rates associated with hepatitis
3.17.	Percentage of women with cervical cancer screening
3.18.	Percentage of adults with hypertension diagnosed & receiving treatment
3.19.	Harmful use of alcohol
3.20.	Healthy life expectancy at birth
3.21.	Waiting time for elective surgery
3.22.	Prevalence of insufficient physical activity
3.23.	Fraction of calories from saturated fat and added sugar
3.24.	Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years
3.25.	Prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruit and vegetables per day
3.26.	Percentage change in per capita [red] meat consumption relative to a 2015 baseline
3.27.	Age-standardized (to world population age distribution) prevalence of diabetes (preferably based on HbA1c), hypertension, cardiovascular disease, and chronic respiratory disease.
3.28.	[Mortality from indoor air pollution] – to be developed
3.29.	Percentage of health facilities meeting service specific readiness requirements.
3.30.	Percentage of population with access to affordable essential drugs and commodities on a sustainable basis
3.31.	Percentage of new health care facilities built in compliance with building codes and standards
3.32.	Public and private R&D expenditure on health (% GNP)
3.33.	Ratio of health professionals to population (MDs, nurse midwives, nurses, community health workers, EmOC caregivers)
3.34.	Percentage of women and men aged 15–49 who report discriminatory attitudes towards people living with HIV
5.5.	Percentage of young people receiving comprehensive sexuality education
6.1.	Percentage of population practicing open defecation
6.2.	Percentage of population with basic hand washing facilities with soap and water at home
6.3.	Proportion of the population connected to collective sewers or with on-site storage of all domestic wastewaters
6.4.	Percentage of pupils enrolled in primary schools and secondary schools providing basic drinking water, adequate sanitation, and adequate hygiene services.
6.5.	Percentage of beneficiaries using hospitals, health centers and clinics providing basic drinking water, adequate sanitation, and adequate hygiene

(i) Inequalities

Inequalities are an important SDG priority, with a dedicated goal (SDG 11), but they also cut across most of the SDGs. SDG indicators should be disaggregated by all the key dimensions (Annex 3, page 96) to the maximum extent

possible, to track progress between different groups and ensure we minimize inequalities. Many dedicated indicators track dimensions of inequality:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
1	4	Percentage of eligible population covered by national social protection programs	Ending discrimination, equal access to social protection
1	5	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected	Ending discrimination, equal access to land tenure
2	8	Proportion of population below minimum level of dietary energy consumption (MDG Indicator)	Part of hunger/nutrition goal
2	9	Percentage of women of reproductive age (15-49) with anemia	Good nutrition is central to good health
4	33	Primary completion rates for girls and boys	Universal access to education to reduce inequalities
4	35	Secondary completion rates for girls and boys	Universal access to education to reduce inequalities
4	37	Tertiary enrollment rates for women and men	Universal access to education to reduce inequalities
5	43	Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)	Ending discrimination, equal access to economic and political life
6	45	Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)	Universal access to services
6	46	Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)	Universal access to services
8	57	Ratification and implementation of fundamental ILO labor standards and compliance in law and practice	Ending discrimination, protecting vulnerable groups
10	64	[Indicator on inequality at top end of income distribution: GNI share of richest 10% or Palma ratio]	Part of equality goal
10	65	Percentage of households with incomes below 50% of median income ("relative poverty")	Part of equality goal
16	92	Percentage of children under age 5 whose birth is registered with a civil authority	Universal access to legal identity

In addition, the following Complementary National Indicators relate to inequalities:

Indicator number	Complementary National Indicator
5.1.	Gender gap in wages, by sector of economic activity
5.2.	Share of women on corporate boards of multi-national corporations (MNCs)
10.1.	Gini Coefficient
10.2.	Income/wage persistence (intergenerational socioeconomic mobility)
10.3.	Human Mobility Governance Index
10.4.	Net ODA to LDCs as percentage of high-income countries' GNI (modified from MDG Indicator)
10.5.	Indicator on share of LDCs / LIC representatives on boards of IMF / WB (and other institutions of

	governance)
10.6.	Remittance transfer costs

(j) Industrialization

Industrialization is an important SDG priority, and has a dedicated goal (SDG 9), which also includes infrastructure. It also cuts across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
4	35	Secondary completion rates for girls and boys	Enhancing math and science skills
4	36	[Percentage of girls and boys who achieve proficiency across a broad range of learning outcomes, including in reading and in mathematics by end of the secondary schooling cycle (based on credibly established national benchmarks)] – to be developed	Enhancing math and science skills
4	37	Tertiary enrollment rates for women and men	Enhancing math and science skills
6	45	Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)	Universal access to infrastructure and extension services
6	46	Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)	Universal access to infrastructure and extension services
6	47	Percentage of wastewater flows treated to national standards [and reused] – to be developed	Universal access to infrastructure and extension services
6	48	[Indicator on water resource management] – to be developed	Efficient use of water
7	51	Share of the population using reliable electricity, by urban/rural	Access to electricity
9	58	Access to all-weather road (% access within [x] km distance to road)	Part of goal 9
9	59	Mobile broadband subscriptions per 100 inhabitants, by urban/rural	Part of goal 9
9	60	Index on ICT maturity	Part of goal 9
9	61	Manufacturing value added (MVA) as percent of GDP	Part of goal 9
9	62	Total energy and industry-related GHG emissions by gas and sector, expressed as production and demand-based emissions (tCO_2e)	Part of goal 9
9	63	Personnel in R&D (per million inhabitants)	Part of goal 9
12	74	Consumption of ozone-depleting substances (MDG Indicator)	Environmentally safe industrial processes
12	75	Aerosol optical depth (AOD)	Environmentally safe industrial processes
13	77	Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.	Transition to energy-efficient industrial processes

In addition, the following Complementary National Indicators relate to industrialization:

Indicator number	Complementary National Indicator
4.4.	[Percentage of adolescents (15-19 years) with access to school-to-work programs] – to be developed
4.6.	Percentage of young adults (18-24 years) with access to a learning program

4.9.	[Indicator on scholarships for students from developing countries] – to be developed
7.1.	Primary energy by type
7.2.	Fossil fuel subsidies ($ or %GNI)
9.1.	Percentage of households with Internet, by type of service by urban/rural areas
9.2.	Employment in industry (% of total employment)

(k) Peace and security; support for vulnerable states

Peace and security and support for vulnerable states are important SDG priorities that fall mostly under SDG 16, but also cut across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
1	2	Proportion of population living below national poverty line, by urban/rural (modified MDG Indicator)	Addressing poverty and inequalities
1	5	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected	Secure land tenure
5	39	Percentage of referred cases of sexual and gender-based violence against women and children that are investigated and sentenced	Rule of law, access to justice
5	43	Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)	Women's and minorities' roles in decision-making, thereby addressing inequalities
8	56	Youth employment rate, by formal and informal sector	Youth dissatisfaction and alienation
8	57	Ratification and implementation of fundamental ILO labor standards and compliance in law and practice	Ending discrimination, protecting vulnerable groups
10	64	[Indicator on inequality at top end of income distribution: GNI share of richest 10% or Palma ratio]	Addressing inequalities
10	65	Percentage of households with incomes below 50% of median income ("relative poverty")	Addressing inequalities
12	72	[Disclosure of Natural Resource Rights Holdings] – to be developed	Good governance and transparency
16	88	Violent injuries and deaths per 100,000 population	Part of goal 16
16	89	Number of refugees	Part of goal 16
16	91	Revenues, expenditures, and financing of all central government entities are presented on a gross basis in public budget documentation and authorized by the legislature	Part of goal 16
16	93	Existence and implementation of a national law and/or constitutional guarantee on the right to information	Part of goal 16
16	94	Perception of public sector corruption	Part of goal 16

In addition, the following Complementary National Indicators relate to peace and security; support for vulnerable states:

Indicator	Complementary National Indicator

number	
10.1.	Gini Coefficient
10.3.	Human Mobility Governance Index
10.4.	Net ODA to LDCs as percentage of high-income countries' GNI (modified MDG Indicator)
10.5.	Indicator on share of LDCs / LIC representatives on boards of IMF / WB (and other institutions of governance)
16.1.	Percentage of women and men who report feeling safe walking alone at night in the city or area where they live
16.2.	Compliance with recommendations from the Universal Periodic Review and UN Treaties
16.3.	Frequency of payment of salaries within security forces
16.4.	Percentage of people and businesses that paid a bribe to a public official, or were asked for a bribe by a public official, during the last 12 months
16.5.	Percentage of total detainees who have been held in detention for more than 12 months while awaiting sentencing or a final disposition of their case
16.6.	[Indicator on illicit financial flows] – to be developed
16.7.	[Indicator on international cooperation in preventing violence and combating terrorism and crime] – to be developed
16.8.	Representation of women among mediators, negotiators and technical experts in formal peace negotiations
16.9.	Number of journalists and associated media personnel that are physically attacked, unlawfully detained or killed as a result of pursuing their legitimate activities.
17.1.	Total Official Support for Development
17.2.	Country Programmable Aid
17.3.	[Indicator on debt sustainability] – to be developed

(l) Science, technology, and innovation

Science, technology, and innovation are important SDG priorities that do not have a dedicated goal, but cut across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
4	37	Tertiary enrollment rates for women and men	Competencies in math
9	59	Mobile broadband subscriptions per 100 inhabitants, by urban/rural	Broadband access
9	60	Index on ICT maturity	Quality broadband access
9	61	Manufacturing value added (MVA) as percent of GDP	Skilled workers
9	63	Personnel in R&D (per million inhabitants)	Skilled workers
13	77	Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.	Innovation required to make DDPP possible

In addition, the following Complementary National Indicators relate to science, technology, and innovation:

Indicator number	Complementary National Indicator
2.13.	Public and private R&D expenditure on agriculture and rural development (% of GNI)
3.32.	Public and private R&D expenditure on health (% GNP)
6.9.	[Indicator on participation of local communities for improving water and sanitation management] – to

	be developed
8.8.	Percentage of young people not in education, employment or training (NEET)
9.1.	Percentage of households with Internet, by type of service by urban/rural areas
14.3.	[Indicator on the implementation of spatial planning strategies for coastal and marine areas]– to be developed
14.10.	[Indicator on transferring marine technology] – to be developed
14.12	Area of mangrove deforestation (hectares and as % of total mangrove area)
15.4.	[Indicator on access to genetic resources] – to be developed
17.5.	Indicator on technology sharing and diffusion] – to be developed
17.6.	[Indicator on the creation of / subscription to the Technology Bank and STI (Science, Technology and Innovation) Capacity Building Mechanism for LDCs by 2017] – to be developed

(m) Sustainable Cities and Human Settlements

Sustainable cities is an important priority that has a dedicated goal (SDG 11), but also cuts across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
1	3	Multidimensional Poverty Index	Includes poverty measure on urban level
1	5	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected	Rights to housing are critical to urban dwellers and part of this indicator on overall tenure
1	6	Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)	Safety and saving lives in urban areas
3	23	Probability of dying between exact ages 30 and 70 from any of cardiovascular disease, cancer, diabetes, chronic respiratory disease, [or suicide]	Access to clean air for healthy living conditions in urban areas
3	25	Road traffic deaths per 100,000 population	Safety in mobility in urban areas
6	45	Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)	Access to clean water for drinking and cooking in urban areas
6	46	Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)	Access to sanitation improves health status and upgrades slums in urban areas
7	50	Share of the population using modern cooking solutions, by urban/rural	Access to healthy cooking facilities improves health status
7	51	Share of the population using reliable electricity, by urban/rural	Access to electricity improves safety and security, upgrades and enables access to modern communication facilities in urban areas
7	53	Rate of primary energy intensity improvement	Access to electricity improves safety and security, upgrades and enables access to modern communication facilities in urban areas
8	56	Youth employment rate, by formal and informal sector	Access to job opportunities in cities and urban areas
8	57	Ratification and implementation of fundamental ILO labor standards and compliance in law and practice	Access to decent work in urban areas

9	58	Access to all-weather road (% access within [x] km distance to road)	Mobility in urban areas
9	59	Mobile broadband subscriptions per 100 inhabitants, by urban/rural	Access to information and services in urban areas
9	61	Manufacturing value added (MVA) as percent of GDP	Presence of industry in urban areas and contribution of cities to GDP
9	62	Total energy and industry-related GHG emissions by gas and sector, expressed as production and demand-based emissions (tCO_2e)	Urban contribution to GHG emissions and measurement of clean air in urban areas
11	66	Percentage of urban population living in slums or informal settlements (MDG Indicator)	Part of goal 11
11	67	Percentage of people within 0.5km of public transit running at least every 20 minutes	Part of goal 11
11	68	[Ratio of land consumption rate to population growth rate, at comparable scale] – to be developed	Part of goal 11
11	69	Mean urban air pollution of particulate matter (PM10 and PM2.5)	Part of goal 11
11	70	Area of public and green space as a proportion of total city space	Part of goal 11
11	71	Percentage of urban solid waste regularly collected and well managed	Part of goal 11
12	73	Global Food Loss Index [or other indicator to be developed to track the share of food lost or wasted in the value chain after harvest]	Urban consumption and waste
13	77	Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.	Urban contribution to GHG emissions and measurement of clean air in urban areas
13	78	CO_2 intensity of new power generation capacity installed (gCO_2 per kWh), and of new cars (gCO_2/pkm) and trucks (gCO_2/tkm)	Urban contribution to GHG emissions and measurement of clean air in urban areas
16	88	Violent injuries and deaths per 100,000 population	Safety in urban areas
16	94	Perception of public sector corruption	Good governance in local government
17	96	Domestic revenues allocated to sustainable development as percent of GNI, by sector	Financial allocations towards sustainable development in urban areas

In addition, the following Complementary National Indicators relate to Sustainable Cities:

Indicator number	**Complementary National Indicator**
1.1.	Poverty gap ratio (MDG Indicator)
1.2.	Percentage of population using banking services (including mobile banking)
1.4.	[Disaster Risk Reduction Indicator] – to be developed
3.1.	Percentage of births attended by skilled health personnel (MDG Indicator)
3.8.	Condom use at last high-risk sex (MDG Indicator)
3.16.	Incidence and death rates associated with hepatitis
3.22.	Prevalence of insufficient physical activity
3.31.	Percentage of new health care facilities built in compliance with building codes and standards
3.33.	Ratio of health professionals to population (MDs, nurse midwives, nurses, community health workers, EmOC caregivers)

5.1.	Gender gap in wages, by sector of economic activity
5.3.	Percentage of women without incomes of their own
6.2.	Percentage of population with basic hand washing facilities with soap and water at home
6.3.	Proportion of the population connected to collective sewers or with on-site storage of all domestic wastewaters
6.4.	Percentage of pupils enrolled in primary schools and secondary schools providing basic drinking water, adequate sanitation, and adequate hygiene services.
6.5.	Percentage of beneficiaries using hospitals, health centers and clinics providing basic drinking water, adequate sanitation, and adequate hygiene
6.6.	Proportion of the flows of treated municipal wastewater that are directly and safely reused
6.8.	[Indicator on international cooperation and capacity building in water and sanitation-related activities] – to be developed
6.9.	[Indicator on participation of local communities for improving water and sanitation management] – to be developed
8.2.	Working poverty rate measured at $2 PPP per capita per day
8.3.	[Indicator of decent work] – to be developed
8.4.	Household income, including in-kind services (PPP, current US$)
8.9.	[Indicator on implementation of 10-year framework of programs on sustainable consumption and production] – to be developed
9.1.	Percentage of households with Internet, by type of service by urban/rural areas
9.2.	Employment in industry (% of total employment)
10.1.	Gini Coefficient
10.2.	Income/wage persistence (intergenerational socioeconomic mobility)
11.1.	Number of street intersections per square kilometer; raw materials within urban areas
11.2.	Existence and implementation of a national urban and human settlements policy framework
11.3.	Percentage of cities with more than 100,000 inhabitants that are implementing risk reduction and resilience strategies informed by accepted international frameworks (such as the forthcoming Hyogo-2 framework)
11.4.	Percentage of urban building codes stipulating either the use of local materials and/or new energy efficient technologies or with incentives for the same
11.5.	City biodiversity index (Singapore index)
12.1.	[Strategic environmental and social impact assessments required] – to be developed
12.3.	[Indicator on chemical pollution] – to be developed
12.4.	[CO_2 intensity of the building sector and of new buildings ($KgCO_2$/m2/year)]
13.1.	[Climate Change Action Index] – to be developed
14.3.	[Indicator on the implementation of spatial planning strategies for coastal and marine areas]– to be developed
15.6.	[Indicator on financial resources for biodiversity and ecosystems] – to be developed
16.1.	Percentage of women and men who report feeling safe walking alone at night in the city or area where they live

(n) Sustainable consumption and production

Sustainable consumption and production are important SDG priorities that have a dedicated goal (SDG 12), but also cut across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
2	15	Nitrogen use efficiency in food systems	Efficiency in agricultural inputs
2	16	[Crop water productivity (tons of harvested product per	Efficiency in agricultural inputs

		unit irrigation water)] – to be developed	
3	30	Current use of any tobacco product (age-standardized rate)	Healthy behaviors
3	24	Percent of population overweight and obese, including children under 5	Healthy behaviors
6	52	Proportion of total water resources used (MDG Indicator)	Efficiency in water usage
8	55	Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts	SEEA monitoring
11	68	[Ratio of land consumption rate to population growth rate, at comparable scale] – to be developed	Efficiency in land and resource usage
11	71	Percentage of urban solid waste regularly collected and well managed	Efficiency in disposal of solid waste
12	72	Disclosure of Natural Resource Rights Holdings	Part of goal 12
12	73	Global Food Loss Index [or other indicator to be developed to track the share of food lost or wasted in the value chain after harvest]	Part of goal 12
12	74	Consumption of ozone-depleting substances (MDG Indicator)	Part of goal 12
12	75	Aerosol optical depth (AOD)	Part of goal 12
12	76	[Share of companies valued at more than [$1 billion] that publish integrated monitoring] – to be developed	Part of goal 12

In addition, the following Complementary National Indicators relate to sustainable consumption and production:

Indicator number	**Complementary National Indicator**
2.6.	[Phosphorus use efficiency in food systems] – to be developed
3.19.	Harmful use of alcohol
6.6.	Proportion of the flows of treated municipal wastewater that are directly and safely reused
12.1.	[Strategic environmental and social impact assessments required] – to be developed
12.2.	[Does the legislative branch have any oversight role regarding contracts and licenses in the oil, gas and mining sector? (Existence and enforcement of legislative framework)] -to be developed
12.3.	[Indicator on chemical pollution] – to be developed
12.4.	[CO_2 intensity of the building sector and of new buildings ($KgCO_2$/m2/year)]
12.5.	[Indicator on policies for sustainable tourism] – to be developed
14.5.	Proportion of fish stocks within safe biological limits (MDG Indicator)

(o) Sustainable energy for all

Sustainable energy for all is an important SDG priority that has a dedicated goal (SDG 7), a strong link to goal 13, and that cuts across many of the SDGs:

Goal	**Indicator number**	**Global Monitoring Indicator**	**Link to cross-cutting**
1	3	Multidimensional Poverty Index	Access to clean cooking fuel and reliable electricity included
7	50	Share of the population using modern cooking solutions, by urban/rural	Part of goal 7
7	51	Share of the population using reliable electricity, by	Part of goal 7

		urban/rural	
7	52	Implicit incentives for low-carbon energy in the electricity sector (measured as US$/MWh or US$ per ton avoided CO_2)	Part of goal 7
7	53	Rate of primary energy intensity improvement	Part of goal 7
9	59	Mobile broadband subscriptions per 100 inhabitants, by urban/rural	Access to reliable broadband
9	62	Total energy and industry-related GHG emissions by gas and sector, expressed as production and demand-based emissions (tCO_2e).	GHG emissions
13	78	CO_2 intensity of new power generation capacity installed (gCO_2 per kWh), and of new cars (gCO_2/pkm) and trucks (gCO_2/tkm)	Transition to low-carbon energy

In addition, the following Complementary National Indicators relate to sustainable energy for all:

Indicator number	Complementary National Indicator
7.1.	Primary energy by type
7.2.	Fossil fuel subsidies ($ or %GNI)
7.3.	Share of energy from renewables
9.1.	Percentage of households with Internet, by type of service by urban/rural areas

(p) Sustainable land use, forests and other terrestrial ecosystems

Sustainable land use, forests and other terrestrial ecosystems are important SDG priorities that have a dedicated goal (SDG 15), but cut across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
1	5	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.	Access to land, land tenure protected
2	13	Nitrogen use efficiency in food systems	Impacts of land used for agriculture
2	16	[Crop water productivity (tons of harvested product per unit irrigation water)] – to be developed	Impacts of agriculture on other ecosystems
6	48	[Indicator on water resource management] – to be developed	Sustainable water use
13	79	Net GHG emissions in the Agriculture, Forest and other Land Use (AFOLU) sector (tCO_2e)	GHG emissions from forest and other land use
15	83	Annual change in forest area and land under cultivation (modified MDG Indicator)	Part of goal 15
15	84	Area of forest under sustainable forest management as a percent of forest area	Part of goal 15
15	85	Annual change in degraded or desertified arable land (% or ha)	Land degradation and desertification
15	86	Red List Index	Part of goal 15
15	87	Protected areas overlay with biodiversity	Part of goal 15

In addition, the following Complementary National Indicators relate to sustainable land use, forests and other terrestrial ecosystems:

Indicator number	Complementary National Indicator
2.6.	[Phosphorus use efficiency in food systems] – to be developed
6.3.	Proportion of the population connected to collective sewers or with on-site storage of all domestic wastewaters
6.7.	[Monitoring of international river shed authorities on transboundary river-shed management] – to be developed
11.5.	City biodiversity index (Singapore index)
12.1.	Strategic environmental and social impact assessments required] – to be developed
12.3.	[Indicator on chemical pollution] – to be developed
12.5.	[Indicator on policies for sustainable tourism] – to be developed
13.2.	GHG emissions intensity of areas under forest management ($GtCO_2e$ / ha)
15.1.	Improved tenure security and governance of forests
15.2.	[Indicator on the conservation of mountain ecosystems] – to be developed
15.3.	Vitality Index of Traditional Environmental Knowledge
15.4.	[Indicator on access to genetic resources] – to be developed
15.5.	Abundance of invasive alien species
15.6.	[Indicator on financial resources for biodiversity and ecosystems] – to be developed
15.7.	[Indicator on financial resources for sustainable forest management] – to be developed
15.8.	[Indicator on global support to combat poaching and trafficking of protected species] – to be developed
15.9.	Living Planet Index

(q) Sustainable management of oceans and coastal areas

Sustainable management of oceans and coastal areas are important SDG priorities that have a dedicated goal (SDG 14), but cut across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
2	15	Nitrogen use efficiency in food systems	Efficiency in agricultural inputs
6	51	Percentage of wastewater flows treated to national standards [and reused] – to be developed	Water pollution
6	47	Proportion of total water resources used (MDG Indicator)	Sustainable water use
13	77	Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.	Ocean acidification
13	78	CO_2 intensity of new power generation capacity installed (gCO_2 per kWh), and of new cars (gCO_2/pkm) and trucks (gCO_2/tkm)	Ocean acidification
13	79	Net GHG emissions in the Agriculture, Forest and other Land Use (AFOLU) sector (tCO_2e)	Ocean acidification
14	81	Share of coastal and marine areas that are protected	Part of goal 14
14	82	Percentage of fish tonnage landed within Maximum Sustainable Yield (MSY)	Part of goal 14

15	83	Annual change in forest area and land under cultivation (modified MDG Indicator)	Mangroves area
15	86	Red List Index	Biodiversity of the marine ecosystem
15	87	Protected areas overlay with biodiversity	Biodiversity of the marine ecosystem

In addition, the following Complementary National Indicators relate to sustainable management of oceans and coastal areas:

Indicator number	Complementary National Indicator
6.3.	Proportion of the population connected to collective sewers or with on-site storage of all domestic wastewaters
6.7.	[Monitoring of international river shed authorities on transboundary river-shed management] – to be developed
12.3.	[Indicator on chemical pollution] – to be developed
13.1.	[Climate Change Action Indicator] – to be developed
13.2.	GHG emissions intensity of areas under forest management ($GtCO_2e$ / ha)
14.1.	[Eutrophication of major estuaries] – to be developed
14.2.	Ocean acidity (measured as surface pH)
14.3.	[Indicator on the implementation of spatial planning strategies for coastal and marine areas]– to be developed
14.4.	Area of coral reef ecosystems and percentage live cover
14.5.	Proportion of fish stocks within safe biological limits (MDG Indicator)
14.6.	Does flag state require International Maritime Organization (IMO) numbers and transponders for all fishing vessels more than 24 meters or 100 tons?
14.7.	Has Regional Fisheries Management Organization (RFMO) established satellite-monitoring program?
14.8.	[Use of destructive fishing techniques] – to be developed
14.9.	[Indicator on access to marine resources for small-scale artisanal fishers] – to be developed
14.10.	[Indicator on transferring marine technology] – to be developed

(r) Water and sanitation

Water and sanitation are important SDG priorities that have a dedicated goal (SDG 6), but cut across many of the SDGs:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
1	3	Multidimensional Poverty Index	Includes access to safe drinking water and sanitation
2	15	Nitrogen use efficiency in food systems	Pollution
2	16	[Crop water productivity (tons of harvested product per unit irrigation water)] – to be developed	Water consumption
6	45	Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)	Part of goal 6
6	46	Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)	Part of goal 6
6	47	Percentage of wastewater flows treated to national standards [and reused] – to be developed	Part of goal 6
11	66	Percentage of urban population living in slums or informal settlements (MDG Indicator)	Includes access to safe drinking water and sanitation

In addition, the following Complementary National Indicators relate to water and sanitation:

Indicator number	Complementary National Indicator
2.11.	[Indicator on irrigation access gap] – to be developed
6.1.	Percentage of population practicing open defecation
6.2.	Percentage of population with basic hand washing facilities with soap and water at home
6.3.	Proportion of the population connected to collective sewers or with on-site storage of all domestic wastewaters
6.4.	Percentage of pupils enrolled in primary schools and secondary schools providing basic drinking water, adequate sanitation, and adequate hygiene services
6.5.	Percentage of beneficiaries using hospitals, health centers and clinics providing basic drinking water, adequate sanitation, and adequate hygiene
6.6.	Proportion of the flows of treated municipal wastewater that are directly and safely reused
6.8.	[Indicator on international cooperation and capacity building in water and sanitation-related activities] – to be developed
6.9.	[Indicator on participation of local communities for improving water and sanitation management] – to be developed

(s) Wellbeing

Improving overall wellbeing is one of the underlying purposes of the SDGs. Based on the OECD Better Life Index, the following 11 topics are deemed essential in the areas of material living conditions and quality of life: housing, income, jobs, community, education, environment, civic engagement, health, life satisfaction, safety, and work-life balance. [33] Corresponding indicators exist across the SDG indicator framework:

Goal	Indicator number	Global Monitoring Indicator	Link to cross-cutting
1	1	Proportion of population below $1.25 (PPP) per day (MDG Indicator)	Income
1	2	Proportion of population living below national poverty line, by urban/rural (modified MDG Indicator)	Income
1	3	Multidimensional Poverty Index	Extreme deprivation in all topics
1	5	Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected	Housing
3	23	Probability of dying between exact ages 30 and 70 from any of cardiovascular disease, cancer, diabetes, chronic respiratory disease, [or suicide]	Health
3	30	Current use of any tobacco product (age-standardized rate)	Health
4	33	Primary completion rates for girls and boys	Education
4	34	[Percentage of girls and boys who master a broad range	Education

[33] See http://www.oecdbetterlifeindex.org/

		of foundational skills, including in literacy and mathematics by the end of the primary school cycle (based on credibly established national benchmarks)] – to be developed	
4	35	Secondary completion rates for girls and boys	Education
4	36	[Percentage of girls and boys who achieve proficiency across a broad range of learning outcomes, including in literacy and in mathematics by end of the secondary schooling cycle (based on credibly established national benchmarks)] – to be developed	Education
4	37	Tertiary enrollment rates for women and men	Education
5	42	Average number of hours spent on paid and unpaid work combined (total work burden), by sex	Work-life balance
5	43	Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)	Civic engagement
6	45	Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)	Health
6	46	Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)	Health
8	54	GNI per capita (PPP, current US$ Atlas method)	Income
8	56	Youth employment rate, by formal and informal sector	Jobs
10	64	[Indicator on inequality at top end of income distribution: GNI share of richest 10% or Palma ratio]	Income
10	65	Percentage of households with incomes below 50% of median income ("relative poverty")	Income
11	69	Mean urban air pollution of particulate matter (PM10 and PM2.5)	Air quality and health
16	88	Violent injuries and deaths per 100,000 population	Safety
17	100	Evaluative Wellbeing and Positive Mood Affect	Life satisfaction

In addition, the following Complementary National Indicators relate to wellbeing:

Indicator number	**Complementary National Indicator**
3.19.	Harmful use of alcohol
3.20.	Healthy life expectancy at birth
4.1.	[Percentage of girls and boys who acquire skills and values needed for global citizenship and sustainable development (national benchmarks to be developed) by the end of lower secondary] – to be developed
4.4.	[Percentage of adolescents (15-19 years) with access to school-to-work programs] – to be developed
4.5.	Literacy rate of 15-24 year-olds, women and men (MDG Indicator)
4.6.	[Percentage of young adults (18-24 years) with access to a learning program] – to be developed
8.1.	Growth rate of GDP per person employed (MDG Indicator)
8.4.	Household income, including in-kind services (PPP, current US$)
8.5.	Employment to population ratio (EPR) by gender and age group (15–64)
8.6.	Share of informal employment in total employment
8.8.	Percentage of young people not in education, employment or training (NEET)
12.5.	[Indicator on policies for sustainable tourism] – to be developed
16.1.	Percentage of women and men who report feeling safe walking alone at night in the city or area

	where they live
16.2.	Compliance with recommendations from the Universal Periodic Review and UN Treaties

Annex 2: Moving Towards Annual Monitoring

Timeliness is crucial for data to be a useful management and policy tool, so SDG monitoring should operate on an annual cycle. However, annual monitoring on progress does not necessarily mean new data being produced every year. For a number of indicators this may be impossible or inadvisable.[34] In such cases it may be sufficient to produce data every two to three years and fill the gaps with robust projections, extrapolations, or modeled estimates. In this way, almost all proposed Global Monitoring Indicators can be reported on an annual basis.

To understand the feasibility and implications of annual monitoring, we have analyzed the main types of data that need to be collected for Global Monitoring Indicators. Additional details on the type of information required for each indicator are provided below in Annex 5 (page 103). Data for monitoring the SDGs will come predominantly from administrative data, surveys (including household and labor force surveys), as well as direct monitoring from organizations. Below we discuss the requirements for and feasibility of annual monitoring for these three types of data.

(i) Household surveys and other survey instruments

Nearly every country in the world runs household surveys. They are an important source of socio-economic data, particularly in countries where administrative data systems are underdeveloped or unreliable or when seeking to measure human behaviors and attitudinal change. Similarly, labor force, business, and other surveys provide vital socio-economic information.

In recent years, many countries have demonstrated how national statistical systems can produce high-quality annual survey data. At least 60 countries conduct annual official national household surveys with 28 developing countries monitoring annually on extreme poverty.[35] Countries such as Brazil, Columbia, Ecuador, Indonesia, and the Philippines have become well known for their innovative and effective statistical systems. Ecuador and Indonesia report select poverty statistics every trimester and quarter, respectively. In a short period of time, the Philippines has integrated their data monitoring and now provide highly disaggregated and cross-referenced annual statistics on key economic, social, and environmental variables, down to the district level.

An important caveat is capacity; in many countries lack of capacity and resources has made such frequent surveys impossible and/or has compromised their quality. Interim solutions often involve rotating modules and/or conducting more comprehensive and larger sample surveys intermittently, with the assistance of international programs such as Demographic and Health Surveys (DHS) or the Multiple Indicator Cluster Surveys (MICS). Furthermore, not every indicator compiled through household

[34] Indicators unsuited to annual production are indicators that (i) exhibit year-on-year variation that is significantly smaller than the error margin, (ii) require a very large number of observations to be computed, (iii) may be affected or compromised by year on year monitoring, such as attitudinal and behavior change.[34] A preliminary assessment suggests that this applies to four of the Global Indicators featured in this report: life expectancy, maternal mortality rate, fertility rate, and prevalence of non-communicable diseases.

[35] Alkire (2014).

surveys requires year-on-year monitoring, as highlighted above. However biennially- or triennially-collected survey data, combined with careful projections between data points, provides an effective methodology for estimating annual progress.

International household survey programs are crucial for the collection of high-quality socio-economic data. The most important ones include Demographic and Health Surveys (DHS), Living Standard Measurement Surveys (LSMS), and the Multiple Indicator Cluster Surveys (MICS). The DHS and MICS programs also have the advantage of producing high-quality data that is based on common survey frames and harmonized contents, and are therefore comparable across data sets and countries. MICS, for example, provides data for over 100 indicators, including three-quarters of the data for the health-related MDG Indicators, disaggregated by residence, sex, wealth, education, age, ethnicity, and other stratifiers. Historically there have been long lags between the collection, analysis, and publication of international survey data, but greater collaboration between these survey programs and a shift towards harmonized methodologies is helping to minimizing the gaps between survey rounds. There have also been considerable improvements in the time between data production and monitoring, which has reduced from up to a year to just a few months.

Another innovative approach being used by several countries to increase the frequency of household surveys are continuous surveys.[36] Some national continuous household surveys, such as in Ecuador, Indonesia, and Brazil, collect a nationally representative sample size each year. However, to achieve the desired level of disaggregation for the SDGs, larger samples are likely to be required. The continuous DHS surveys in Peru and Senegal collect data on one fifth of the normal sample size each year, which can be used to provide annual reports.[37] Such annual data will have a higher margin of error than household survey data provided every five years. However, as the experience with the use of GDP data demonstrates, this should not be a problem: many countries issue quarterly and even monthly GDP data within a short period of time. Users demand such data, even though short-term GDP estimates are provisional and frequently subject to revisions before final annual GDP numbers are released. Just like users of GDP data have become accustomed to such revisions for a greater periodicity of monitoring, users of socio-economic data from continuous household surveys will use provisional annual data, updated and verified as and when larger survey programs are run. In other cases, such as in Ecuador and Indonesia, national estimates are produced multiple times per year, and periods are combined to create subnational disaggregation each year. In still others, such as the World Bank Program for the Improvement of Surveys and the Measurement of Living Conditions in Latin America and the Caribbean (MECOVI), national estimates are produced annually.

Other innovations of the DHS include the Key Indicator Survey (KIS), with shorter and simple questionnaires at a lower level of disaggregation, as well as an Interim DHS, which could both allow for annual or even higher than annual monitoring frequency.[38] However, unlike continuous surveys, neither KIS nor the Interim DHS have had much uptake.[39]

[36] DHS "Continuous Demographic and Health Survey" information sheet available at http://dhsprogram.com/pubs/pdf/DM34/DM34.pdf

[37] On Brazil see M Quintslr and E Hypólito (2010). *Development of an Integrated System of Household Surveys: The Brazilian Experience*. Online at http://www.ibge.gov.br/home/estatistica/indicadores/sipd/Development.pdf. Other countries see Alkire (2014).

[38] DHS KIS website: http://dhsprogram.com/What-We-Do/Survey-Types/KIS.cfm

[39] Alkire (2014).

Alongside more frequent survey data is the requirement of more timely data entry, cleaning, and analysis. Computer-assisted technologies and standardized indicator definitions and computations have the power to reduce this lag tremendously in a short period.

Finally, generating high-quality and high-frequency survey data on the SDGs should also take advantage of telecommunications and satellite imagery, with systematic georeferencing of all data, improved cross-referencing of survey frames, and tablet-based or mobile phone-based surveys. All of these innovations are available, but some are slow to reach scale, partly because there is not enough political attention and support devoted to them.

In summary, examples for national and international survey programs that yield high-quality frequent data are plentiful. By using the full advantages of modern technologies, these programs can continue to provide cost-effective data. The SDGs will provide an important impetus to drive available innovations into all major survey programs, thereby filling a critical gap in today's MDG data.

(ii) Administrative data, civil registration and vital statistics

Data for many Global Monitoring Indicators comes from administrative systems, usually collected by line ministries and then compiled by the NSO. Examples include school enrolment and completion rates, access to health facilities, data on agricultural production and input use, or spending on official development assistance. Similarly, civil registration systems and vital statistics are critical for recording births, deaths, and other data related to vital statistics.

To generate high-quality annual data, many countries will need to strengthen their systems for processing administrative data. Since administrative data is collected on a continuous basis there are no barriers to annual monitoring of administrative data. Annual monitoring is thus primarily a question of shortening processing and publication times, improving the quality and reliability of administrative data, and harmonizing for global monitoring.

The quality of administrative data can be poor because the underlying data can be easily manipulated. For example, line ministries and local authorities may have an incentive to overstate progress and understate challenges in order to meet performance targets established by the central government. The only ways to improve the quality and reliability of administrative data is to strengthen the independence and impartiality of NSOs, their capacity to collect and cross-check data (often against household surveys), and to ensure public access to data along the full production chain. In this way, discrepancies can be spotted early and addressed.

In some instances, administrative data needs to be collected specifically for monitoring on a periodic basis. Examples are assessments of fish stocks or national forest inventories, which are expensive and time consuming (national forest inventories are run only once every 5-10 years).[40] In such cases, alternatives should be sought, such as remote sensing of forest coverage or other proxy indicators.

(iii) International monitoring

[40] United Nations (2003).

Some 13 Global Monitoring Indicators proposed in this report are reported directly through international organizations or other mechanisms. Examples include the Corruption Perceptions Index (prepared by Transparency International) and the Ocean Health Index (prepared by the Ocean Health Index Partnership), which are both reported annually. For other indicators, modest efforts to increase monitoring frequency are needed. For example, Indicator 60 on the fundamental ILO labor standards would be based on the country reports, which are currently mandatory only every two years.

Some of the indicators proposed in this report will require an agreed international arrangement to collect, process, and publish the data. Our analysis suggests that each of the proposed indicators that would be reported internationally can be published annually. The proposed lead organizations are described in Table 1 and throughout Annex 5 (page 103).

Annex 3: Disaggregating Indicators for the SDGs

Our poor ability to understand how people of different ages, capabilities or income levels have been faring under the MDGs has hampered the design and implementation of strategies to tackle discrimination and ensure achievement of the goals.[41] A number of studies have now demonstrated that progress has often been made amongst those groups that are easiest to reach or whose situations are the easiest to ameliorate, leaving many of the poorest and most vulnerable behind.[42] Others have pinpointed cases of perverse incentives where only the poorest benefitted most.[43] For this reason, it is very important that the indicators for Sustainable Development Goals and Targets can be disaggregated.

The UN Secretary General's Synthesis Report, *The Road to Dignity by 2030*, and prior reports have proposed that the SDGs should "leave no one behind" and that targets should only be considered achieved if they are have been met for all relevant income and social groups. The principle has since been widely accepted and reiterated in numerous other global reports, albeit often using slightly different terminology.[44]

To ensure countries fulfill the commitment to leave no one behind, they will need to:

(i) identify levels of disaggregation (stratification variables) for relevant SDG indicators, and
(ii) identify a set of indicators that specifically reflect inequalities that are not captured by disaggregation of other indicators.

Regarding the latter, the SDSN proposes to include indicators on relative poverty as well as the income share of the top decile (or a ratio of the top decile to the bottom 4 deciles) to measure income inequalities within countries. Similarly, a number of dedicated indicators have been proposed to capture gender inequality and other inequalities under Goals 5 and 10.

The identification of stratification variables can pose major analytical and operational challenges. For example, data collected through survey instruments or other tools must collect all stratification variables for each household. In practice, the number of questions that can be asked in one survey and the need to maintain confidentiality for the collection of sensitive data (e.g. on ethnicity) may constrain opportunities for stratifying socioeconomic and other data. Similar constraints may apply on the monitoring side due to the limited capacities of many national statistical offices.

---

[41] See i) Melamed, C and Samman, E (2013), *Equity, inequality and human development in a Post-2015 Framework*. UNDP HDR Office: New York. And ii) Watkins, K (2013). *Leaving no one behind: an equity agenda for the post-2015 goals*. ODI: London.

[42] See i) Save the Children (2010). *A Fair Chance At Life: Why Equity Matters for Child Mortality*. Save the Children: London, UK. ii) Wirth, ME et al (2006). "Setting the stage for equity-sensitive monitoring of the maternal and child health MDGs." *Bulletin of the World Health Organization* 84 (7), p 519–27. And iii) Borooah, VK (2004). Gender bias among children in India in their diet and immunisation against disease." *Social Science & Medicine* 58:9, p 1719–31.

[43] In an OPHI study, in nine out of 34 countries the poorest region reduced the Multidimensional Poverty Index the fastest; in eight countries all subnational regions reduced poverty, and in Kenya the poorest ethnic group reduced multidimensional poverty the fastest.

[44] See i) High Level Panel of Eminent Persons on the Post-2015 Development Agenda (2013). *A New Global Partnership: Eradicate Poverty and Transform Economies*. ii) SDSN (2013). *Action Agenda for Sustainable Development*. And iii) UN Secretary General (2013). *A life of dignity for all: accelerating progress towards the Millennium Development Goals and advancing the United Nations development agenda beyond 2015*.

Given the importance of disaggregated data, the SDSN recommends that relevant SDG indicators be disaggregated according the following broad dimensions: [45]

- Sex and gender,[46]
- Age,[47]
- Income quintiles/deciles,
- Disability,
- Ethnicity and indigenous status,
- Economic activity,[48]
- Location or spatial disaggregation (e.g. by metropolitan areas, urban/rural, or districts),
- Migrant status.

Disaggregation according to these dimensions would be relevant for many of the 100 Global Monitoring Indicators proposed by SDSN (approximately 40%), as follows:

Table 3: Proposed List of Indicators which can be Disaggregated

Goal	Proposed indicators which could be disaggregated
1	1-7
2	8-12
3	ALL
4	ALL
5	ALL
6	45-47
7	50, 51
8	56
9	58, 59
10	64, 65
11	(6) 66, 67
12	n/a
13	n/a
14	n/a
15	n/a
16	88, 89, 92
17	100

Not all stratification variables would be relevant for every indicator highlighted here. For example, indicator 7 (Total Fertility Rate) is a measure of the average number of children born to a woman over

[45] These dimensions are based on the key income and social groupings identified in the report of the High Level Panel of Eminent Persons on the Post-2015 Development Agenda. Key vulnerable groupings, discussed in Annex IV, are captured under the aggregated variables proposed above. HLP (2013) *A New Global Partnership: Eradicate Poverty and Transform Economies.*

[46] For a internationally accepted definition of the distinction between sex and gender, see www.who.int/gender/whatisgender/en/

[47] We recommend that the disaggregation by age should at a minimum be by the following set of groups: 0-2 years (infants), 2-5 years (pre-school age), 5-14 years (school age), 15-49 years (childbearing age), 15-64 years (working ages) and 65 years and older (elderly persons).

[48] For example, water use should be accounted for by economic activity using ISIC Rev 4.

her lifetime so disaggregation by sex is unnecessary. Similarly, many of the indicators under Goals 3 and 5 specifically relate to women and children.

In general terms, data on health, education and select aspects of wellbeing can already be disaggregated by sex, age, location, and income (by quintile/decile) in most countries using international household surveys such as the Demographic Health Surveys (DHS), Multi-Indicator Cluster surveys (MICS), and Living Standards Measurement Study (LSMS). Information can also be gleaned from national census and vital registration information. However, data collection is patchy (DHS is only collected every 5.88 years[49]) and often data produced by these different surveys is non-comparable.

Substantive investments in national statistical capacity will therefore be required to ensure standardized collection of data relating to all of the above-defined dimensions, including investments in geo-spatial data infrastructures. Meanwhile, internationally compiled household surveys need to bolster their collection of data relating to disability and ethnicity and to improve the quality and comparability of spatially disaggregated data.[50]

[49] According to Alkire (2014), "DHS have been updated every 5.88 years across all countries that have ever updated them (across a total of 155 'gaps' between DHS surveys). Dropping all incidents where 10 or more years have passed between DHS surveys, that average falls only to 5.31 years."

[50] UNSD advises that the "required disaggregation of statistical indicators by age, gender, geography, income, disability etc. is currently not available for many statistical areas. However, in many administrative data sources, such as vital registration, some of the parameters such as age and gender are part of the original microdata sets. Also location information may frequently be either part of the dataset or its metadata. On the other hand, such parameters can be easily included in surveys, although representativeness in respect to them will require increased sample sizes (thereby significantly increasing the costs). In particular the data collection for countries in special situations and countries affected by conflict will require strong efforts as the abovementioned data sources are frequently not available." See UNSD, (2014), footnote 3.

Annex 4: An Illustration of SDG Monitoring Levels

As described in sections II and III of the report, SDG monitoring will occur at the national, regional, and global levels, as well as by thematic communities. Figure 2 (page 7) illustrates schematically how indicators for the four levels of SDG monitoring relate to one another. This Annex provides an illustrative example for how SDG monitoring might be organized in support of the proposed SDG 14 "Conserve and sustainably use the oceans, seas and marine resources for sustainable development."

Table 4, below, lists indicators related to the proposed SDG 14 for three monitoring levels: national, global, and thematic. Regional monitoring will cover an intermediate range of national and global indicators that each region will need to define. Indicators mentioned in this report are identified by their indicator number in column 2. The table underscores the very large number of national indicators that countries may consider in tracking the ocean goal. Other SDGs will exhibit similarly large numbers of potential national indicators, which are only partially covered in this report, which focuses primarily on the Global Monitoring Indicators.

The Global Monitoring Indicators are a subset of national indicators that all countries would report on, as appropriate. Landlocked countries, for example, would not report on many of the Global Monitoring Indicators related to the proposed SDG 14 ("Conserve and sustainably use the oceans, seas and marine resources for sustainable development"). For many maritime countries, particularly those with significant fishing activities, these global indicators may be insufficient. They should rely on additional national indicators.

The use of thematic indicators can help support efforts to continue expanding our knowledge so that new indicators, and better methods for monitoring them, can be developed. A good example is the Ocean Health Index. It measures 10 aspects of marine ecosystems and their use by humans, including food provision, carbon storage, coastal livelihoods and economies, and biodiversity, among others, with each aspect evaluated according to present status, current trends, existing pressures, and resilience.[51] The Index can also be calculated for each country using assessments of local expert communities to determine appropriate reference points, objectives and measurements options.

Table 4: Illustrative Organization of National, Regional, Global, and Thematic Indicators for SDG 14

Goal #	Indicator #	Topic measured	Monitoring level	Indicator
12	12.3	Pollution	National	[Indicator on chemical pollution] – to be developed
13	13.1.	Ocean acidification	National	[Climate Change Action Indicator] – to be developed
13	13.2.	Ocean acidification	National	GHG emissions intensity of areas under forest management ($GtCO_2e$ / ha)
14	14.1.	Pollution	National	Eutrophication of major estuaries

[51] Halpern, B et al (2012). "An index to assess the health and benefits of the global ocean." *Nature* 488, 615–620. Available at http://www.nature.com/nature/journal/v488/n7413/full/nature11397.html

Goal #	Indicator #	Topic measured	Monitoring level	Indicator
14		Pollution	National	Number of national and regional agreements regulating and setting standards to prevent pollution
14		Pollution	National	Has country ratified the Minamata Convention on mercury?
14		Pollution	National	Does country have taxes and restrictions, including bans, on certain plastics uses?
14		Pollution	National	Increase in the number of and improvements to ports' waste disposal facilities
14	14.4	Overfishing	National	Proportion of fish stocks within safe biological limits (MDG Indicator)
14		Overfishing	National	Percentage of total subsidies reduced for distant water/high seas fishing fleets
14	14.8	Overfishing	National	[Use of destructive fishing techniques] – to be developed
14	14.2	Sustainable Management	National	[Indicator on the implementation of spatial planning strategies for coastal and marine areas]– to be developed
14	14.9	Sustainable Management	National	[Indicator on access to marine resources for small-scale artisanal fishers] – to be developed
14	15.5	Biodiversity loss	National	Abundance of invasive alien species
14		Protection	National	Percentage of bottom fisheries operating pursuant to EIAs
15	15.8	Illegal, unreported and unregulated (IUU) fishing	National	[Indicator on global support to combat poaching and trafficking of protected species] – to be developed
14	14.6	Illegal, unreported and unregulated (IUU) fishing	National	Number of flag States and RFMOs requiring IMO numbers and transponders for all fishing vessels more htan 24meters or 100 tons
14	14.1	Scientific Cooperation	National	[Indicator on transferring marine technology] – to be developed
14	14.12	Protection	National	Area of mangrove deforestation (hectares and as % of total mangrove area)
14		Overfishing	National	Maximum sustainable yield
14		Protection	National	Number of RFMOs effectively implementing the ecosystem approach and the precautionary principle
14	14.7	Illegal, unreported and unregulated (IUU) fishing	National	Number of RFMOs having established satellite monitoring programs
14		Illegal, unreported and unregulated (IUU) fishing	National	Percentage of high seas covered by RFMOs
14		Illegal, unreported and unregulated (IUU) fishing	National	Percentage of high-seas and straddling stocks under management by RFMOs
14		Overfishing	National	Number of data-deficient stocks being fished
14		Resilience	National	Mangrove area
14		Resilience	National	Mangrove species composition and distribution

Goal #	Indicator #	Topic measured	Monitoring level	Indicator
14		Fisheries	National	Fish food supply (thousand tons in live weight equivalent)
14		Economic contribution	National	Per Capita Supply (kilograms)
14		Nutrition	National	Fish Proteins (grams per capita per day)
14		Fisheries	National	Major species groups in capture production
14		Economic contribution	National	Import and export value of fish and fishery products
14		Nutrition	National	Animal protein intake derived from fish and fish products
14		Economic contribution	National	Number of people are involved in the fishing sector (fishing, gathering, processing and marketing)
14		Economic contribution	National	Share of gross domestic product (GDP) derived from fishing, sealing and whaling and fish farming
14		Resilience	National	Mangrove species composition and distribution
14		Economic contribution	National	People employed annually in commercial and subsistence fishing
14		Economic contribution	National	Artisanal fishing catch
14		Biodiversity loss	National	Genetic escapes
2	12	Pollution	Global	Nitrogen use efficiency in food systems
6	51	Pollution	Global	Percentage of wastewater flows from point sources treated to national standards, by municipal and industrial source
6	52	Sustainable Management	Global	Proportion of total water resources used (MDG Indicator)
13	78	Ocean acidification	Global	Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050.
13	79	Ocean acidification	Global	CO_2 intensity of new power generation capacity installed (gCO_2 per kWh), and of new cars (gCO_2/pkm) and trucks (gCO_2/tkm
13	80	Ocean acidification	Global	Net GHG emissions in the Agriculture, Forest and other Land Use (AFOLU) sector (tCO_2e)
14	98	Sustainable Management	Global	Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Monitoring Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), and World Trade Organization (WTO) [other organizations to be added] on the relationship between international rules and the SDGs and the implementation of relevant SDG targets
14	65	Scientific Cooperation	Global	[Researchers and technicians in R&D (per million people)]
15	87	Biodiversity loss	Global	Protected areas overlay with biodiversity
15	86	Biodiversity loss	Global	Red List Index

Goal #	Indicator #	Topic measured	Monitoring level	Indicator
15	84	Resilience	Global	Annual change in forest area and land under cultivation (modified MDG Indicator)
14	81	Protection	Global	Share of coastal and marine areas that are protected (at least 10% by 2020)
14	82	Overfishing	Global	Percentage of fish tonnage landed within Maximum Sustainable Yield (MSY)
14	14.2	Ocean acidification	Thematic	Ocean acidity (measured as pH)
14		Overfishing	Thematic	Percentage of commercial fish stocks operating under science-based management plans
14		Overfishing	Thematic	Fleet size and capacity of flag States
14		Overfishing	Thematic	Number of flag States freezing, capping or reducing fleet size
		Sustainable Management	Thematic	Number of countries party to the UN Fish Stocks Agreement?
14		Sustainable Management	Thematic	Productivity of aquaculture in utilizing natural resources (land, water and wild stock)
14	14.3	Biodiversity loss	Thematic	Area of coral reef ecosystems and percentage live cover
14		Biodiversity loss	Thematic	Proportion of threatened marine species effectively protected at the national, regional or international levels
14		Protection	Thematic	International Seabed Authority requires Environmental Impact Assessments (EIAs) prior to leasing for exploitation
14		Ocean acidification	Thematic	Dissolved CO_2 (partial pressure)
14		Ocean acidification	Thematic	Aragonite saturation at ocean surface
14		Resilience	Thematic	Sea surface temperature
14		Illegal, unreported and unregulated (IUU) fishing	Thematic	Number of ratifications of the UN FAO Port States Measures Agreement (PSMA) and number of port States with supporting domestic implementing legislation
14	14.5	Sustainable Management	Thematic	Percent of fisheries with a sustainable certification
14		Ocean health	Thematic	Ocean Health Index
14		Sustainable Management	Thematic	Marine Trophic Index
14		Sustainable Management	Thematic	Cumulative Human Impacts on Marine Ecosystems
14		Economic contribution	Thematic	Global Capture Production

Annex 5: Detailed Description of Proposed Indicators and Monitoring Framework

This annex provides a description of all the Indicators listed in Table 1 and Table 2. For each Global Monitoring Indicator, we provide the rationale and definition, suggest potential levels of disaggregation, and discuss some of the limitations. The Complementary National Indicators have brief definitions.

For each Global Monitoring Indicator we also include the primary data source, which is the preferred source of robust data for the indicator. However, this preferred data source is sometimes not available, particularly in many low-income countries with weak data collection systems. Where this is the case, we note alternative data sources for the indicator. Further, we identify one or more potential lead agencies that could be responsible for compiling the data at the international level.

We also include a preliminary assessment of data availability, which was conducted by the Friends of the Chair Group on Broader Measures of Progress in April 2014.[52] The assessment provides an initial, rough illustration of the current indicator and data availability, showing in which areas information is more readily available and where information is potentially sparse. Assessments are based on a limited number of countries, most of which are high-income. Indicators are ranked from A-C or are listed as "to be determined":

- "A" signifies that 80% of countries have at least 2 data points / the indicator is feasible to measure;
- "B" signifies that 50-80% of countries have at least 2 data points / the indicator will be feasible with some effort;
- "C" signifies that less than 50% of countries have at least 2 data points / the indicator will be very difficult or infeasible within the time frame.

Moving forward, the UNSD has recommended that a tiered indicator system be developed, through an interactive process between responsible agencies, national statistics offices, and other key players. Tiering should take into account the detailed recommendations set out in the Compendium of Statistical Notes, prepared by the Friends of the Chair Group.

The classification would have three tiers:

1. Indicator is conceptually clear, with an agreed international definition and data are regularly produced by countries.
2. Indicator is conceptually clear, with an agreed international definition, but data are not yet regularly produced by countries.
3. Indicator for which international standards (concepts and definitions) still need to be developed.

Such a tiered system is useful and necessary, especially when developed with relevant inputs from key stakeholders. We welcome inputs to help make these determinations.

[52] The Friends of the Chair Group (FOC) on broader measures of progress was established by the United Nations Statistical Commission as a response to the request of the Rio+20 conference to launch a program of work on broader measures of progress to complement GDP in order to better inform policy decisions. See their website for the details of their evaluations of the SDSN proposed indicators: http://unstats.un.org/unsd/broaderprogress/work.html

Goal 1. End poverty in all its forms everywhere

Potential and Illustrative Global Monitoring Indicators:

Indicator 1: Proportion of population below $1.25 (PPP) per day (MDG Indicator)

Rationale and definition: This MDG Indicator is defined as the percentage of the population living below the international poverty line, where the average daily consumption (or income) is less than $1.25 per person per day. The $1.25 threshold is a measure of extreme income poverty that allows comparisons to be made across countries when it is converted using purchasing power parity (PPP) exchange rates for consumption. In addition, poverty measures based on an international poverty line attempt to hold the real value of the poverty line constant over time, allowing for assessments of progress towards meeting the goal of eradicating extreme poverty.[53]

Disaggregation: By sex, age, disability, urban/rural, and other qualifiers. Of particular importance is to identify:
(i) the sex of the head of the household. Households headed by women may be more likely to experience extreme poverty.
(ii) the percentage of children (under 18) living in poverty. Children are generally overrepresented among the extremely poor, and are explicitly highlighted in OWG outcome document target 1.2.

Comments and limitations: The poverty rate has the drawback that it does not capture the depth of poverty; some people may be living just below the poverty line, while others are far below. To help capture disparities, data should as much as possible be disaggregated by sex, age, ethnicity, geography, and other attributes within a population. The SDSN also recommends an alternative indicator for extreme poverty in urban contexts, as the $1.25 poverty line is poorly adapted to urban environments where basic services (housing, water, energy, etc.) need to be purchased.
In addition, the extreme poverty line of $1.25/day is the current threshold, but it may evolve, in which case the indicator should be updated.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Household surveys, for example household budget surveys or other surveys covering income and expenditure.

Potential lead agency or agencies: World Bank.

[53] United Nations (2003).

Indicator 2: Proportion of population living below national poverty line, by urban/rural (modified MDG Indicator)

Rationale and definition: This modified MDG Indicator is defined as the percentage of the population living below the national poverty line, where the average daily consumption (or income) is less than a certain amount per person per day. These poverty thresholds are defined at the country level below which a person is deemed to be poor. The national poverty line should be differentiated for urban versus rural settings within the country to account for differences in cost of living.

Disaggregation: By sex, age, disability, urban/rural, and other qualifiers. Of particular importance is to identify
(i) the sex of the head of the household since households headed by women may be more likely to experience extreme poverty and
(ii) percentage of children (under 18) living in poverty as children are generally overrepresented among the extremely poor, and are explicitly highlighted in OWG outcome document target 1.2.

Comments and limitations: National poverty lines do not provide a uniform measure, so this indicator does not allow for direct comparison across countries.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Household surveys, for example household budget surveys or other surveys covering income and expenditure.

Potential lead agency or agencies: World Bank, UN DESA.

Indicator 3: Multidimensional Poverty Index

Rationale and definition: Multidimensional poverty assessments aim to measure the non-income based dimensions of poverty, to provide a more comprehensive assessment of the extent of poverty and deprivation. Several international multidimensional poverty tools exist, including the EU-2020 official poverty measure (combining income, work, and material deprivation), UNDP's MPI (a headline index summarizing the proportion of people in poverty and the intensity of their poverty, which breaks down by indicator), the "Bristol" methodology to measure multidimensional poverty of children, UNICEF's MODA (multidimensional poverty of children), and IFAD's MPAT (10 separate indicators).

The Multidimensional Poverty Index (MPI) is published by the UNDP's Human Development Report Office and tracks deprivation across three dimensions and 10 indicators: health (child mortality, nutrition), education (years of schooling, enrollment), and living standards (water, sanitation, electricity, cooking fuel, floor, assets).[54] It first identifies which of these 10 deprivations each household experiences, then identifies households as poor if they suffer deprivations across one -third or more of the weighted indicators.[55] Based on the Alkire Foster methodology, the MPI is created by multiplying

[54] UNDP (2013). *Human Development Report 2013: The Rise of the South: Human Progress in a Diverse World*. New York, NY: UNDP.

[55] UNDP also classifies those having deprivations in 1/5 to 1/3 as vulnerable, and those deprived in ½ or more as in severe poverty.

together two numbers: the percentage of the population who are poor; and the average percentage of the weighted indicators that poor people experience (intensity). Including intensity provides an incentive to reach the poorest of the poor. The MPI reflects those in acute poverty; alternative cutoffs are used to report those who are vulnerable and those in severe poverty.

To ensure our conceptualization of multidimensional poverty is firmly rooted in the Open Working Group Outcome Document and proposed SDGs, we support the creation of a revised MPI. At a minimum this "MPI2015" would track extreme deprivation in nutrition, health, education, water, sanitation, clean cooking fuel, and reliable electricity, to show continuity with MDG priorities. More specifically it would reflect the following deprivations:

1. Adult or child malnourishment
2. Disrupted or curtailed schooling (a minimum of years 1-8)
3. The absence of any household member who has completed 6 years of schooling
4. Child mortality within the household within the last 5 years
5. Lack of access to safe drinking water
6. Lack of access to basic sanitation services
7. Lack of access to clean cooking fuel
8. Lack of basic modern assets (radio, TV, telephone, computer, bike, motorbike, etc.)
9. Lack of access to reliable electricity

Potential additional indicators to reflect the SDGs include work; housing; violence; social protection; quality of schooling; health system functioning; teenage marriage or pregnancy; solid waste disposal; birth registration; internet access (as suggested by the MPPN[56]); farm assets and a household's vulnerability to economic shocks and those posed by natural hazards (see MPAT's dimensions[57]) and/or quality of work; and empowerment or psychological wellbeing (see OPHI's Publications[58]).

Although it might seem preferable to determine multidimensional poverty based on deprivation in any indicator, previous MPIs have found considerable abnormalities in using only one deprivation, partly because of cultural and climactic diversity, and partly because the scale of these deprivations varies widely. Determining poverty levels in a country like India on the basis of any single deprivation would result in poverty rates above 90%, potentially obscuring the considerable progress that has been made in one or more areas and disincentivizing political action.[59] We therefore propose using the Alkire and Foster method of calculation,[60] and setting a threshold of multiple deprivations,[61] to determine who is or is not considered poor. Establishing the thresholds will require participatory discussions as well as expert consultation. Complementary National and Regional MPIs could also be designed for specific contexts, as Mexico, Columbia, Philippines, South Africa and Bhutan have done.[62]

[56] See the indicators proposed in the Multidimensional Poverty Peer Network's Light Survey proposal, available at: www.ophi.org.uk/mppn-and-ophi-propose-light-powerful-household-survey-for-post-2015
[57] See IFAD website: www.ifad.org/mpat
[58] See OPHI website: http://www.ophi.org.uk/research/missing-dimensions
[59] Alkire, S. and G. Robles (2014). "Identifying the multidimensionally poor: some considerations."
[60] Alkire, S. and J. Foster (2011). "Counting and Multidimensional Poverty measurement." *The Journal of Public Economics* 95(7–8), 476–487. Alkire, S. and A. Sumner (2013). *Multidimensional Poverty and the Post-2015 MDGs*. OPHI Briefing Note.
[61] Alternative cutoffs will be reported, as UNDP's HDRs do for MPI, and the World Bank does for $1.25.
[62] See examples of national level application here: CEPAL's Regional MPI for Latin America (forthcoming).

Disaggregation: An MPI based on the Alkire and Foster method has the potential to be disaggregated by both regions and groups.[63] At present MPI is disaggregated by rural-urban for 106 countries, decomposed by 780 subnational regions, and by some ethnic groups. A linked measure assesses inequality among the poor. Although identification is at the household level, if the MPI is disaggregated by sex and age category it shows MPI affects women and children disproportionately.

Additional modules can be used to develop individual-level adult and child poverty measures.[64] It is especially important to consider the multidimensional poverty of children to capture children's experiences of poverty and their consequences.

Comments and limitations: As a general rule, we recommend that the SDG indicator framework do not include any composite indices (see principles in section III), but we believe the MPI should be included for a number of reasons. The index provides the only comprehensive measure available for non-income poverty, which has become a critical underpinning of the SDGs. Critically the MPI comprises variables that are already reported under the Demographic Health Surveys (DHS) and Multi-Indicator Cluster Surveys (MICS), so it would not increase the statistical burden to NSOs or the international community.

Dependency on high-quality household survey data has its limitations. The number of countries producing such surveys has increased dramatically since the mid-1980s, to around 130 countries at present, but surveys remain irregular. Furthermore, many of the data for developed countries, such as the EU's Statistics on Income and Living Conditions (available for 31 countries), are incompatible with data from developing countries, undermining our ability to prepare a global comparative measure.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: This index relies fundamentally on household surveys. At present, the global MPI is based primarily on DHS and MICS, and also includes high quality national data with standardized indicator definitions.

Potential lead agency or agencies: World Bank, UNSD, UNICEF, and UNDP.

[63] Alkire, S. and A. Sumner (2013).

[64] For an example of a child poverty measure see Alkire, S. and J.M. Roche (2012). "*Beyond Headcount: Measures that* Reflect *the* Breadth *and* Components *of* Child Poverty". In Alberto Minujin and Shailen Nandy, eds. *Global Child Poverty and Well-Being: Measurement, Concepts, Policy and Action.* Bristol: The Policy Press. For a gendered measure see S. Alkire, M. Apablaza, and E. Jung (2014). "Multidimensional Poverty Measurement for EU-SILC Countries." OPHI *Research in Progress* 36d.

Indicator 4: Percentage of eligible population covered by national social protection programs

Rationale and definition: Access to adequate social protection is recognized as a basic right, enshrined in the Universal Declaration of Human Rights, but more than half of the world's population lacks national social protection coverage.[65] This indicator measures the percentage of the eligible population covered by these social safety nets. The ILO includes the following 10 elements as part of comprehensive social security coverage: medical care; sickness benefits; protection for disability, old age and survivorship, maternity, children, unemployment, and employment injury; and general protection against poverty and social exclusion.[66] The most common types of social protection are labor market interventions to promote employment and protect workers, social insurance such as health or unemployment insurance, and social assistance to support vulnerable individuals or households. New instruments of social protection have also gained popularity, including conditional cash transfers.

Disaggregation: By sex, age, urban/rural, and by type (medical, employment, etc.).

Comments and limitations: In practice, access to social security can be limited by discrimination, which may not be captured here.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: Administrative data, or household surveys if not available.

Potential lead agency or agencies: ILO.

Indicator 5: Percentage of women, men, indigenous peoples, and local communities with secure rights to land, property, and natural resources, measured by (i) percentage with documented or recognized evidence of tenure, and (ii) percentage who perceive their rights are recognized and protected.

Rationale and definition: Whether women, men, indigenous peoples, and local communities can have secure tenure over the land, property, and other natural resources has important implications for economic development and poverty reduction.[67] Yet, for many poor women, men, indigenous peoples, and communities, access to land, property, and other natural resources is increasingly undermined. In rural areas in particular, controversies involving large-scale land acquisitions by foreign and domestic investors for agribusiness, forestry, extractive, or other large-scale projects have placed land rights and the issue of responsible investment firmly on the global development agenda, and highlighted the importance of ensuring secure tenure rights for those who rely on land and natural resources for their well-being and livelihoods. Securing tenure rights is especially important for indigenous peoples, for

[65] UN Research Institute For Social Development (2010). *Combating Poverty and Inequality: Structural Change, Social Policy and Politics*. Geneva, Switzerland: UNRISD.

[66] See ILO Social protection website: http://www.ilo.org/global/topics/social-security

[67] The Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security ("Voluntary Guidelines") highlight the importance of tenure security over land and other natural resources, including fisheries and forests.

whom lands, territories, and other resources may also hold significant spiritual or cultural import and have implications for their right to development.[68]

Secure rights to tenure in urban areas are also vital. The absence of security of tenure for urban dwellers over their housing and property can have important implications for economic development, poverty reduction, and social inclusion.

This proposed new indicator comprises two components:
(i) percentage with documented or recognized evidence of tenure and
(ii) percentage who perceive that their rights to land, property, or other productive resources are recognized and protected.
Documentation and perception provide critical and complementary information on tenure security and resource rights. In addition, they both highlight outcomes and on-the-ground realities. The proposed focus on "documented or recognized evidence of tenure" is flexible enough to cover a range of tenure rights in different country contexts, and should include evidence of collective rights where appropriate.[69] Because documentation alone, while important, is often not sufficient to gauge true tenure security, the perception measure provides valuable complementary information. In addition, the perception measure may facilitate more useful comparisons across countries.

Disaggregation: As stated in the headline of the indicator, gender, indigenous peoples, and local communities are priority groups for disaggregation. Further disaggregation by urban/rural, region and other areas is desirable.

Comments and limitations: This indicator is closely aligned with suggested indicators developed by the Global Land Indicators Initiative (GLII), a consortium of UN agencies, intergovernmental organizations, international non-governmental organizations, farmer organizations, and academics that has been working on land indicators since 2012. The indicator also incorporates work undertaken by a coalition of civil society organizations that have focused on land in the post-2015 sustainable development agenda.
Preliminary assessment of current data availability by Friends of the Chair: C

Primary data source: For the documentation aspect, information from administrative data, census data, and household surveys. For the perception variable, added questions to opinion surveys or household surveys.

Potential lead agency or agencies: FAO, UNDP, UN-Habitat.

[68] The U.N. Declaration on the Rights of Indigenous Peoples provides various guidelines for protecting indigenous peoples' rights to land, territories, and other resources.

[69] Community-based and collective customary tenure systems are used around the world, and this indicator thus should be flexible enough to cover collective rights, in order to help strengthen rather than weaken these systems. See for example Voluntary Guidelines 9.4, which notes that, "States should provide appropriate recognition and protection of the legitimate tenure rights of indigenous peoples and other communities with customary tenure systems..."

Indicator 6: Losses from natural disasters, by climate and non-climate-related events (in US$ and lives lost)

Rationale and definition: Cities around the world, as well as rural populations, are at growing risk from natural hazards, including extreme climate-related events that are projected to increase in frequency and severity as a result of climate change. Population growth and urbanization will also affect vulnerability and exposure.

This indicator measures losses, both lives lost and economic costs, in urban and rural areas due to natural disasters,[70] disaggregated by climate and non-climate-related events. Extreme climate-related natural disasters include the following:
(i) hydro-meteorological events (storms, floods, wet mass movements) and
(ii) climatological events (extreme temperature, drought, wildfire).[71]
Non-climate-related natural disasters consist primarily of geophysical events (earthquakes, volcano eruptions, tsunamis, dry mass movements). Other disasters that may be climate or non-climate related include biological events (epidemics, insect infestations, animal stampedes). If in doubt, we propose that the events be categorized as "non-climate related."

Effective adaptation and disaster risk reduction measures are needed to reduce the economic and social impact of natural disasters, including extreme climate events, on agriculture and rural areas. The economic dimensions of this indicator would track crop and animal production losses associated with climate and non-climate-related events, primarily through utilizing real-time remote sensing technology as the core of high-resolution agricultural monitoring systems. Such an indicator would also track the success of adaptation and other preparedness measures in areas that are most at risk, including, for example, the adoption of new stress tolerant varieties or other resilience-enhancing technologies that minimize the risk of crop losses.[72]

Other economic loss dimensions should be considered, including damage at the replacement value of totally or partially destroyed physical assets; losses in the flows of the economy that arise from the temporary absence of the damaged assets; resultant impact on post-disaster macroeconomic performance, with special reference to economic growth/GDP, the balance of payments and fiscal situation of the Government; as per the Damage and Loss Assessment Methodology developed by UN-ECLAC.[73]

[70] Consistent with the definitions used by CRED and the Munich database, we use the term 'natural disasters' to comprise biological, geophysical, meteorological, hydrological, climatological, and extra-terrestrial disasters. There is growing evidence that some climate-related disasters are due to anthropogenic climate change and may therefore not be termed "natural", but given the difficulty involved in establishing causality we propose to include them under natural disasters. See R. Below, A. Wirtz, and D. Guha-Sapir (2009). *Disaster Category Classification and peril Terminology for Operational Purposes*. Working Paper, Centre for Research on the Epidemiology of Disasters (CRED) and Munich Reinsurance Company (Munich RE), Brussels: UCL.

[71] As defined by the EM-DAT, the International Disasters Database, managed by the Centre for Research on the Epidemiology of Disasters (CRED) at the University of Louvain. Available at http://www.emdat.be/classification

[72] Mitchell, T., L. Jones, E. Lovell, and E. Comba (eds) (2013). *Disaster Management in Post-2015 Development Goals: Potential Targets and Indicators.* London, UK: Overseas Development Institute (ODI).

[73] DaLA Methodology at the Global Facility for Disaster Reduction and Recovery, available here at https://www.gfdrr.org/Track-III-TA-Tools

Human losses would be measured by the number of persons deceased or missing as a direct result of the natural disaster, confirmed using official figures. The scale and duration of displacement would also be an important aspect of the human cost.

Disaggregation: This indicator can be disaggregated spatially (including urban/rural) and by the age and sex of those killed. Further opportunities for disaggregation to be reviewed, including the socio-economic profile of those impacted.

Comments and limitations: Some biological disasters (epidemics, insect infestations, animal stampedes) can be climate-related. The indicator would need to specify clearly which of these events are considered climate-related.

It should also be noted that there are some limitations around measuring the scale of disaster losses recorded. For example, the CRED's International Disasters Database (EM-DAT) has a lower-end threshold for recording losses than other commonly used reinsurance databases such as Swiss Re's Sigma or Munich Re's NatCatSERVICE. A precise threshold will need to be agreed upon.[74]

Preliminary assessment of current data availability by Friends of the Chair: C

Primary data source: Vital registration for the mortality (household surveys if not available), and administrative data (national accounts and statistics) to assess economic damage and loss.

Potential lead agency or agencies: Such an indicator could be reported by UNISDR working with FAO, WHO, the Centre for Research and Epidemiology of Disasters (CRED), and a consortium of reinsurance companies that track this data. The data is widely reported under the Hyogo Framework of Action.[75] Data on forced displacement could be provided by UNHCR, IOM and OCHA.

Indicator 7: Total fertility rate

Rationale and definition: The total fertility rate is the average number of live births a woman would have by age 50 if she were subject, throughout her life, to the age-specific fertility rates observed in a given year. The calculation assumes that there is no maternal mortality. Falling total fertility rates may demonstrate an improvement in women's ability to exercise their right to make informed and free choices over if, when, and how many children they would like to have.

A deep technical literature shows that high fertility rates are inversely related to the incidence of extreme poverty and per capita economic growth, gender inequality, maternal mortality and poor child health, environmental degradation, and other dimensions of sustainable development.[76] Paragraph 13 of the Programme of Action adopted by the International Conference on Population and Development

[74] For a full discussion of this see C. Kousky (2012). *Informing Climate Adaptation: A Review of the Economic Costs of Natural Disasters, Their determinants and Risk Reduction Options*. Discussion Paper 12-28, Washington: Resources for the Future.

[75] UN International Strategy for Disaster Reduction (ISDR) (2007). *Hyogo Framework for Action 2005-2015. Extract from the Final Report of the World Conference on Disaster Reduction*. Geneva, Switzerland: ISDR.

[76] For a comprehensive review of the evidence linking population growth and fertility rates to sustainable development see UN Population Division (2011). *Seven Billion and Growing: The Role of Population Policy in Achieving Sustainability*. Technical Paper No. 2011/3. New York.

(ICPD) highlights also that reducing population growth through voluntary transition to lower fertility levels is one component of achieving sustainable development.[77]

Disaggregation: By age and rural/urban.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Civil registration and vital statistics.

Potential lead agency or agencies: Total fertility estimates are calculated for all countries by the Population Division of the Department of Economic and Social Affairs and appear in the biennial United Nations publication World Population Prospects. UNFPA would also be an important lead agency.[78]

Complementary National Indicators for Goal 1:

1.1. **Poverty gap ratio (MDG Indicator)**. This estimates the depth of poverty by estimating how far on average the extreme poor's incomes are from the extreme poverty line of $1.25 PPP per day.

1.2. **Percentage of population using banking services (including mobile banking).** Access to banking services, such as a checking account, is important for the economic empowerment of the poor. It will be important to disaggregate by sex, age, and type of service (mobile banking, microfinance, formal banking etc.).

1.3. **[Indicator on equal access to inheritance] – to be developed.** Some countries have laws that grant differential access to inheritance based on gender or other social status.

1.4. **[Disaster Risk Reduction Indicator]– to be developed**. Composite index that measures reduction of disaster risk, including existence of DRR management plan, DRR authority, early warning systems, and availability of DRR funding.

[77] SDSN (2013).
[78] A revised version of the report (2012) is available at http://esa.un.org/unpd/wpp/index.htm

Goal 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

Potential and Illustrative Global Monitoring Indicators:

Indicator 8: Proportion of population below minimum level of dietary energy consumption (MDG Indicator)

Rationale and definition: The percentage of the population below the minimum level of dietary energy consumption is defined as the percentage of people in a population who suffer from hunger or food deprivation (caloric). This MDG Indicator collected by FAO is expressed as a percentage, and it is based on the following three parameters:

- The three-year moving average amount of food available for human consumption per person per day;
- The level of inequality in access to that food; and
- The minimum dietary energy required for an average person– expressed in kilocalories per day.

Disaggregation: This indicator measures an important aspect of the food insecurity of a population. In assessing food insecurity, it is important to consider geographical areas that may be particularly vulnerable (such as areas with a high probability of major variations in food production or supply) and population groups whose access to food is precarious or sporadic (such as particular ethnic or social groups). In addition, intra-household access to food may show disparities by sex. Therefore, whenever household survey food consumption data are available and disaggregated by sex, efforts should be made to conduct sex-based undernourishment analyses.[79]

Comments and limitations: Some experts argue that caloric intake alone is not a helpful measure of sufficient healthy food. Instead they recommend measuring dietary diversity, the percentage of calories from non-staple crops, or the share of calories from protein. An additional indicator that could be utilized is the Food Insecurity Experience Scale developed by FAO.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: This indicator is based on a combination of national food balances (administrative data), population data (census), and household consumption (household surveys).

Potential lead agency or agencies: FAO, WHO.

Indicator 9: Percentage of women of reproductive age (15-49) with anemia

Rationale and definition: Micronutrients are essential for good health, however shortfalls of one or more micronutrients are common in some regions due to diet, poverty, and/or illness.[80] Micronutrient deficiencies are especially devastating to pregnant women and children, as deficiencies during the first

[79] United Nations (2003).

[80] Persons have a shortfall in an essential micronutrient when that nutrient is not at adequate levels in the body. This could result from insufficient intake of the micronutrient in food, or insufficient uptake into the body due to illness.

1000 days can have lifelong affects on physical, mental, and emotional development. Anemia is a multi-factorial disorder caused mainly by iron deficiency and infections and to a lesser extent by deficiencies of vitamin A, vitamin B12, folate, and riboflavin. Anemia affects half a billion women worldwide, or about 29% of non-pregnant women and 38% of pregnant women, mostly in South Asia and Central and West Africa. It is estimated that half the cases of anemia are due to iron deficiency.[81] Anemia in women of reproductive age serves as a proxy for micronutrient deficiencies in the absence of more comprehensive indicators. Data on anemia prevalence collected in 1993-2005 are available for 73% of non-pregnant women of reproductive age, in 82 countries, (WHO 2012).

Disaggregation: Disaggregated by age, socioeconomic status, rural/urban, and ethnicity or indigenous status.

Comments and limitations: Tracking anemia in women of reproductive age accurately measures the risk of micronutrient deficiency to the most vulnerable (the developing fetus), but is not a perfect proxy for status of all micronutrients across all populations and sub-populations. Ideally, countries would track deficiencies of iron, zinc, iodine, vitamin A, folate, vitamin B12, and vitamin D across all ages, genders, and other socioeconomic gradients. This would give a more robust portrait of the nutritional state of a country. Today it would be challenging to implement such an indicator, but the development of rapid diagnostic tests for micronutrient deficiency could make this feasible before the end of the SDG period. In fact, some countries are already collecting data on iron, iodine, vitamin A, folate, and vitamin B12 at a national level.[82]

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Administrative data from health ministries survey reports.

Potential lead agency or agencies: Such data is collected by FAO and WHO and would need to be combined into a composite index that would form an essential component of a post-2015 monitoring framework.

Indicator 10: Prevalence of stunting and wasting in children under 5 years of age

Rationale and definition: This indicator will measure children under age 5 who exhibit stunting and wasting. The indicator will track children who are a) neither stunted nor wasted, b) stunted but not wasted, c) wasted but not stunted, and c) both wasted and stunted, as interventions differ for the two conditions. This will provide an accurate picture of under-5 nutrition. Proper nutrition during the first 1,000 days of life is vital for children to reach their full potential. Stunting and wasting in children can have severe and potentially irreversible impacts on their physical, mental, and emotional development.

Stunting is low height for age; the indicator measures children age 5 years and under whose height for age is two or more standard deviations below the median height for age of a reference population. Stunting is caused by chronic nutrient deficiency and/or illness.

[81] United Nations Standing Committee on Nutrition (2014). *Measurement of and Accountability for Results in Nutrition In the Post-2015 Sustainable Development Goals: A Technical Note*. United Nations Standing Committee on Nutrition. Available at http://www.unscn.org/files/Publications/Briefs_on_Nutrition/Final_Nutrition%20and_the_SDGs.pdf

[82] WHO (2014c).

Wasting is low weight for age; the indicator measures children age 5 years and under whose weight for age is two or more standard deviations below the median weight for age of a reference population. Wasting is caused by acute food shortages and/or disease, and is strongly correlated with under-5 mortality.

Disaggregation: This indicator can be disaggregated by sex, age, household income, and other socioeconomic and spatial qualifiers.

Comments and limitations: When monitoring in the MDG annual report, UNICEF includes data on underweight, stunting, and wasting. While this indicator includes two metrics, these measurements (height, weight, age) are generally taken at the same time, so there is no additional measurement or monitoring burden.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Household survey and/or administrative data from health records.

Potential lead agency or agencies: The indicator is routinely measured and data could be collected by UNICEF and WHO.[83]

Indicator 11: Percentage of infants under 6 months who are exclusively breast fed

Rationale and definition: Optimal breastfeeding of infants under two years of age has the greatest potential impact on child survival of all preventive interventions, with the potential to prevent over 800,000 deaths (13 percent of all deaths) in children under 5 in the developing world.[84]

Breastfed children have at least a six-times greater chance of survival in the early months than non-breastfed children. An exclusively breastfed child is 14 times less likely to die in the first six months of life than a non-breastfed child, and breastfeeding drastically reduces deaths from acute respiratory infection and diarrhea, two major child killers.[85] The potential impact of optimal breastfeeding practices is especially important in developing country situations with a high burden of disease and low access to clean water and sanitation. Exclusive breastfeeding also has a protective effect against obesity and certain non-communicable diseases later in life.[86]

In 2012, the World Health Assembly Resolution 65.6 endorsed a *Comprehensive implementation plan on maternal, infant and young child nutrition*[87]), which specified six global nutrition targets for 2025. The World Health Organization and UNICEF recommendations on breastfeeding are as follows: initiation of

[83] WHO (2014b).
[84] Black, R.E. RE, et al (2013). Maternal and child undernutrition and overweight in low-income and middle-income countries. *Lancet* 382:427–51. doi:10.1016/S0140-6736(13)60937-X.
[85] UNICEF. "Breastfeeding." UNICEF: New York, 2014. Available at http://www.unicef.org/nutrition/index_24824.html
[86] Horta BL, Victora CG (2013). Long-term effects of breastfeeding: a systematic Review. Geneva: World Health Organization; 2013.
[87] World Health Organization (2012). *Resolution WHA65.6. Comprehensive implementation plan on maternal, infant and young child nutrition*. Sixty-fifth World Health Assembly Geneva, 21–26 May 2012. Resolutions and decisions, annexes. Geneva: World Health Organization; 2012:12–13. Available at http://www.who.int/nutrition/topics/wha_65_6/en

breastfeeding within the first hour after the birth; exclusive breastfeeding for the first six months; and continued breastfeeding for two years or more, together with safe, nutritionally adequate, age appropriate, responsive complementary feeding starting in the sixth month. This indicator will specifically measure the percentage of children less than six months old who are fed breast milk alone..

Disaggregation: This indicator can be disaggregated by the mother's age, household income, education level, and urban/rural.

Comments and limitations: There is little contention about the high priority to be given to this indicator.

Primary data source: Household surveys (DHS, MICS, NSS, NNS).

Potential lead agency or agencies: UNICEF and WHO.

Indicator 12: Percentage of women, 15-49 years of age, who consume at least 5 out of 10 defined food groups

Rationale and definition: Measuring dietary energy supply alone is an incomplete and insufficient metric to address the increasing burden of malnutrition globally; dietary diversity is a critical and complementary metric. Lack of dietary diversity has been shown to be a crucial issue, particularly in the developing world where diets consist mainly of starchy staples with less access to nutrient-rich sources of food such as animal protein, fruits and vegetables. Women and children are particularly vulnerable to ill effects.

This indicator tracks dietary diversity, a vital element of diet quality, by measuring the consumption of a variety of foods across and within food groups, and across different varieties of specific foods, to ensure adequate intake of essential nutrients and important non-nutrient factors. Research has demonstrated a strong association between dietary diversity and diet quality, and nutritional status of children.[88] It is also clear that household dietary diversity is a sound predictor of the micronutrient density of the diet, particularly for young children.[89] Studies have also shown that dietary diversity is associated with food security and socioeconomic status, and links between socioeconomic factors and nutrition outcomes are well known.[90]

Based on surveys, the indicator measures consumption of at least five of ten food groups: starchy foods; beans and peas; nuts and seeds; dairy; flesh foods; eggs; vitamin A-rich dark green leafy vegetables; other vitamin A-rich vegetables and fruits; other vegetables; and other fruits. The FAO, the Food and Nutrition Technical Assistance III Project (FANTA), and many other stakeholders have endorsed this

[88] See i) Arimond, M, and Ruel, MT (2004). Dietary diversity is associated with child nutritional status: evidence from 11 demographic and health surveys. *Journal of Nutrition* 134 (10): 2579–2585. Ii) Kennedy, GL et al (2007). Dietary diversity score is a useful indicator of micronutrient intake in non-breast-feeding Filipino children. *J Nutr* 137, 472–477. iii) Rah, JH et al (2010). Low dietary diversity is a predictor of child stunting in rural Bangladesh. *European Journal of Clinical Nutrition* 64, 1393–1398.

[89] Moursi, M, Arimond, M and Deweg, KG (2008). Dietary Diversity Is a Good Predictor of the Micronutrient Density of the Diet of 6- to 23-Month-Old Children in Madagascar. *J. Nutr.* 138: 2448-2453.

[90] See i) Thorne-Lyman, AL et al (2010). Household dietary diversity and food expenditures are closely linked in rural Bangladesh, increasing the risk of malnutrition due to the financial crisis. *J Nutr* 140, 182S–188S. ii) World Bank (2006). *Repositioning nutrition as central for development.* World Bank. Washington, DC. iii) World Bank (2007). *From agriculture to nutrition: Pathways synergies and outcomes.* World Bank. Washington, DC.

indicator (under the name "Minimum Dietary Diversity – Women (MDD-W)"). This indicator helps practitioners set nutrition targets for women, advocate for healthier diets, and assess consumption patterns in order to improve women's nutrition.[91]

Disaggregation: This indicator can be disaggregated by age, household income, education, and urban/rural.

Comments and limitations: The MDD-W has been piloted in several countries through household surveys (DHS) and individual research projects with the aim of widespread application as a global indicator by 2017; however, additional work will be needed to take this indicator to the global level. Further, while this indicator can be a useful proxy for diet quality of young children and women of reproductive age living in poverty in low-income countries, it does not take into account other aspects of diet that have been related to risk of NCDs, such as the adverse effects of refined starches, sugar, red meat, and trans fat, and might actually encourage over consumption of some unhealthy foods in other populations and demographic groups. Further, encouragement of higher consumption of some forms of animal flesh, especially beef and dairy products, could have adverse effects on sustainability if applied globally to all demographic groups.

To accurately understand and improve dietary quality worldwide, we need to begin to collect far more data on individual diets. Currently, many countries do not routinely collect dietary data, and those that do often do not capture robust data at the needed spatial and time scales. Further, new indicators of dietary quality should be developed that predict optimal health across the life cycle. Finally, a major weakness of this indicator is that it does not capture the nutritional status of an entire population. As data systems improve and we are able to collect high-quality dietary data in near real-time, diet quality indicators should be expanded to cover women and men starting at 6 months and going up to at least age 70.

Primary data source: Household surveys.

Potential lead agency or agencies: FAO, WHO.

[91] More information is available at http://www.fantaproject.org/monitoring-and-evaluation/minimum-dietary-diversity-women-indicator-mddw

Indicator 13: Crop yield gap (actual yield as % of potential or water-limited potential yield)

Rationale and definition: This indicator tracks yield gaps for major commodities, i.e. actual yields relative to the yield that can be achieved under perfect management conditions, taking into account climate and the use of rainfall if irrigation is not an option (i.e. water-limited yield potential). This indicator is a benchmark for productivity that shows the exploitable yield gap. Often, 80% of the water-limited yield potential (rainfed agriculture) or potential yield (irrigated agriculture) is the so-called exploitable yield gap. This percentage may vary depending on biophysical (e.g. climate variability affecting risk), economic and environmental conditions, but further closure of yield gaps is often not feasible for a variety of reasons. Countries and investors are then faced with the question what are the right policy and technology roadmaps to close the yield gap. The Global Yield Gap Atlas is currently mapping the yield gaps of major food crops for important food producing countries across the globe, using a global protocol with local application.

Disaggregation: It can be disaggregated by crops of highest priority for a country and is suitable for spatial disaggregation, from local to global scales.

Comments and limitations: This indicator must be interpreted in conjunction with other indicators expressing efficiency of critical resources, such as water and nutrients, to ensure agro-ecologically sustainable solutions. It requires improved data collection and monitoring systems, including modeling and remote sensing.[92]

Preliminary assessment of current data availability by Friends of the Chair: C

Primary data source: Administrative data, and/or agricultural-based household survey.

Potential lead agency or agencies: FAO.

Indicator 14: Number of agricultural extension workers per 1000 farmers [or share of farmers covered by agricultural extension programs and services]

Rationale and definition: It will not be possible to increase sustainable agriculture yields in all countries without a functioning public and/or private agricultural extension system. The proposed indicator has been developed by FAO to track the total number of qualified agricultural professionals across different sectors that provide training, information, and other extension support and services to farmers and small-to-medium enterprises in rural value chains.

Disaggregation: This indicator can be disaggregated at sub-national scales, by sex, and by public vs. private sector extension workers.

Comments and limitations: The current indicator has a few limitations. First, the indicator does not distinguish between levels of training of extension workers. It should only include professionals with a minimum level of education, training, and certification. Second, the indicator does not measure the

[92] Dobermann, A. and Nelson, R. et al (2013). *Solutions for Sustainable Agriculture and Food Systems.* Technical report of the SDSN Thematic Group on Sustainable Agriculture and Food Systems: Paris, France, and New York, USA.

effectiveness of the agricultural extension system in terms of actually reaching farmers with new information, knowledge and services. Therefore, an additional indicator could be developed to measure the percentage of farmers who are effectively and regularly covered by quality agricultural extension or similar programs.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: Administrative data, and/or agricultural-based household survey.

Potential lead agency or agencies: Data for the indicator is collected by the FAO.[93]

Indicator 15: Nitrogen use efficiency in food systems

Rationale and definition: Nitrogen plays a central role for the productivity, sustainability and environmental impact of crop and animal production systems. Nitrogen is essential for feeding the world's population and to enable intensive farming, which in turn limits the conversion of land to agriculture.

Most of the anthropogenic nitrogen produced enters global cycles as fertilizer in crop production. Hence, optimizing nitrogen management so that high yields can be achieved with high nitrogen fertilizer efficiency is a core component of food security as well as environmental sustainability. At the same time, some food systems (e.g. smallholder food production in sub-Saharan Africa) consume more nitrogen than is replenished – they "mine" nitrogen from soils. An effective nitrogen indicator therefore needs to track the levels as well as efficiency of nitrogen use.

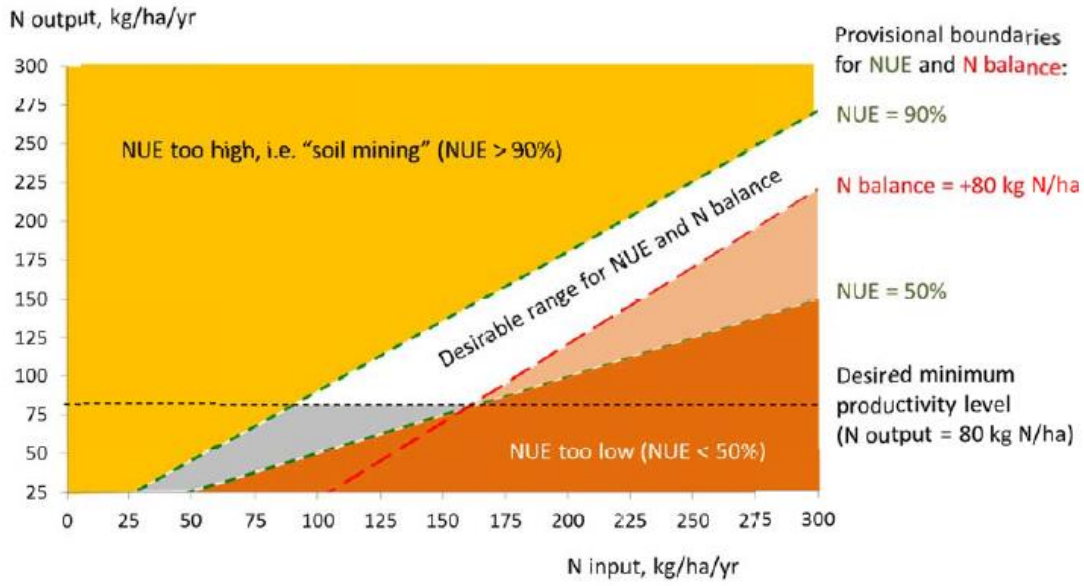
Nitrogen use efficiency is based on the mass balance principle and defined as nitrogen output in harvested products divided by the nitrogen inputs to the farm or the food system. It must be corrected for changes in the stock of nitrogen inside the system.

The indicator can be presented graphically by mapping nitrogen input against nitrogen output. For each food system and agro-ecological area, optimal ranges of nitrogen use efficiency can be defined, which in turn makes it possible to determine whether a given system uses nitrogen optimally or has too low/high nitrogen use efficiency. Additionally, the presentation of the indicator can identify minimum nitrogen use levels that denote minimum food production thresholds. Food systems, such as many smallholder farmers in Africa, that use too little nitrogen would therefore be encouraged to increase nitrogen use. Finally, the graphs can specify the acceptable nitrogen balance surplus for each food system.

Such a graph is illustrated schematically below (Figure 7). All values are purely indicative and for illustration purposes only.

[93] Ibid.

Figure 7: Example for acceptable boundaries of nitrogen output/input ratios, nitrogen use efficiency, minimum productivity levels, and maximum nitrogen surplus balance at a national scale. The example only serves to illustrate the interpretation of the proposed indicator.[94]



Targets for crop nitrogen use efficiency are context-specific, primarily depending on climate, yield, current nitrogen use, soil quality, irrigation, and other crop management practices. This indicator needs to be interpreted in relation to other indicators, such as the crop yield gap indicator and the water productivity indicator. A possible target range for this indicator would require careful consideration.

Tracking nitrogen will require major improvements of the necessary data collection systems in two ways:
(i) annual nutrient use and crop removal statistics at sub-national level and by crops (fertilizers and other nutrient sources) and
(ii) regular field monitoring of nitrogen use efficiency and other nutrient-related indicators (e.g. soil fertility, management practices for better nutrient stewardship).

Currently this indicator is not used widely. It has recently been recommended by a task force of the UNEP Global Partnership on Nutrient Management (GPNM), the EU Nitrogen Experts Panel, and other expert groups.

Disaggregation: Food production systems are extremely diverse and context specific. Therefore it is important that nitrogen indicators can be tracked at different geographic scales (local, national, global) as well as by farming systems (e.g. maize, wheat, cassava). Nitrogen use efficiency can be estimated at different scales. Countries can track it for each major farming system, agroecological zone, and/or watershed.

Comments and limitations: This indicator tracks only nitrogen use and is complemented by a national indicator for phosphorus. We believe that nitrogen and phosphorus are the two most important

[94] EU Nitrogen Expert Panel.

nutrients to track, but we underscore that sustainable food systems will require sound management of many other nutrients, including potassium and soil organic matter.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: TBD.

Potential lead agency or agencies: Data for this indicator could be collected by FAO working with the International Fertilizer Industry Association (IFA) and national agencies.[95]

Indicator 16: [Crop water productivity (tons of harvested product per unit irrigation water)] – to be developed

Rationale and definition: The proposed indicator is directly related to freshwater use for irrigation. Under the System of Environmental-Economic Accounting (SEEA) water productivity is defined as the value added of agriculture divided by water use by agriculture. More work is needed to define this indicator.

Disaggregation: Opportunities for disaggregation to be reviewed once the indicator has been defined.

Comments and limitations: Another alternative is to define water productivity as the efficiency with which water is converted to harvested product, i.e. the ratio between yield and seasonal water supply, including rainfall and irrigation.[96]

Preliminary assessment of current data availability by Friends of the Chair: C

Primary data source: TBD.

Potential lead agency or agencies: FAO.

Complementary National Indicators for Goal 2:

2.1. **Percentage of population with shortfalls of: iron, zinc, iodine, vitamin A, folate, vitamin B12, [and vitamin D]:** Currently, some countries track selected micronutrient deficiencies in a full population. The micronutrients they choose to track are often based on data that is years or even decades old, over which time diets have changed dramatically in many countries. We propose countries perform a baseline survey on the status of all above-mentioned micronutrients, identify those of concern in partnership with WHO, and continue monitoring on micronutrients of concern over the SDG period. The United Nations Standing Committee on Nutrition also recommends developing and tracking micronutrient metrics beyond anemia.[97]

[95] Ibid.
[96] Van Ittersum, M.K. et al (2013).
[97] United Nations Standing Committee on Nutrition. *Measurement of and Accountability for Results in Nutrition In the Post-2015 Sustainable Development Goals: A Technical Note*. United Nations Standing Committee on Nutrition: November 2014. Available at http://www.unscn.org/files/Publications/Briefs_on_Nutrition/Final_Nutrition%20and_the_SDGs.pdf

2.2. **Proportion of infants 6–23 months of age who receive a minimum acceptable diet.** Children (breastfed or not) 6–23 months of age who had at least the minimum dietary diversity (4 food groups) and the minimum meal frequency (depends on age of infant) during the previous day (numerator), divided by children (breastfed or not) 6–23 months of age (denominator).

2.3. **Percentage children born with low birth weight**. The low birth weight (LBW) rate is the number of newborns with a birth weight of less than 2,500g, and is the most common indicator of fetal growth.

2.4. **Cereal yield growth rate (% p.a.).** Presented as a moving, multi-year average, this indicator tracks long-term increases in crop yields, which must make an important contribution to meeting future food needs.

2.5. **Livestock yield gap (actual yield as % of attainable yield).** This indicator tracks yield gaps for major livestock commodities like milk, eggs, and meat, taking into account climate, disease conditions, and the sustainable use of water and feed. This indicator must be interpreted in conjunction with other indicators expressing efficiency of critical resources such as feed and water to ensure agro-ecologically sustainable solutions, as well as total livestock numbers at the household and national levels. It also should ensure increased yields do not come at the expense of animal welfare and that farmers can access veterinary services.

2.6. **[Phosphorus use efficiency in food systems] -to be developed.** Phosphorus is a major nutrient for food systems and with impact on the environment. We propose that a phosphorus use efficiency indicator be developed analogously to the nitrogen use indicator (Indicator 12).

2.7. **Share of calories from non-staple crops**. This simple indicator can be used to track progress towards more diverse and healthier diets.

2.8. **Percentage of total daily energy intake from protein in adults**. The percentage of calories from protein consumption in adults.

2.9. **[Access to drying, storage, and processing facilities]– to be developed**. Good infrastructure for drying and storing agricultural produce as well as inputs is critical to reducing losses due to contamination by mycotoxins, insects, or other food contaminants. Drying, storage, and processing facilities also increase the earnings of farmers by allowing them more time in which to sell their crops and wait for good prices. Expanding rural processing capacity generates employment opportunities, enhances access to markets, and facilitates value addition (including the production of foods to enhance infant/child nutrition and reduce drudgery).

2.10. **[Indicator on genetic diversity in agriculture] – to be developed**. This indicator will track seed and genetic plant diversity.

2.11. **[Indicator on irrigation access gap]– to be developed**. Increasing irrigation in areas where it can be done sustainably but is currently underutilized will be important to raise crop yields. An appropriate indicator to measure this is needed.

2.12. **[Farmers with nationally appropriate crop insurance (%)] – to be developed**. This indicator seeks to quantify resilience (to storms, floods, drought, pests, etc.) in agricultural systems.

2.13. **Public and private R&D expenditure on agriculture and rural development (% of GNI)**. This indicator tracks public and private resource mobilization for R&D on agriculture and rural development as a share of GNI.

2.14. **[Indicator on food price volatility] – to be developed**. Extreme food price volatility is an important driver in food security and should be tracked.

Goal 3. Ensure healthy lives and promote well-being for all at all ages

Potential and Illustrative Global Monitoring Indicators:

Indicator 17: Maternal mortality ratio (MDG Indicator) and rate

Rationale and definition: The maternal mortality ratio is the annual number of maternal deaths from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes) during pregnancy, childbirth, or within 42 days of termination of pregnancy, per 100,000 live births per year. This indicator reflects the capacity of health systems to effectively prevent and address the complications occurring during pregnancy and childbirth. It may also highlight inadequate nutrition and general health of women and reflect the lack of fulfillment of their reproductive rights resulting in repeated and poorly spaced pregnancies.

The maternal mortality rate is the number of maternal deaths in a population divided by the number of women of reproductive age. It captures the likelihood of both becoming pregnant and dying during pregnancy (including deaths up to six weeks after delivery).

Disaggregation: As data systems improve, it will be important to disaggregate by age, geographic location (e.g. urban vs. rural), and income level.[98]

Comments and limitations: Both metrics are difficult to measure as vital registration and health information systems are often weak in developing countries. The ratio does not capture deaths during pregnancy or the puerperium, which may be due to complications from pregnancy or delivery, as rate does, which is why we suggest measuring both.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Complete vital statistics registration systems are the most reliable data source, but these are rare in developing countries so household surveys are often used.

Potential lead agency or agencies: WHO, UN Population Division (UNPD), UNICEF, and World Bank maintain databases on maternal mortality.

Indicator 18: Neonatal, infant, and under-5 mortality rates (modified MDG Indicator)

Rationale and definition: The under-5 mortality rate is the probability for a child to die before reaching the age of five, if subject to current age-specific mortality rates. The neonatal (<28 days) and infant (<1 year) mortality rates are important subcomponents within under-5 mortality. This indicator measures child health and survival and is expressed as the number of deaths per 1,000 live births. It captures more than 90 percent of global mortality among children under the age of 18. Data on disease incidence are frequently unavailable, so mortality rates are used.[99]

[98] See WHO website on maternal and perinatal health: www.who.int/reproductivehealth/topics/maternal_perinatal/en/index.html

[99] UNICEF, WHO, World Bank and UNPD (2007). *Levels and Trends of Child Mortality in 2006: Estimates developed by the Inter-agency Group for Child Mortality Estimation.* New York, NY: UNICEF, 9.

Disaggregation: Data should be heavily disaggregated (including by geographical location) so as to identify particularly vulnerable populations.

Comments and limitations: The neonatal (<28 days) and infant (<1 year) mortality rates are important to include as past trends show slower declines in neonatal and infant deaths than among children age 1 to 4.[100]

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Complete vital statistics registration systems are the most reliable data source, but these are rare in developing countries so household surveys are often used.

Potential lead agency or agencies: UNICEF, WHO, and the UN Population Division report on infant and child mortality. Data collection on neonatal mortality rates will need to be improved.

Indicator 19: Percent of children receiving full immunization (as recommended by national vaccination schedules)

Rationale and definition: Nearly every country currently has a country-specific schedule of vaccines to be received. At the global level, WHO recommends that all children receive vaccination against BCG, Hepatitis B, Polio, DTP, *Haemophilus influenza* type b, Pneumococcal (Conjugate), Rotavirus, Measles, Rubella, and that adolescent girls (aged 9-13) receive vaccination against HPV.[101] This indicator measures the percent of children and adolescents who have received all immunizations at the appropriate age, as recommended by their national schedule or, in the absence of a national vaccination schedule, the WHO schedule. Countries may also wish to include additional vaccinations, such as tetanus, yellow fever, etc., as recommended by the WHO's *Global Vaccine Action Plan.*[102]

Disaggregation: By sex, age and urban/rural. Other opportunities for disaggregation to be reviewed.

Comments and limitations: This indicator should be supported by data on all individual vaccines as it is unlikely that countries will meet full immunization requirements. In addition, in most countries national schedules cover fewer vaccines than WHO recommends. In these countries, Ministries of Health should work with WHO to ensure they have an appropriate schedule.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Household surveys. Demographic and Health Surveys (DHS) and Multiple Indicator Cluster Surveys (MICS) also include this information.

Potential lead agency or agencies: WHO currently collects data on immunization. UNICEF and GAVI are other important stakeholders.

[100] Ibid, 10.
[101] WHO (2013a).
[102] See http://www.who.int/immunization/documents/general/ISBN_978_92_4_150498_0/en/index.html

Indicator 20: HIV incidence, treatment, and mortality rates (modified MDG Indicator)

Rationale and definition: This indicator measures the spread of HIV and the ability for countries to provide treatment and services to those who are living with HIV. The incidence aspect measures the estimated number of new HIV infections per 1000 population, as well as treatment rates with anti-retroviral therapy (ART) by age group. This tracks progress towards reducing HIV infection and improving access to treatment. Treatment describes the percent of people living with HIV who are receiving ART, which consists of the use of at least three antiretroviral (ARV) drugs to maximally suppress HIV and stop the progression of the disease. It adds tracking of mortality from HIV/AIDS. The mortality rate is the estimated number of people that have died due to HIV as a ratio to people living with HIV.

Disaggregation: By sex, age and urban/rural. UNAIDS also recommends that whenever possible, disaggregation should be based on key populations: sex workers, men who have sex with men, and people who inject drugs. It can also be further determined nationally who is at greater risk of HIV infection.

Comments and limitations: It is important that all HIV indicators are measured for all age groups, as some of the biggest gaps in ART are in the treatment of children.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data from health facilities are the most reliable, but HIV incidence is also measured directly in surveys or estimated in models. The treatment rate is available from health facilities, but these are rare in developing countries so models are often used. The mortality rate is also calculated using models. These data are reported annually by countries to UNAIDS.[103]

Potential lead agency or agencies: WHO, UNAIDS.

Indicator 21: Incidence, prevalence, and death rates associated with all forms of TB (MDG Indicator)

Rationale and definition: Tuberculosis is a curable and preventable disease, but 1.5 million people still died from it in 2013 (out of 9 million infected).[104] The incidence rate of tuberculosis is the number of new cases of TB per 100,000 people per year. Prevalence is the number of TB cases in a population at a given point in time per 100,000 people. The TB death rate is the number of deaths caused by TB per 100,000 people in one year. Detecting and curing TB are key interventions for addressing poverty and inequality. Prevalence and deaths are more sensitive markers of the changing burden of tuberculosis than new cases, but data on incidence are more comprehensive and give the best overview of the impact of global tuberculosis control.

Disaggregation: Data should be disaggregated by age group, sex, urban/rural, and income, as well as by TB strain, with special attention to drug-resistant varieties. Additionally it should be disaggregated by

[103] UNAIDS (2013), 30.
[104] WHO (2014). *Global Tuberculosis Report*. Available at http://www.who.int/tb/publications/global_report/en

site of disease (pulmonary/extra-pulmonary), type of laboratory confirmation (usually sputum smear), and history of previous treatment.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data from health facilities are the most reliable, but these are rare in developing countries so household surveys are often used.

Potential lead agency or agencies: WHO is responsible for monitoring this indicator at the international level.[105]

Indicator 22: Incidence and death rates associated with malaria (MDG Indicator)

Rationale and definition: The incidence rate of malaria is the number of new cases of malaria per 100,000 people per year. The malaria death rate is the number of deaths caused by malaria per 100,000 people per year.

Disaggregation: Data should be disaggregated by age group, sex, geographic location (e.g. urban vs. rural), and income, as well as by causal agents of malaria.[106]

Comments and limitations: The quality of the data is particularly sensitive to the completeness of health facility monitoring. In addition, since the symptoms of malaria are similar to those of other diseases, incidences and deaths are sometimes misreported in poorly resourced countries. The invention of rapid diagnostic testing for malaria should be leveraged to improve data quality.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data from health facilities are the most reliable, but these are rare in developing countries, so household surveys are often used.

Potential lead agency or agencies: WHO is responsible for monitoring this indicator at the international level.[107]

Indicator 23: Probability of dying between exact ages 30 and 70 from any of cardiovascular disease, cancer, diabetes, chronic respiratory disease, [or suicide]

Rationale and definition: The disease burden from non-communicable diseases (NCDs) among adults is increasing due to aging and health transitions. Globally, NCDs are responsible for 38.48% of deaths of persons aged 15-49 and 79.35% of persons aged 50-69.[108] Measuring the risk of dying from target NCDs is important to assess the burden from mortality due to NCDs in a population. Further, suicide is

[105] See WHO website on TB: http://www.who.int/tb/en
[106] United Nations (2003).
[107] See WHO website on malaria: http://www.who.int/topics/malaria/en
[108] Institute for Health Metrics and Evaluation (IHME), (2013), *GBD Compare*. Seattle, WA: IHME, University of Washington.

responsible for 5.4% of deaths of persons aged 15-49 and 1.79% of persons aged 50-69.[109] This indicator measures the risk of premature death due to the most common NCDs and suicide. It is the percentage of 30-year-old people who would die before their 70th birthday from any of cardiovascular disease, cancer, diabetes, chronic respiratory disease, or suicide, assuming that s/he would experience current mortality rates at every age and s/he would not die from any other cause of death, like accidents or HIV/AIDS.[110]

Disaggregation: By sex and geographical location like rural and urban (to support targeting of healthcare systems). Other opportunities for disaggregation to be reviewed.

Comments and limitations: One limitation is that data on adult mortality is limited, notably in low-income countries.[111] This is especially true in the case of suicide, where stigma causes under-counting.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Death certificates and administrative data from health facilities are the most reliable source of data for this indicator, and provide data on all the above-mentioned conditions.[112] In areas where there is poor coverage of death certificates, household surveys are often used to measure mortality from NCDs, while WHO uses standardized methods to extrapolate suicide rates.

Potential lead agency or agencies: WHO.

Indicator 24: Percent of population overweight and obese, including children under 5

Rationale and definition: This indicator tracks the share of a country's population that is overweight or obese. Obesity at any age has significant effects on health, but is particularly damaging to children who often carry obesity into adulthood. The body mass index (BMI) is a measure of body fat based on height and weight that is calculated by dividing a person's weight by their height squared. WHO defines overweight for adults as having a BMI greater than or equal to 25. A BMI greater than or equal to 30 defines obesity. Overweight in children is defined by WHO's Child Growth Standards as the percentage of children aged 0-5 whose weight-for-height is above +2 standard deviations of the WHO Child Growth Standards median. Prevalence of overweight in adolescents is the percentage of adolescents who are one standard deviation above the BMI for age and sex.[113]

Disaggregation: By sex, and age and urban/rural.

Comments and limitations: The BMI is an imperfect measure, as it does not allow for the relative proportions of bone, muscle and fat in the body, and it ignores waist size, which is a clear indicator of obesity level.

---

[109] Ibid.

[110] WHO Indicator and Measurement Registry, Version 1.7.0 (2011). Available at http://apps.who.int/gho/indicatorregistry/App_Main/indicator_registry.aspx

[111] Agyepong, I, G Liu, and S Reddy et al (2014). *Health In the Framework of Sustainable Development.* SDSN: Paris, France and New York, USA.

[112] Suicide is often under-reported; however at least 60 WHO member states already have good-quality registration data to directly and accurately estimate suicide rates from death certificates. WHO's report *Preventing Suicide* (2014) estimates suicide rates for all WHO member states.

[113] WHO Indicator and Measurement Registry (2011).

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Household surveys.

Potential lead agency or agencies: WHO.

Indicator 25: Road traffic deaths per 100,000 population

Rationale and definition: This indicator measures road safety and is the rate of road traffic fatalities per 100,000 population. Road traffic injuries are a major health and development challenge: they are the eighth overall cause of death globally, and the leading cause of death for youth aged 15-29.[114] On current trends road traffic fatalities may become the fifth leading cause of death by 2030.

Disaggregation: WHO tracks deaths of pedestrians, cyclists, drivers of 4-wheeled vehicles, drivers of 2- or 3- wheeled motorized vehicles, and other. Information should be disaggregated further by geography, including rural/urban, to target solutions.

Comments and limitations: In a context of expanding road networks and traffic, such as in many LMICs, an increase in the number of road traffic deaths per 100,000 may only reflect the fact that more individuals are exposed to this risk. Therefore some have argued that this indicator should be measured per vehicle-kilometer. The challenge with this alternate measure is the lack of available data.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: Civil registration and vital statistics.

Potential lead agency or agencies: WHO, UN-Habitat.

Indicator 26: [Consultations with a licensed provider in a health facility or the community per person, per year] – to be developed

Rationale and definition: Access to primary health care services, including emergency obstetric care (EmOC), is necessary for achieving the health targets.[115] Primary health services are defined broadly to include preventative, curative, and palliative care of communicable and non-communicable diseases, sexual and reproductive health services, family planning, routine immunizations, and mental health. All of these elements are equally important to ensure good health and wellbeing.

The proposed indicator tracks the average number of consultations – including preventative and curative services – with a licensed provider. Licensed providers in health facilities include all adequately trained personnel registered and integrated in a national health system. Countries will set their own definitions of "licensed;" however, definitions should include consultations with community health workers (CHWs) but exclude pharmacists.

[114] WHO (2013e). *Global status report on road safety.*
[115] WHO (2009*). Monitoring emergency obstetric care: a handbook*. Geneva, Switzerland: WHO Press, 10.

There is agreement in the academic community that this is currently the most feasible and robust indicator on access to and utilization of services. WHO recommends a target for this indicator.[116] Through disaggregation, this indicator can provide insight into the causes of lack of access. Disaggregation by wealth quintile reveals areas where high costs prohibit access for the poorest people, and disaggregation by region or province can reveal areas where the number of health facilities or the number of health workers are inadequate.

The WHO and the World Bank are jointly working to develop a more robust and sophisticated indicator on access to health services. Such an indicator could replace this formulation.

Disaggregation: By sex, income, and region. Further opportunities for disaggregation to be reviewed.

Comments and limitations: Data availability may be a limiting factor for applying this indicator in rural areas and some low-income countries, especially when tracking visits with CHWs. Yet, modern information and communication technologies make it possible to collect such data effectively and at low cost. Since the same data can be used to assess the performance of a health system and its various facilities, its collection should be encouraged.

A second limitation of the indicator is that it measures the average number of consultations across an entire population. Such averages do not give information on how many people are excluded from the health system for some or all types of consultations unless disaggregated by a wide variety of factors.

Alternative measures for access to health care services are expressed as "percent of population living within [x] kilometers of service delivery point." A service delivery point is typically defined as any location where a licensed provider (including CHWs but excluding pharmacists) provides services. In the case of EmOC facilities, WHO defines the acceptable level of access as five facilities (including at least one comprehensive facility) for every 500,000 population. The difficulty with such geospatial indicators is that they do not adequately capture utilization and access, which may be conditioned by factors beyond physical proximity and affordability.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: TBD.

Potential lead agency or agencies: WHO.

Indicator 27: [Percentage of population without effective financial protection for health care] – to be developed

Rationale and definition: A central component of universal health coverage (UHC) is financial affordability and transparency in billing of preventative and curative health services. It is critical that global efforts to eradicate extreme poverty and promote social inclusion are not undermined by impoverishing expenditure to use needed health services, and that the poorest people can afford critical

[116] WHO. "Chapter 1, Indicators Index." *Service Availability and Readiness Assessment (SARA): A methodology for measuring health systems strengthening.* WHO: Geneva (2014).

care.[117] For this reason, a monitoring framework for the SDGs must include a Global Monitoring Indicator on financial protection for health care.

Yet, measuring financial affordability and protection for a broad range of health services is difficult. An indicator for financial affordability and protection requires accurate data from a number of sources, including public health financing rules and household surveys. Data availability should be good in countries implementing universal health care (UHC), but may be a challenge in other countries.

Below we describe the two best options for this indicator and outline major limitations. We believe that these limitations can be overcome, but for now we present a placeholder for this indicator. The WHO and the World Bank are jointly working to develop a more robust and sophisticated indicator on financial protection. The SDSN looks forward to working with them and other interested organizations to identify the appropriate indicator and to promote it as part of the indicator framework for the SDGs.

The two best available options for a Global Monitoring Indicator on financial protection are:

- The percentage of households experiencing catastrophic health expenditure (usually defined as a share of annual household income net of subsistence needs)
- The number of households falling below the poverty line or being pushed deeper into poverty due to out-of-pocket spending on health care

These indicators can also be framed in reverse, e.g. the share of the population that does not experience catastrophic health expenditure.

A recent report by the WHO and the World Bank recommends these two indicators,[118] and data availability has improved in recent years so that either indicator can be computed for a large number of countries. However, these indicators do not adequately measure the common and often deadly condition of an already impoverished household that simply cannot access health services because of cost.[119] These indicators are therefore likely vulnerable to under-counting. Moreover, the indicators do not provide a clear indication of the impact that out-of-pocket health expenditure might have on the overall social and economic situation of households.

It is also possible to evaluate the financial protection of health care systems in more synthetic ways, based on the rules of public financing for outpatient services, inpatient care, laboratory services, and medicines. Systems with full public financing will score high; those with heavy co-payments or out-of-pocket payments will score low. These synthetic calculations can be made annually based on health care rules and can be cross-checked and validated by comparison with the share of out-of-pocket outlays and by survey questions (e.g. “Were you and family members unable to access needed health services or medicines because of lack of family income?”).

Disaggregation: By sex and wealth quintile.

[117] Agyepong, Liu, Reddy et al (2014).
[118] World Health Organization, World Bank (2013). *Monitoring progress towards universal health coverage at country and global levels*. Joint WHO / World Bank Group Discussion Paper, Geneva, Switzerland.
[119] Moreno-Serra, R, C Millett, and PC Smith (2011). Towards Improved Measurement of Financial Protection in Health. *PLoS Med* 8(9): e1001087.

Comments and limitations: To be determined once the indicator has been specified.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: TBD.

Potential lead agency or agencies: WHO gathers data on health expenditures by triangulating information from several sources to estimate both government and private expenditures on health.[120]

Indicator 28: Proportion of persons with a severe mental disorder (psychosis, bipolar affective disorder, or moderate-severe depression) who are using services

Rationale and definition: There is growing recognition of the need for comprehensive mental health services to be offered as part of a universal health care (UHC) package. The World Health Organization's Mental Health Action Plan proposes a number of indicators on mental health, including this indicator, which measures service coverage for a selected set of severe mental disorders.[121] This indicator is calculated by dividing the number of cases of severe mental disorders (psychoses, bipolar affective disorder, or moderate-severe depression) receiving services by the total number of cases of severe mental disorder in the sampled population.[122]

Disaggregation: By sex and geographical location like rural and urban (to support targeting of healthcare systems). Other opportunities for disaggregation to be reviewed.

Comments and limitations: There have been a number of conferences and meetings discussing mental health in the post-2015 development agenda;[123] these groups should aim to build consensus around an appropriate target range for this indicator, which has yet to be determined. In addition, stigma against people suffering from severe mental disorders may lead to under-counting. Data collected from surveys and hospital administrative records should be compared against prevalence estimates to reduce under-counting.

Preliminary assessment of current data availability by Friends of the Chair: C

Primary data source: One option is to collect data on both the numerator and the denominator as part of routine population surveys, such as DHS surveys.[124] Alternatively, data for the numerator can be collected from hospital and clinic administrative records, while data for the denominator can be based on national or sub-national prevalence rates. National prevalence rates of psychosis, bipolar affective disorder, and moderate-severe depression are estimated annually as part of the global burden of disease study for all countries.[125]

[120] WHO Indicator and Measurement Registry (2011).
[121] WHO (2013d).
[122] See WHO. *Mental Action Plan 2013-2020*. (2013).
[123] See for example the Movement for Global Mental Health Post-2015 article: http://www.globalmentalhealth.org/post-2015-development-agenda
[124] WHO, *Mental Action Plan 2013-2020*.
[125] See i) Whiteford, Harvey A et al (2013). Global burden of disease attributable to mental and substance abuse disorders: findings from the Global Burden of Disease Study 2010. *Lancet* 382, 1575-86. And ii) Ferrari, Alize J et al (2013). Burden of

Potential lead agency or agencies: WHO.

Indicator 29: Contraceptive prevalence rate (MDG Indicator)

Rationale and definition: The contraceptive prevalence rate is defined as the percentage of women of reproductive age who use (or whose partners use) a contraceptive method at a given point in time. Women 'of reproductive age' is usually defined as women aged 15 to 49, but sexually active adolescents under 15 should be included. Increased contraceptive prevalence is also an important proximate determinant of inter-country differences in fertility and of ongoing fertility declines in developing countries. Contraceptive prevalence is influenced by people's fertility desires, availability of high-quality products and services; social norms and values; levels of education; and other factors, such as marriage patterns and traditional birth-spacing practices. It is an indicator of population and health, particularly women's access to reproductive health services. The level of contraceptive use has a strong, direct effect on the total fertility rate (TFR) and, through the TFR, on the rate of population growth. It also serves as a proxy measure of access to reproductive health services that are essential for meeting many health targets, especially the targets related to child mortality, maternal health, HIV/AIDS, and gender equality.[126]

Disaggregation: By age, urban/rural and marital status.

Comments and limitations: Common limitations to this indicator include under-monitoring and underestimation of overall use, vague time references, and insufficient accuracy.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Household surveys – some key surveys that include this information are: Demographic and Health Surveys (DHS), Fertility and Family Surveys (FFS), Reproductive Health Surveys (RHS) conducted with assistance from the US CDC, Multiple Indicator Cluster Surveys (MICS), and other national surveys.

Potential lead agency or agencies: The UN Population Division and UNFPA could ensure the collection of internationally comparable data.

Depressive Disorders by Country, Sex, Age, and Year: Findings form the Global Burden of Deisase Study 2010. *PLoS Med* 10:11.

[126] UN Population Division (2011b). *World Contraceptive Use 2011.*

Indicator 30: Current use of any tobacco product (age-standardized rate)

Rationale and definition: Tobacco use is a leading cause of preventable death in many developed countries, and is a growing problem and contributor to the burden of disease in developing countries. This indicator measures the prevalence of tobacco use (daily, non-daily, or occasional) of any tobacco product, including cigarettes, e-cigarettes, cigars, pipes, snuff, chew, etc., for adults aged 15 years and over.[127] It expands upon the WHO's recommendation to further track use of smokeless tobacco products. The age-standardized prevalence rate of tobacco use (adjusted according to the WHO regression method) allows for comparisons across countries and across time periods to determine trends.[128]

Disaggregation: By sex, age and urban/rural.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Household surveys.

Potential lead agency or agencies: WHO.

Complementary National Indicators for Goal 3:

3.1. **Percentage of births attended by skilled health personnel (MDG Indicator)**. The percentage of total live births that are attended by a skilled birth attendant trained in providing lifesaving obstetric care.

3.2. **Antenatal care coverage (at least one visit and at least four visits) (MDG Indicator)**. The percentage of women aged 15–49 with a live birth in a given time period that received antenatal care, provided by skilled health personnel, at least once during their pregnancy and by any provider four or more times during their pregnancy.

3.3. **Post-natal care coverage (one visit) (MDG Indicator)**. Similar to antenatal care coverage, the percentage of women aged 15–49 with a live birth that received post-natal care (usually for both mother and baby) provided by skilled health personnel at least once following the birth of their child and by any provider four or more times after birth.

3.4. **Coverage of iron-folic acid supplements for pregnant women (%)**. Percent of pregnant women regularly taking the recommended dose of iron-folic acid supplements.

3.5. **Incidence rate of diarrheal disease in children under 5 years**. Diarrhea is defined as 3 or more loose stools in a period of 24 hours or less.

3.6. **Percentage of 1 year-old children immunized against measles (MDG Indicator)**. The percentage of children under one year of age who have received at least one dose of measles-containing vaccine.

[127] WHO Indicator and Measurement Registry (2011).
[128] Ibid.

3.7. **Percent HIV+ pregnant women receiving PMTCT**. This indicator tracks the percent of HIV+ pregnant women on a regimen for the prevention of mother-to-child HIV transmission (PMTCT). In the absence of intervention, 15-45% of HIV+ pregnant women transmit the virus to their children. This rate can be reduced to levels below 5% with intervention.

3.8. **Condom use at last high-risk sex (MDG Indicator)**. The percentage of young men and women (aged 15–24) using of a condom the last time they had sexual intercourse with a non-marital, non-cohabiting sexual partner of those who had sex with such a partner in the last 12 months.

3.9. **Percentage of tuberculosis cases detected and cured under directly observed treatment short course (MDG Indicator).** The percentage of tuberculosis (TB) cases detected and cured, also known as the TB treatment success rate, is the number of new TB cases in a given year that were cured or completed a full treatment of directly observed treatment short (DOTS).

3.10. **Percentage of children under 5 with fever who are treated with appropriate anti-malarial drugs (MDG Indicator)**. The percentage of children aged 0–59 months who were ill with a fever in the two weeks before the survey and who received anti-malarial drugs during that time.

3.11. **Percentage of people in malaria-endemic areas sleeping under insecticide-treated bed nets (MDG Indicator).** The percentage of people who slept under an insecticide-treated mosquito net the night prior to the survey, disaggregated by age.

3.12. **Percentage of confirmed malaria cases that receive first-line antimalarial therapy according to national policy.** The percent of positively-diagnosed malaria cases that are treated with appropriate drugs.

3.13. **Percentage of suspected malaria cases that receive a parasitological test.** In malaria-endemic areas, all persons with fever seeking medical care should undergo diagnostic testing before treatment for malaria. Affordable, rapid-diagnostic test kits enable definitive diagnoses for all malaria cases.

3.14. **Percentage of pregnant women receiving malaria IPT (in endemic areas).** Malaria in pregnancy affects both the mother and the fetus. Intermittent preventive treatment in pregnancy (IPT) can effectively prevent malaria in pregnant women; all pregnant women in moderate- to high- malaria-transmission areas should receive IPT.

3.15. **Neglected Tropical Disease (NTD) cure rate.** It is vital that the billion people affected by neglected tropical diseases each year retrieve adequate treatment all the way to cure. The exact means by which this can be measured still needs to be defined.

3.16. **Incidence and death rates associated with hepatitis**. Prevalence and mortality rates for the various strains of hepatitis (A, B, E, etc.).

3.17. **Percentage of women with cervical cancer screening.** The percent of women receiving screening for cervical cancer. The WHO Global Monitoring Framework for Non-Communicable Diseases recommends this indicator.

3.18. **Percentage of adults with hypertension diagnosed and receiving treatment.** WHO's Global Monitoring Framework for non-communicable diseases calls for a 25% reduction in hypertension (raised blood pressure); to achieve this goal we recommend tracking the number of adults diagnosed with hypertension and those receiving treatment.

3.19. **Harmful use of alcohol.** WHO recommends a reduction in the harmful use of alcohol as part of the Global Monitoring Framework for Non-Communicable Diseases.[129] This indicator provides

[129] WHO (2014a).

information regarding the patterns of alcohol consumption in a given country, and consequently highlights the population that has a higher risk of experiencing alcohol-related acute harm, such as alcohol poisoning and automobile accidents, as well as chronic health complications, such as liver cancer and hypertension.

3.20. **Healthy life expectancy at birth**. This indicator measures the average number of years that a person can expect to live in "full health" by taking into account years lived in less than full health due to disease and/or injury.

3.21. **Waiting time for elective surgery.** This indicator measures how long a patient has to wait to have an elective procedure. Wait times help measure the availability of health services; cataract surgery is one example of an elective procedure that this indicator could measure.

3.22. **Prevalence of insufficient physical inactivity**. The percentage of people not reaching WHO recommendations for physical activity.[130]

3.23. **Fraction of calories from saturated fat and added sugar**. Percent of caloric intake coming from saturated fat and added sugar; an indicator of a healthy diet.

3.24. **Age-standardized mean population intake of salt (sodium chloride) per day in grams in persons aged 18+ years**. The amount of salt consumed per day; overconsumption of salt can affect hypertension and other non-communicable diseases.

3.25. **Prevalence of persons (aged 18+ years) consuming less than five total servings (400 grams) of fruit and vegetables per day**. Consumption of fruits and vegetables is crucial both for ensuring a healthy diet and maintaining a healthy weight; this indicator tracks the percent of people not eating the recommended amount of fruits and vegetables.

3.26. **Percentage change in per capita [red] meat consumption relative to a 2015 baseline**. Over-consumption of red meat is a risk factor for many non-communicable diseases; this indicator tracks changes in per capita red meat consumption, with the goal of reducing overconsumption in some countries.

3.27. **Age-standardized (to world population age distribution) prevalence of diabetes (preferably based on HbA1c), hypertension, cardiovascular disease, and chronic respiratory disease**. In addition to tracking mortality rates from non-communicable diseases, it will be important to track prevalence rates. As persons suffering from NCDs receive better treatment and live longer, mortality rates may no longer be an adequate measure of the health system's effectiveness at addressing these diseases (i.e. longer lives means higher mortality from NCDs as countries address communicable diseases). This indicator will help assess long-term management of these conditions.

3.28. **[Mortality from indoor air pollution] – to be developed**. This indicator tracks mortality from illnesses attributable to the household air pollution (often caused by cooking with solid fuels) including pneumonia, stroke, heart disease, chronic obstructive pulmonary disease (COPD), and lung cancer.

3.29. **Percentage of health facilities meeting service specific readiness requirements.** This indicator tracks the proportion of health facilities that offer a specific service and the capacity to provide that service. It is measured through the WHO Service Availability and Readiness Assessment that tracks staff, amenities, equipment, diagnostic capacity, and essential medicines and commodities.[131]

[130] WHO (2010).

[131] See WHO Service Availability and Readiness Assessment (SARA) annex on indicators: http://www.who.int/healthinfo/systems/SARA_Reference_Manual_Chapter4.pdf?ua=1

3.30. **Percentage of population with access to affordable essential drugs and commodities on a sustainable basis.** The percentage of the population that has reliable physical and financial access to essential drugs (e.g. vaccines, antibiotics, anti-retrovirals) and commodities (non-pharmaceutical equipment and supplies).

3.31. **Percentage of new health care facilities built in compliance with building codes and standards.** This indicator measures whether or not new health facilities are in compliance with national standards for human health and safety, as well as standards to withstand natural hazards (floods, earthquakes, and typhoons), a key component of disaster preparedness.

3.32. **Public and private R&D expenditure on health (% GNP):** This indicator tracks public and private resource mobilization for R&D on health as a share of GNP.

3.33. **Ratio of health professionals to population (MDs, nurse midwives, nurses, community health workers, EmOC caregivers).** The overall ratio of trained medical professionals to population; WHO currently tracks the ratio of physicians, nurses, and midwives, but Community Health Workers (CHWs) should be included where relevant.

3.34. **Percentage of women and men aged 15-49 who report discriminatory attitudes towards people living with HIV**: This indicator measures stigma and discrimination towards people living with HIV. This indicator is already collected in some countries through DHS surveys and is reported by UNAIDS in the Global AIDS Response Progress Reports.

3.35. **Stillbirth rate:** A stillbirth is defined as a baby born with no signs of life at or after 28 weeks' gestation. Around 2.6 million babies are stillborn each year mostly during labor, so this burden is preventable with access to quality care at birth.

Goal 4. Ensure inclusive and equitable quality education and promote life-long learning opportunities for all

Potential and Illustrative Global Monitoring Indicators:

Indicator 31: Percentage of children (36-59 months) receiving at least one year of a quality pre-primary education program

Rationale and definition: This indicator measures the percentage of children in the 36-59 months age group that are enrolled in an early childhood program. Programs can be defined fairly broadly ranging from private or community care to formal pre-school programs.

This is an important indicator for measuring child development. Exposure to at least a year of high-quality pre-primary education has consistent and positive short-term and long-term effects on children's development. In the short run, early cognitive skills, including reading and math skills, are positively affected by pre-primary education. In low- and middle-income countries, access to quality pre-primary education increases the share of students who enter primary school on time. High-quality preschool can produce lifelong benefits for society, with positive effects observed on years of completed schooling, secondary school completion, reduced crime, reduced early pregnancy, and increased earnings. These results encompass both small-scale demonstrations and large-scale programs, and are responsible for the impressive benefit-cost ratios for preschool (6 or larger, across high-, middle-, and low-income countries). Pre-primary education benefits all children, no matter their economic background, yet as with many other ECD services, those from the most disadvantaged backgrounds benefit the most.[132]

Disaggregation: By sex, location, and household income.

Comments and limitations: The indicator is less helpful in measuring the quality of pre-primary education care. Quality standards of structure (safety, access to clean water, small group sizes, etc.) and process (instructional and interactive skills of the teacher or caregiver) are important for children's learning and development, but much harder to measure.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Household surveys, including the Multiple Indicator Cluster Surveys (MICS) and Demographic and Health Surveys (DHS).

Potential lead agency or agencies: UNESCO, UNICEF, World Bank.

Indicator 32: Early Child Development Index (ECDI)

Rationale and definition: Developmental potential in early childhood is measured as an index, currently represented in the Multiple Indicator Cluster Survey (MICS) that assesses children aged 36-59 months in four domains: language/literacy, numeracy, physical, socio-emotional, and cognitive development. Each

[132] Myers, R (1992). *The twelve who survive: Strengthening Programmes of Early Childhood Development in the Third World*. London, UK: Routledge.

of these four domains is measured through instruments based on real-time observation. The MICS surveys calculate an overall Index Score as the percentage of children aged 36-59 months who are on track in at least three of the four domains.

Disaggregation: By sex, age and urban/rural.

Comments and limitations: A major shortcoming of this metric is that it describes a composite index. As emphasized in this report (Section III), composite indices should generally not be used for SDG monitoring purposes - particularly since they expand the number of variables that need to be considered under Global Monitoring Indicators. Moreover, it will be difficult to track the ECD Index in all countries since it relies on MICS data, which is only collected in a sub-set of countries. We therefore welcome suggestions for how the critical issue of ECD can be tracked in an indicator framework.

Other measures of caregiver- or parent-reported young child development exist or are under development, including the Early Development Instrument and the Index of Early Human Capability, which incorporate items representing each of these domains and are being used across high-, middle-, and low-income countries.[133] Important complements to this form of measure are those assessments that can capture development in specific areas over time (e.g. growth in language or emotional skills).

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Household surveys, including the Multiple Indicator Cluster Surveys (MICS).

Potential lead agency or agencies: UNICEF, UNESCO.

Indicator 33: Primary completion rates for girls and boys

Rationale and definition: Primary completion is measured by the Gross Intake Ratio, which is the total number of new entrants who reach the last grade of primary education (according to the International Standard Classification of Education or ISCED 2011[134]), regardless of age, expressed as percentage of the total population of the theoretical entrance age to the last grade of primary. Primary education is defined by ISCED 2011 as programs typically designed on a unit or project basis to provide pupils with fundamental skills in reading, writing and mathematics along with an elementary understanding of other subjects such as history, geography, natural science, social science, art, and music.

The Gross Intake Ratio to Last Grade of primary reports on the current primary access to last grade, stemming from previous years' of schooling and past education policies on entrance to primary education. It is a measure of first-time completion of primary education as it excludes pupils repeating the last grade. A high Gross Intake Ratio to Last Grade denotes a high degree of completion of primary education. As this calculation includes all new entrants to last grade (regardless of age), the Gross Intake Ratio may exceed 100%, due to over-aged or under-aged pupils entering the last grade of primary school for the first time.[135]

[133] Janus, M.and Offord, DR (2007). Development and psychometric properties of the Early Development Instrument. *Canadian Journal of Behavioural Science* 39, 1-22.
[134] See ISCED 2011: http://www.uis.unesco.org/Education/Documents/isced-2011-en.pdf
[135] As defined by UN DESA for the MDG Indicators.

Disaggregation: It is particularly important to disaggregate data for this indicator by sex, income, disability, region, and household income quintile, with particular attention to children in regions of conflict, since children in such regions are at greatest risk of dropping out of the schooling system.

Comments and limitations: Since the primary completion rate is typically a lagging rather than leading indicator when looking at factors affecting entry to school, it will be important to find other ways to measure progress on entry barriers.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data is preferred, and fairly easily available. It can be complemented with household surveys.

Potential lead agency or agencies: UNESCO.

Indicator 34: [Percentage of girls and boys who master a broad range of foundational skills, including in literacy and mathematics, by the end of the primary school cycle (based on credibly established national benchmarks)] – to be developed

Rationale and definition: This indicator is designed to measure the proportion of children who are proficient in reading and comprehending text in their primary language of instruction and those that are able to, at the very least, count and understand core mathematical operations and concepts, as a proportion of total children at the end of the primary schooling cycle in the country. Proficiency will need to be defined at the national level, but should cover the ability to read, decode, comprehend and analyze text in their primary language of instruction. This is a new aggregate indicator proposed to ensure such proficiency can be captured, as can the learning of basic mathematical skills that are known to have strong links with future academic performance.

Disaggregation: By sex and urban/rural.

Comments and limitations: Since 2005, over 60 developing countries have used some measure of reading or have participated in internationally comparable assessments of reading comprehension. There are no global standards for defining "proficiency in reading" primarily because of differences in language, curriculum design, and pedagogical approaches. However, it is recommended that each country adopts and/or defines a core set of standards that can be assessed either through school-based or household-based assessments. Several countries have national standards of foundational numeracy skills that are identified in national curricula frameworks. It is further recommended that each country adopts and/or defines foundational numeracy skills standards that, while being locally relevant, are referenced in some way to international benchmarks. It is particularly important that foundational numeracy skills are comparable to global standards since these skills are relevant across countries and can form the basis for future global competitiveness of the country's labor force.

The need to have measures of reading and mathematical skills has been stressed by various global initiatives including the Learning Metrics Task Force (which recommends such skills be measured at

grade 3).[136] This new indicator should build on the experiences of existing programs, including the Monitoring of Learning Achievement (MLA), Program on the Assessment of Student Achievement (PASA), Programme for International Student Assessment (PISA), Southern and Eastern Africa Consortium for Monitoring Educational Quality (SAQMEQ), the International Civic and Citizenship Education Study (ICCS), the Trends in International Mathematics and Science Study (TIMSS), and the Progress in International Reading Literacy Study (PIRLS).

This indicator should not be restricted to measurement of reading and mathematics; as countries develop comparable indicators for other domains of learning (physical wellbeing, social and emotional skills, culture and arts, literacy and communications, learning approaches and cognition, and science and technology), it is recommended that these indicators be tracked in a composite measure at the end of the primary school cycle. We support the ongoing efforts of the Learning Metrics Task Force to develop the indicators to track these areas globally. We also support ongoing efforts by the Task Force, UNESCO, UNICEF and other organizations in developing international benchmarks for these indicators, recognizing the variation of education systems and contexts across countries.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data, or school-based or citizen led learning assessments.

Potential lead agency or agencies: UNESCO.

Indicator 35: Secondary completion rates for girls and boys

Rationale and definition: Secondary completion is computed by dividing the total number of students in the last grade of secondary education school minus repeaters in that grade by the total number of children of official completing age. It captures dropout rates within secondary school as well as the transition rate between primary to secondary schooling by using as its denominator the total number of children of official completing age.

Secondary completion rates are important to measure since the dropout rates are highest in lower secondary grades. These are the ages when both the actual cost and the opportunity cost of education become higher, and when education systems struggle to provide high-quality instruction. There may be gender differences, as willingness to school girls is far more strongly determined by income and the broader costs of education than is the case for boys, and families are often unwilling to invest in the education of girls if this investment will not bring equivalent and direct economic gains to them and if girls continue to be valued only as wives and mothers.

Disaggregation: It is particularly important to disaggregate this indicator by sex, income, disability, region, and separately for children in regions of conflict, since children in such regions are at greatest risk of dropping out of the schooling system. Where administrative data does not capture this information, it may be important to capture it under such categories.

[136] UNESCO Institute for Statistics and the Center for Universal Education at the Brookings Institution (2013). *Toward Universal learning: Recommendations from the Learning Metrics Task Force.* Available at http://www.uis.unesco.org/Education/Documents/lmtf-summary-rpt-en.pdf

Comments and limitations: Secondary completion rates are more difficult to compare across countries since the structure of schooling varies widely, and the relevant age groups differ accordingly. Further, students at the secondary level have access to alternate pathways through vocational or other non-formal programs, so global comparison is harder. Secondary completion rates therefore can only be calculated on a national basis with reference to the number of years of schooling of that particular country. They are not easily comparable across countries. Yet it is an important indicator of the reach of the education system and therefore included as a global indicator.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data is preferred, but when there is limited data availability, it can be complemented with household surveys.

Potential lead agency or agencies: UNESCO.

Indicator 36: [Percentage of girls and boys who achieve proficiency across a broad range of learning outcomes, including in reading and in mathematics by end of the lower secondary schooling cycle (based on credibly established national benchmarks)] – to be developed

Rationale and definition: The indicator measures the percentage of girls and boys who are "proficient" in broad learning outcomes, and at a minimum in reading and in mathematics. Proficiency will need to be defined through national level standards, but should cover the ability to read, decode, comprehend, and analyze text in the primary language of instruction, and to understand advanced mathematical concepts, reason, and resolve complex problems.

While the mathematics measure is easier to compare across countries, each country will need to identify its own set of standards for proficiency. It is recommended that there be a serious effort to benchmark national standards against comparable international standards where they exist. It is also recommended that this indicator be measured through either school-based or household-based assessments annually to track progress of the education system. The fundamental danger of skills-based indicators is that such indicators can only capture a small slice of the range of competencies that students are expected to acquire; assessing a subset can often focus education systems too exclusively on that subset, thereby leading to neglect of the broader set of competencies. This indicator is intended to measure the baseline or minimum set of skills expected of students at the end of the lower secondary schooling cycle. A broader indicator should be designed to ensure that other competencies are not neglected.

Disaggregation: Opportunities for disaggregation to be reviewed once the indicator has been defined.

Comments and limitations: Proficiency standards do not exist systematically within countries; we recommend that countries identify/adopt a core set of standards that are designed with reference to global standards, where they exist.

Other international efforts such as the Learning Metrics Task Force recommend measuring proficiency in mathematics, amongst others, at the end of lower secondary. We support the ongoing efforts of the Learning Metrics Task Force to develop the indicators to track these areas globally. This new indicator should build on the experiences of existing programs, including the Monitoring of Learning Achievement

(MLA), Program on the Assessment of Student Achievement (PASA), Programme for International Student Assessment (PISA), Southern and Eastern Africa Consortium for Monitoring Educational Quality (SAQMEQ), the Trends in International Mathematics and Science Study (TIMSS), and the Progress in International Reading Literacy Study (PIRLS).

We also support ongoing efforts by the Task Force, UNESCO, UNICEF and other organizations in developing international benchmarks for these indicators, recognizing the variation of education systems and contexts across countries.

Preliminary assessment of current data availability by Friends of the Chair: B
Primary data source: Administrative data, or school-based or citizen led learning assessments.

Potential lead agency or agencies: UNESCO.

Indicator 37: Tertiary enrollment rates for women and men

Rationale and definition: The indicator measures the total enrollment in tertiary education regardless of age, expressed as a percentage of the total population of the five-year age group following on from secondary school leaving. Tertiary education is defined as per the International Standard Classification of Education (1997) levels 5 and 6.

Tertiary enrollment rates are indicative of the quality of the labor force in the country, and a wide gap between the tertiary enrollment rates and unemployment rates indicate either an inability of the economy to absorb its trained graduates, or the "employability" of the graduates which indicates a mismatch between the skills being imparted through the tertiary education system and the skills demanded by the market.

Disaggregation: Share of enrollment by sex, urban/rural and by field of study (to track women in science, mathematics, engineering, etc.).

Comments and limitations: Tertiary enrollment rates by themselves are not predictors of youth unemployment rates.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data is preferred, but when there is limited data availability, it can be complemented with household surveys.

Potential lead agency or agencies: UNESCO.

Complementary National Indicators for Goal 4:

4.1. [**Percentage of girls and boys who acquire skills and values needed for global citizenship and sustainable development (national benchmarks to be developed) by the end of lower secondary] – to be developed**. This indicator measures the percentage of children who acquire skills and values needed for them to be productive "global citizens," recognizing that beyond basic academic work, there are values and skills that enable children to grow up to become socially responsible, emotionally mature, and productive members of society.

4.2. **Percentage of children under 5 experiencing responsive, stimulating parenting in safe environments.** The MICS indicator measures the percentage of children below 5 years with whom an adult has engaged in four or more activities to promote learning and school readiness in the past 3 days.[137]

4.3. **Number of children out of school.** This UNESCO indicator measures the number of school-aged children out of school. Particular attention should be paid to children in conflict- or disaster-affected countries.

4.4. **[Percentage of adolescents (15-19 years) with access to school-to-work programs] – to be developed**. This indicator measures the percentage of adolescents who are offered programs that enable them to transition from school to employability and work, either through vocational or apprenticeship training programs. It is marked as "to be developed" as there is no global definition yet of what constitutes a school-to-work program.

4.5. **Literacy rate of 15-24 year-olds, women and men (MDG Indicator)**. This MDG Indicator measures the proportion of young adult women and men that are literate as a proportion of the total population within that age group.

4.6. **[Percentage of young adults (18-24 years) with access to a learning program] – to be developed**. This indicator measures the percentage of young adult women and men that can enroll and learn a new skill or course to improve their knowledge, skills, and competencies.

4.7. **[Indicator on share of education facilities that provide an effective learning environment] – to be developed.** This indicator measures the quality and adequate resourcing of educational facilities.

4.8. **Pupil to computer ratio in primary and secondary education.** This UNESCO indicator measures access to digital technology in schools.

4.9. **[Indicator on scholarships for students from developing countries] – to be developed**.

4.10. [**Indicator on supply of qualified teachers] – to be developed**. This indicator will track the supply of qualified teachers.

4.11. **Presence of legal frameworks that guarantee the right to education for all children for early childhood and basic education, and that guarantee a minimum age of entry to employment not below the years of basic education**. This indicator tracks the legal guarantee of the right to education.

[137] See UNICEF webpage on ECD Indicators in Multiple Indicator Cluster Surveys (MICS): http://www.childinfo.org/ecd_indicators_mics.html

Goal 5. Achieve gender equality and empower all women and girls

Potential and Illustrative Global Monitoring Indicators:

Indicator 38: Prevalence of girls and women 15-49 who have experienced physical or sexual violence [by an intimate partner] in the last 12 months

Rationale and definition: Violence against women and girls is important not only because of the moral or public health issues it raises, but also since the threat of 'domestic' violence keeps women in the home and further constrains women's movements and actions, limiting their life choices. The Global Burden of Disease estimates that over 30% of all girls and women aged 15 and older suffer physical or sexual partner abuse during their lifetime. Knowing the incidence and prevalence of violence is a first step to ensuring adequate prevention policies.

This indicator measures the occurrence of violence against girls and women by intimate partners. Violence is defined as physical and/or sexual violence and the threat of such violence. Since most violence against women is perpetrated by their husband or intimate partner, this measure captures most incidences of violence against women. The 12-month measure of partner violence is better suited than a lifetime measure, to reveal changes in levels and risks of violence over time.

Disaggregation: By frequency, age, marital status, urban/rural, and type of and severity of violence.

Comments and limitations: Measures of partner violence in high-income countries would need to be re-calculated to conform to the data available globally.

It has also been suggested that intimate partner violence be complemented by a broader measure of violence experienced by women and girls. Since the data is based on experiential surveys, it would be quite simple to include both measures.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Household surveys.

Potential lead agency or agencies: WHO and UNSD collect this data based on international and national surveys.[138]

Indicator 39: Percentage of referred cases of sexual and gender-based violence against women and children that are investigated and sentenced

Rationale and definition: Sexual and gender-based violence remains widespread, and too often ends in impunity. This indicator, recommended as a measure under UNSCR 1325 on women and peace and security, assesses how the police and justice system process and manage violence against women and children. The three stages – monitoring, investigating, and sentencing – are all important and interrelated. Monitoring suggests confidence in the system, investigation shows commitment by the police/legal establishment, and sentencing shows justice being achieved.

[138] UN Statistics Division (2010). *The World's Women 2010: Trends and Statistics*. New York, NY: UN Statistics, 127.

This indicator is also a good proxy for a broader measure of the quality of the rule of law and access to justice in a given country. In order to know whether a justice system is performing, several aspects must be measured: the capacity to redress crimes, whether citizens trust formal systems enough to actually go to police and courts, and the rates of redress. Each of these pieces of information gives an important part of the picture, and focusing on the treatment of particularly vulnerable groups is a good test of the system as a whole.

Disaggregation: By sex, age and urban/rural. Further opportunities for disaggregation to be reviewed.

Comments and limitations: Limitations include the lack of data and inconsistency in monitoring across countries; lack of gender-sensitivity, capacity, and resources of the police and judicial system; persistent discriminatory attitudes and practices; and the likelihood that these crimes are often resolved informally within the community are major ongoing challenges.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data.

Potential lead agency or agencies: Civil society networks such as the Global Network of Women Peacebuilders are actively engaged in building capacity to measure and implement this and other indicators from the UNSCR 1325.[139] UN Women could take on responsibility for gathering data.

Indicator 40: Percentage of women aged 20-24 who were married or in a union before age 18

Rationale and definition: This indicator tracks the prevalence of child marriage, as defined by UNICEF. Child marriage is a violation of basic rights and may cause lifelong harm. Evidence shows that most girls who marry early abandon formal education and many have early and often high-risk pregnancies.[140] Child brides are also at higher risk of abuse, exploitation, and separation from family and friends, which can all have major consequences on health and wellbeing.

Disaggregation: By age, urban/rural, ethnicity, wealth quintile.

Comments and limitations: TBD.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: Household surveys.

Potential lead agency or agencies: UNICEF.

[139] Global Network of Women Peacebuilders (2012). *Women Count - Security Council Resolution 1325: Civil Society Monitoring Report*.

[140] See UNICEF webpage on Child marriage http://www.childinfo.org/marriage.html

Indicator 41: Percentage of girls and women aged 15-49 years who have undergone FGM/C

Rationale and definition: The prevalence of harmful traditional practices, particularly the practice of female genital mutilation (FGM), is measured as the percentage of women aged 15-49 who respond positively to surveys asking if they themselves have been cut. FGM refers to all procedures involving partial or total removal of the external female genitalia or other injury to the female genital organs for non-medical reasons. FGM has no known health benefits, and is on the contrary painful and traumatic, with immediate and long-term health consequences. The practice reflects deep-rooted gender inequality and is an extreme form of discrimination against women.[141]

Disaggregation: By age, ethnicity, region, and wealth quintile. WHO further distinguishes by four categories of FGM.[142]

Comments and limitations: Many countries' household surveys do not include the necessary questions to estimate FGM/C prevalence, and/or do not report on the prevalence among girls aged 15-19.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: Household surveys.

Potential lead agency or agencies: UNICEF.

Indicator 42: Average number of hours spent on paid and unpaid work combined (total work burden), by sex

Rationale and Definition: This indicator captures individuals' work burden, both paid and unpaid. It follows the recommendations of the Stiglitz Commission (2007) and the minimum set of gender indicators proposed by the Inter-agency and Expert Group on Gender Statistics (IAEG-GS).[143]

Measuring unpaid work helps to expose the full range of possible economic contributions, including the home production of goods and services. It also exposes women's disproportionate unpaid work burden. For example, in Nepal and Kenya when unpaid and paid work are combined, women work 1.4 hours for every hour worked by men.[144] Time poverty is relevant for welfare and wellbeing analysis since it can reflect reduced leisure time (except if this is due to non-voluntary unemployment).[145]

---

[141] World Health Organization (2008). *Eliminating female genital mutilation: An interagency statement - OHCHR, UNAIDS, UNDP, UNECA, UNESCO, UNFPA, UNHCR, UNICEF, UNIFEM, WHO.* Online at http://www.who.int/reproductivehealth/publications/fgm/9789241596442/en

[142] See WHO website on Female Genital Mutilation (FGM): http://www.who.int/reproductivehealth/topics/fgm/en

[143] UN Statistics Division (2013). *Time Use Statistics to Measure Unpaid Work, Presentation to the Seminar on Measuring the Contribution of Men and Women to the Economy*. UNSD: New York. See: http://unstats.un.org/unsd/statcom/statcom_2013/seminars/Measuring/Presentation_of_UN%20Statistics%20Division.pdf. See also UN Economic and Social Council (2012). *Report of the Secretary General on Gender Statistics*. Available at http://unstats.un.org/unsd/statcom/doc13/2013-10-GenderStats-E.pdf

[144] ActionAid (2013). *Making Care Visible: Women's unpaid care work in Nepal, Nigeria, Uganda and Kenya*. Action Aid: London.

[145] OECD (2014). *Time Use as a transformative indicator for gender equality in the post-2015 agenda*. OECD Development Centre: Paris.

Measuring unpaid work is also essential to ensure the effectiveness of women's empowerment programs. The time spent by women and girls to collect water, for example, or on care activities can be significantly reduced by a gender impact analysis of public service provision and infrastructural development, such as electricity, roads, rural schools, or water.

Disaggregation: By sex, age and urban/rural.

Comments and limitations: Despite considerable advances in time use surveys over the past two decades, time use data is relatively limited. In a 2012 UNSD review of gender statistics, time use surveys were found in only 48% of respondent countries (approximately 60 countries). Substantial financial investments are therefore required to bolster the technical capacity of National Statistical Offices and to design universally applicable time use survey methods, see for example the work of the UN Trial International Classification of Activities for Time-Use Statistics (ICATUS).

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: Household surveys.

Potential lead agency or agencies: ILO, with IAEG-GS (UNSD).

Indicator 43: Percentage of seats held by women and minorities in national parliament and/or sub-national elected office according to their respective share of the population (modified MDG Indicator)

Rationale and definition: This modified MDG Indicator measures the ratio of the percentage of seats held by women and minorities[146] (including indigenous people) in legislative bodies (national, regional, local) divided by their respective population share. It demonstrates the extent to which women and minorities have equal access to key decision-making positions within formal political processes. Participation in elected office is a key aspect of women's and minorities' opportunities in political and public life, and is therefore linked to their empowerment. Their presence in decision-making bodies alters dynamics and can help bring to light women's and minorities' concerns.

Disaggregation: Further opportunities for disaggregation to be reviewed.

Comments and limitations: This indicator cannot measure actual political decision-making power, and women and minorities can still face many obstacles in carrying out their political mandates.[147] Also, it cannot be assumed that because there are more women and/or minorities in parliament that they will automatically promote gender or minority issues.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Administrative data.

[146] Minorities are here defined as a group numerically inferior to the rest of the population of a State, in a non-dominant position, whose members - being nationals of the State - possess ethnic, religious or linguistic characteristics differing from those of the rest of the population and show, if only implicitly, a sense of solidarity, directed towards preserving their culture, traditions, religion or language.

[147] United Nations (2003), p.30.

Potential lead agency or agencies: Data on women in national parliament is readily obtainable from national sources and from the Inter-Parliamentary Union (IPU). Data on women in city, state or provincial level elected office are less available. The United Cities and Local Governments (UCLG) Standing Committee on Gender Equality has started gathering information on women councilors and mayors.[148] Data on minorities are generally less available, so a significant effort would need to be made to collect such disaggregated data.

Indicator 44: Met demand for family planning (modified MDG Indicator)

Rationale and definition: This indicator tracks the proportion of demand for family planning which has been satisfied. It is the percentage of women (or their partners) who desire either to have no further children or to postpone the next child and who are currently using a modern contraceptive method.

This is now a broadly accepted indicator that reflects both "the extent to which partners, communities and health systems support women in acting on their choices, and monitors whether women's stated desires regarding contraception are being fulfilled. It calls attention to inequities in service access and is therefore used to promote a human rights-based approach to reproductive health."[149] Women have the right to determine whether or not to have children, as well as the number and spacing of their pregnancies, and family planning is a key dimension of access to reproductive health. In less developed countries, between one-fourth and one fifth of pregnancies are unintended.[150]

Disaggregation: By age, income quintile, marital status, urban/rural, ethnicity, etc.

Comments and limitations: This indicator is an improvement over the MDG Indicator on unmet need because it is more easily understood and is linearly correlated with contraceptive prevalence. The indicator is calculated as a percentage of all women of reproductive age who are married or in a union,[151] so it does not include adolescents who are sexually active. This is a key omission since cultural norms and/or lack of sex education may prohibit sexually active adolescents from exercising their right to reproductive health services.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Household surveys.

Potential lead agency or agencies: UNFPA and the UN Population Division collect data for this survey-based indicator.

[148] See website of the UCLG Standing Committee on Gender Equality: http://women.uclg.org
[149] UNFPA (2010). *How Universal is Access to Reproductive Health? A review of the evidence.* UNFPA: New York: UNFPA. Available at https://www.unfpa.org/webdav/site/global/shared/documents/publications/2010/universal_rh.pdf
[150] WHO (2005). *The World health report 2005: make every mother and child count.* WHO: Geneva. Available at http://www.who.int/whr/2005/whr2005_en.pdf?ua=1
[151] WHO webpage: http://www.who.int/reproductivehealth/topics/family_planning/unmet_need_fp/en

Complementary National Indicators for Goal 5:

5.1. **Gender gap in wages, by sector of economic activity**. This indicator is the difference between male and female earnings, expressed as a percentage of male earnings. It is a measure of gender equality and discrimination, and should be disaggregated by sector of activity.

5.2. **Share of women on corporate boards of national/multinational corporations (MNCs)**. This indicator is the overall percentage of women on the corporate boards of national/multinational corporations and is a measure of gender equality.

5.3. **Percentage of women without incomes of their own**. This indicator measures the number of women heads of household or women partners of male heads of household who do not have independent sources of income. The measure allows some indication of women's economic dependency within households.

5.4. **Adolescent birth rate (MDG Indicator).** This indicator is the number of births per 1,000 women ages 15-19 and tracks teenage pregnancies.

5.5. **Percentage of young people receiving comprehensive sexuality education.** Comprehensive sexuality education includes age-appropriate programs both within and out of school that enable young people to make informed decisions about their sexuality. These programs cover scientific information about human development, anatomy, and pregnancy, as well as information about contraception and sexually transmitted infections (STIs). UNFPA monitors these types of programs. They additionally recommend that curricula should address social issues surrounding sexuality and reproduction, "including cultural norms, family life and interpersonal relationships."[152]

[152] UNFPA website: http://www.unfpa.org/comprehensive-sexuality-education

Goal 6. Ensure availability and sustainable management of water and sanitation for all

Potential and Illustrative Global Monitoring Indicators:

Indicator 45: Percentage of population using safely managed water services, by urban/rural (modified MDG Indicator)

Rationale and definition: This indicator measures the percentage of the urban and rural population using safely managed drinking water services, as defined by the WHO/UNICEF Joint Monitoring Programme. This ambitious indicator goes beyond the previous "basic drinking water" indicator as it has been designed to incorporate an assessment of the quality and safety of the water people use.

Households are considered to have access to safely managed drinking water service when they use water from a basic source on premises. The term 'safely managed' is proposed to describe a higher threshold of service; for water, this includes measures for protecting supplies and ensuring water is safe to drink.[153]

Lack of safe drinking water is a major cause of illness and mortality, as a result of exposure to infectious agents, chemical pollutants, and poor hygiene. Inadequate access to water in the home is also a source of economic disadvantage by requiring large commitment of human resources to fetching and carrying water.[154]

A basic drinking water source is a source or delivery point that by nature of its construction or through active intervention is protected from outside contamination with fecal matter. Basic drinking water sources can include: piped drinking water supply on premises; public taps/stand posts; tube well/borehole; protected dug well; protected spring; rainwater; and bottled water (when another basic source is used for hand washing, cooking, or other basic personal hygiene purposes).[155]

Disaggregation: By urban/rural. Further opportunities for disaggregation to be reviewed.

Comments and limitations: The monitoring methodology for this indicator is ready and being piloted in several countries. Where the data is unavailable, we suggest that countries may, on an interim basis, continue to use the "basic drinking water" indictor, defined as the percentage of population using a basic source with a total collection time of 30 minutes or less for a round trip including queuing.

Since this indicator is quite ambitious and the objective is the progressive elimination of inequalities in access, an intermediary indicator to measure universal basic access by 2030 could be "Percentage of population using basic safe water."

---

[153] Water Supply & Sanitation Collaborative Council (WSSCC) (2014). *WASH POST-2015: proposed targets and indicators for drinking-water, sanitation and hygiene.* Available at http://www.wssinfo.org/fileadmin/user_upload/resources/post-2015-WASH-targets-factsheet-12pp.pdf

[154] UNESCO Water World Assessment Programme. Available at http://webworld.unesco.org/water/wwap/wwdr/indicators/pdf/F4_Access_to_safe_drinking_water.pdf

[155] WHO-UNICEF Joint Monitoring Programme (2013). "Post-2015 WASH Targets and Indicators." Available at http://www.wssinfo.org/post-2015-monitoring

In addition, this measure does not fully measure the quality of services, i.e. accessibility, quantity, and affordability.[156]

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: Household surveys and administrative data.

Potential lead agency or agencies: The WHO/UNICEF Joint Monitoring Program (JMP) collects data for this indicator. To the extent possible, the collection and monitoring mechanisms should be fully integrated in the national statistical systems.

Indicator 46: Percentage of population using safely managed sanitation services, by urban/rural (modified MDG Indicator)

Rationale and definition: The indicator measures the percentage of the population in urban and rural areas using safely managed sanitation services, as defined by the WHO/UNICEF Joint Monitoring Programme. This ambitious indicator goes beyond the pre-2015 "improved sanitation" indicator.

Safely managed sanitation services are those that effectively separate excreta from human contact, and ensure that excreta do not re-enter the immediate environment. This means that household excreta are contained, extracted, and transported to designated disposal or treatment site, or, as locally appropriate, are safely re-used at the household or community level. Each of the following types of facilities are considered adequate if the facility is not shared with other households: a pit latrine with a superstructure, and a platform or squatting slab constructed of durable material (composting latrines, pour-flush latrines, etc.); a toilet connected to a septic tank; or a toilet connected to a sewer network (small bore or conventional).[157]

Access to adequate excreta disposal facilities is fundamental to decrease the fecal risk and the frequency of associated diseases. The use of basic sanitation facilities reduces diarrhea-related morbidity in young children and also helps accelerate economic and social development in countries where poor sanitation is a major cause for missed work and school days because of illness. Its association with other socioeconomic characteristics (education, income) and its contribution to general hygiene and quality of life also make it a good universal indicator of human development.[158]

Disaggregation: By urban/rural. Further opportunities for disaggregation to be reviewed.

Comments and limitations: Since this indicator is quite ambitious and the objective is progressive elimination of inequalities in access, an intermediary indicator to measure universal basic access by 2030 could be "Percentage of population using basic adequate sanitation."

In addition, this measure does not fully measure the quality of services, i.e. accessibility, quantity, and

[156] WSSCC (2014).
[157] Ibid.
[158] UN DESA (2007b). *Indicators of Sustainable Development: Guidelines and Methodologies – Methodology sheets.* UN DESA: New York. Available at http://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets/poverty/improved_sanitation.pdf.

affordability,[159] or the issue of facilities for adequate menstrual hygiene management.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: Household surveys and administrative data.

Potential lead agency or agencies: The WHO/UNICEF Joint Monitoring Program (JMP) collects data for this indicator. To the extent possible the collection and monitoring mechanisms should be fully integrated in the national statistical systems.

Indicator 47: Percentage of wastewater flows treated to national standards [and reused] – to be developed

Rationale and definition: Lack of treatment of domestic and industrial wastewater presents a serious health and environmental hazard in many cities, particularly in developing countries where 80-90% of urban wastewater is untreated or insufficiently treated when discharged.[160] Even in developed countries wastewater is not universally treated. Global rates of wastewater generation are increasing at an exponential rate as a result of rapid population growth and urbanization. A huge volume of untreated wastewater is dumped directly into water sources, threatening human health, ecosystems, biodiversity, food security, and the sustainability of water resources.[161]

For this reason we propose that an indicator on wastewater treatment be added to the post-2015 monitoring framework. There are many ways to define wastewater. Broadly defined, wastewater is a combination of one or more of: domestic effluent consisting of blackwater (excreta, urine and fecal sludge) and greywater (kitchen and bathing wastewater); water from commercial establishments and institutions, including hospitals; industrial effluent, storm water and other urban run-off; agricultural, horticultural and aquaculture effluent, either dissolved or as suspended matter.[162]

Wastewater treatment is the process of removing suspended and dissolved physical, chemical, and biological contaminants to produce (a) water that is safe to be discharged to the environment or suitable for reuse and (b) a solid sludge suitable for disposal or reuse (e.g. as fertilizer). Using advanced technology, it is now possible to re-use water after treatment for agricultural purposes, industry, or even as drinking water.[163]

Disaggregation: By source, including domestic, commercial, and industrial effluents, and storm water runoff.

Comments and limitations: The global community has only recently started working to build a common vision on wastewater management. Currently, it is estimated that 80% of effluent flows are not monitored, so data availability will be a challenge.

[159] WSSCC (2014).
[160] UNESCO (2011). Global Challenge of Wastewater: Examples from Different Countries. Presentation at World Water Week in Stockholm, August 21-27, 2011.
[161] Ibid.
[162] Corcoran, E et al (eds) (2010). *Sick Water? The central role of waste-water management in sustainable development.* A Rapid Response Assessment, United Nations Environment Programme, UN-HABITAT. GRID-Arendal. Available at www.grida.no
[163] Ibid, and UNESCO (2011).

Primary data source: Administrative data, including facility inventories.

Preliminary assessment of current data availability by Friends of the Chair: B

Potential lead agency or agencies: To be determined, options include WHO/UNICEF Joint Monitoring Programme (JMP), UNEP, and UN-Habitat.

Indicator 48: [Indicator on water resource management] – to be developed

Rationale and definition: The Integrated Water Resources Management (IWRM) approach aims to coordinate the development and management of water, land, and related resources to maximize equitable economic and social welfare, without damaging vital ecosystems.[164] IWRM is a crucial component of broader water resources management, which also includes the protection of water-related ecosystems, water use efficiency, and water scarcity (covered across our framework). IWRM policies and plans should be implemented nationally, regionally, and through transboundary cooperation and across sectors as appropriate.

Disaggregation: TBD.

Comments limitations: The Global Expanded Monitoring Initiative (GEMI) co-led by WHO, UNEP and UN-Habitat is currently working to develop this indicator.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: Administrative data/TBD.

Potential lead agency or agencies: WHO, UNEP and UN-Habitat.

Indicator 49: Proportion of total water resources used (MDG Indicator)

Rationale and definition: This MDG Indicator measures water stress and is defined as the total volume of groundwater and surface water abstracted (withdrawn) from their sources for human use (e.g.in sectors such as agriculture, industry, or municipal), expressed as a percentage of the total annual renewable water resources. This indicator shows whether a country abstracts more than its sustainable supply of freshwater resources. It can be used to track progress in the sustainable, integrated, and transparent management of water resources.

Disaggregation: Since the indicator can be disaggregated to show the abstractions by sector (also showing use efficiencies for each sector), it can help identify and manage competing claims on water resources by different users, and in different geographical locations.[165]

Comments and limitations: Many countries do not have good assessments of their aquifer volumes and recharge/discharge calculations, so important efforts will need to be made to improve data gathering.

[164] See Global Water Partnership website: http://www.un.org/waterforlifedecade/iwrm.shtml
[165] See UN DESA (2007a).

Ideally the indicator should be calculated for individual water basins since demand and supply need to be balanced at the basin level.

This indicator does not measure progress towards the important issue of increasing water-use efficiency. Public policies must try to address water stress and manage water resources sustainably, while satisfying all different demands.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Administrative data.

Potential lead agency or agencies: The FAO Aquastat and/or UNEP can help collect data at the country level.[166]

Complementary National Indicators for Goal 6:

6.1. **Percentage of population practicing open defecation**. This indicator measures population not using any sanitation facility and is a strong measure of poverty.

6.2. **Percentage of population with basic hand washing facilities with soap and water at home**. This indicator measures access to soap and water at hand washing facilities in the home, using WHO-UNICEF JMP definitions. It should be measure by location in the home: near the food preparation area and in or near sanitation facilities.

6.3. **Proportion of the population connected to collective sewers or with on-site storage of all domestic wastewaters.** This indicator measures the population with safe sewage storage or municipal sewer hook-ups.

6.4. **Percentage of pupils enrolled in primary and secondary schools providing basic drinking water, adequate sanitation, and adequate hygiene services**. This indicator measures access to drinking water, gender separated sanitation facilities, and hand washing facilities in schools, using WHO-UNICEF JMP definitions.

6.5. **Percentage of beneficiaries using hospitals, health centers, and clinics providing basic drinking water, adequate sanitation, and adequate hygiene**. This indicator measures access to drinking water, gender separated sanitation amenities, and hand washing facilities for patients in health facilities, using WHO-UNICEF JMP definitions.

6.6. **Proportion of the flows of treated municipal wastewater that are directly and safely reused.** This is an alternative to Indicator 47 to track treatment and reuse of wastewater.

6.7. **[Monitoring of international river shed authorities on transboundary river-shed management] – to be developed**. Rivers, as well as other freshwater ecosystems, are crucial for human survival. They are also very rich in biodiversity. Rivers travel across borders and within countries, and are subject to damming, pollution, and storage in reservoirs. A suitable indicator must be developed to measure progress towards the sustainable trans-boundary management of rivers.

6.8. **[Indicator on international cooperation and capacity building in water and sanitation-related activities] – to be developed.**

[166] For more information see: http://www.fao.org/ag/aquastat

6.9. **[Indicator on participation of local communities for improving water and sanitation management] – to be developed.**

Goal 7. Ensure access to affordable, reliable, sustainable, and modern energy for all

Potential and Illustrative Global Monitoring Indicators:

Indicator 50: Share of the population using modern cooking solutions, by urban/rural

Rationale and definition: This indicator measures the share of the population relying primarily on non-solid fossil fuels for cooking, as defined by the Sustainable Energy For All (SE4All) Framework Report.[167] Currently available databases (including the WHO's Global Household Energy Database, and the IEA World Energy Statistics and Balances) only support binary tracking of access (that is a household either has, or does not have access). This is why, as a starting point, the SE4All global tracking framework is using this simple definition of access to modern cooking solutions. While the binary approach serves the immediate needs of global tracking, there is a growing consensus that measurement of access should reflect a continuum of improvement, as recognized in the SE4All report.

Indeed, defining access to modern cooking solutions as the share of the population relying primarily on non-solid fossil fuels for cooking omits the role of the cook stove. Yet, it is the combination of the two that will determine levels of efficiency, pollution, and safety outcomes. Meanwhile, individual behaviors, cooking practices, and housing characteristics also affect the actual performance of a household's cooking solutions.

For this reason, the SE4All is planning to use a multi-tier metric for tracking access to modern cooking solutions. This metric will measure access to modern cooking solutions by measuring the technical performance of the primary cooking solution (including both the fuel and the cook stove) and assessing how this solution fits in with households' daily life. This metric also includes consideration on indoor air pollution/ventilation and kerosene cooking/lighting. Measuring access to modern cooking solutions presents the possibility to improve the health of poor households, in particular women and girls who generally have the responsibility for cooking for the household. WHO estimates that over 4 million people die prematurely from illness attributable to the household air pollution from cooking with solid fuels.[168]

Disaggregation: By urban/rural and sex of head of household.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Household surveys.

Potential lead agency or agencies: The Sustainable Energy for All (SE4All), IEA and WHO, can provide

[167] Banerjee, SG et al (2013). *Global tracking framework, Vol. 3. Sustainable energy for all*. The World Bank: Washington D.C. See also World Energy (2012). *Energy Access: Tracking Methodology for Access to Modern Cooking Solutions*. Available at http://www.worldenergy.org/documents/monaco_consultation_energy_access__cooking.pdf

[168] WHO. *Household air pollution and health Fact sheet N°292*. Available, online at http://www.who.int/mediacentre/factsheets/fs292/en

data for this indicator.

Indicator 51: Share of the population using reliable electricity, by urban and rural

Rationale and definition: This indicator measures the share of the population with an electricity connection available at home or relying primarily on electricity for lighting, as defined by the Sustainable Energy For All (SE4All) Framework Report.[169] As with access to modern cooking solutions, currently available global databases (including the World Bank's Global Electrification Database, and the IEA World Energy Statistics and Balances) only support a binary tracking of access to electricity. This metric does not capture important dimensions of access to electricity, including:
(i) off-grid and isolated mini-grids solutions, which are required in many countries as transitional alternatives to grid-based electricity, and could potentially serve as long-term solutions in geographically remote areas;
(ii) supply problems, which are common in developing countries, where grid electricity suffers from irregular supply and frequent breakdowns;
(iii) problems of quality (such as low or fluctuating voltage); and
(iv) the difference between electricity supply and electricity services, which implies the ownership of the appropriate electrical appliance and the actual use of electricity.

For these reasons, SE4All is planning to use a multi-tier metric for measuring access to electricity. This metric will measure the degree of access to electricity supply along various dimensions, including quantity (peak available capacity), duration, evening supply, affordability, legality, and quality. This is complemented by a parallel multi-tier framework that captures the use of key electricity services.[170]

Disaggregation: By urban/rural and sex of head of household.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: A

Potential lead agency or agencies: The SE4All, IEA and World Bank can provide data for this indicator.

Indicator 52: Implicit incentives for low-carbon energy in the electricity sector (measured as US$/MWh or US$ per ton avoided CO_2)

Rationale and definition: To reduce greenhouse gas emissions to the socially optimal level, the social cost of greenhouse gas emissions needs to be applied, which in turn requires government policies to apply carbon prices using a range of measures, including but not limited to regulation, taxes, or carbon markets. This indicator measures (in $/t$CO_2$e) the level of effective carbon price in the electricity sector, as defined by the OECD report on effective carbon prices, as a net cost for society for each unit of GHG abatement induced. [171] A similar definition was proposed by the Australian Productivity Commission report on carbon emission policies in key economies.[172]

[169] Ibid.
[170] Ibid.
[171] OECD (2013b). *Effective Carbon Prices.* OECD Publishing: Paris.
[172] Productivity Commission (2011). *Carbon Emission Policies in Key Economies*. Research Report: Canberra.

Prices on carbon can be explicit, such as carbon taxes or prices of emission allowances in GHG emission trading systems, or they can be implicit, reflecting the cost to society per ton of CO_2e abated as a result of any type of policy measure that have an impact on GHG emissions. Comparisons of the effective price put on carbon by policies in different sectors and countries provide valuable insights into the existence of incentives to reduce emissions and the cost-effectiveness of alternative policies to reduce greenhouse emissions, and their potential impacts on competiveness. The numerical results of this comparison should, however, be treated with caution, since there is no one carbon price equivalent that can comprehensively capture what a diverse set of policies in a given country intend to achieve, nor at what cost.

As a starting point, we propose that the post-2015 framework track the effective carbon price for electricity generation. This indicator covers a large share of GHG emissions and is methodologically easier to track since the relevant technologies are global in nature, emissions and policies are concentrated, and some information is available on a comparable basis from governments and international and other organizations.

Disaggregation: Opportunities for disaggregation to be reviewed.

Comments and limitations: We underscore that this indicator is agnostic to the type of policies pursued by governments. It does not give preference to taxes, markets or regulatory instruments. So governments retain their full flexibility for identifying and pursing the instruments that are best adapted to their context.

The methodology developed by the Australian Productivity Commission and the OECD could be used as reference. Once better methodologies are available for other emission areas, the indicator can be extended to a wider sectoral focus.

The indicator estimates costs of greenhouse gas abatement and their impact on prices without comparing them to societal benefits.

Preliminary assessment of current data availability by Friends of the Chair: C

Primary data source: Administrative data.

Potential lead agency or agencies: UNFCCC with the IEA.

Indicator 53: Rate of primary energy intensity improvement

Rationale and definition: This indicator is used as the proxy for energy efficiency, one of the pillars of the Sustainable Energy for All (SE4ALL) framework. The indicator can be used to track the extent to which economic growth is decoupled from energy use – a key requirement for sustainable energy and decarbonization.

Energy efficiency is defined as the ratio between the gross consumption of energy and gross domestic product (GDP). Typically, the gross energy consumption is reported across five major sources of energy: solid fuels/biomass, oil, gas, nuclear, and renewable resources. The indicator is expressed as the

compound annual growth rate (CAGR) of energy intensity of GDP, measured in purchasing power parity (PPP) terms.[173]

Disaggregation: By sector.

Comments and limitations: Energy intensity is an imperfect proxy indicator because it is affected by external factors such as fluctuations in the volume and sectoral structure of GDP. However, there are statistical decomposition methods that allow these types of effects to be stripped out.[174] Statisticians will need to specify whether the indicator is expressed as a moving average over multiple years or whether growth is reported year-on-year. Final energy intensity could be a better indicator because it is more comprehensive, but reporting is much more complex and ignores energy losses in transformation and delivery.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: Administrative data.

Potential lead agency or agencies: SE4ALL, IEA.

Complementary National Indicators for Goal 7:

7.1. **Primary energy by type**. IEA reports annual data on the primary energy sources used by each country, such as coal, oil, gas, renewables, or biomass.

7.2. **Fossil fuel subsidies ($ or %GNI).** This indicator measures subsidies to fossil fuels that are consumed directly by end-users or consumed as inputs to electricity generation. It uses the price-gap approach that is the most commonly applied methodology for quantifying consumption subsidies, and is used by the IEA.[175]

7.3. **Share of energy from renewables.** This indicator measures energy produced from renewable sources as a percent of total energy production.

[173] Sustainable Energy for All (2013). *Global Tracking Framework Report.* Available at http://www.se4all.org/tracking-progress
[174] Ibid.
[175] For more information about the methodology and assumptions see http://www.iea.org/publications/worldenergyoutlook/resources/energysubsidies/methodologyforcalculatingsubsidies/

Goal 8. Promote Sustained, Inclusive and Sustainable Economic Growth, Full and Productive Employment and Decent Work for All

Potential and Illustrative Global Monitoring Indicators:

Indicator 54: GNI per capita (PPP, current US$ Atlas method)

Rationale and definition: Gross national income measures the total earnings of the residents of an economy adjusted for the cost of living in each country (purchasing power parity, PPP). These earnings are defined as the sum of value added by all resident producers, plus any product taxes (less subsidies) not included in the valuation of output, plus net receipts of primary income (compensation of employees and property income) from abroad. The International Comparison Program (ICP) can be used to compute purchasing power parity (PPP) adjustments. The Atlas method is a World Bank method of computing exchange rates to reduce the impact of market fluctuations in the cross-country comparison of national incomes.

Disaggregation: Spatially (rural/urban, province/district).

Comments and limitations: As underscored in this report, GNI and GDP are important indicators, but they measure only part of the economic dimension of sustainable development. Both economic measures do not adequately capture people's material conditions.[176]

We therefore recommend that they be complemented by other "beyond GDP" indicators (see also Table 1 in the report). For example, the System of Environmental-Economic Accounting 2012 Central Framework will help support a wider set of indicators related to sustainable development and green growth, which aims at fostering economic growth while ensuring that natural resources continue to provide the resources and environmental services on which wellbeing relies. The environmental-economic framework makes it possible to create indicators linking poverty reduction and natural resource management. Interdependencies related to food security and nutrition should also be considered. These issues are central to pro-poor growth and social protection policies in developing countries.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data.

Potential lead agency or agencies: The UN Statistics Division, the World Bank and the IMF compile GNI data.

[176] UN Statistics Division (2014), paragraph 13.8.

Indicator 55: Country implements and reports on System of Environmental-Economic Accounting (SEEA) accounts

Rationale and definition: The UN Statistical Commission adopted the System of Environmental-Economic Accounting (SEEA) in 2012 as the first international standard for environmental-economic accounting. The SEEA brings statistics on the environment and its relationship to the economy into the core of official statistics and thereby expands the traditional System of National Accounts (SNA), which focuses on measuring economic performance. Examples of information provided by the SEEA includes the assessment of trends in the use and availability of natural resources, the extent of emissions and discharges to the environment resulting from economic activity, and the amount of economic activity undertaken for environmental purposes.[177] The UN Statistical Commission will develop the monitoring templates for the SEEA Central Framework.

This indicator measures whether a country applies and reports on a national SEEA. It takes into account the fact that some elements of the SEEA may not be applicable to a particular country and that the implementation is incremental starting from selected accounts depending on policy priorities.

Disaggregation: The presence of SEEAs is a national indicator, but SEEAs themselves are highly disaggregated (by sector of activity, environmental resource, sub-national unit, etc.).

Comments and limitations: A challenge with this indicator derives from the need to establish an institutional framework for compiling integrated data, and the statistical production processes and information management in the countries' statistical systems.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: International monitoring.

Potential lead agency or agencies: UNSD.

Indicator 56: Youth employment rate, by formal and informal sector

Rationale and definition: The youth employment rate is the percentage of the youth labor force that is employed. Young people are defined as persons aged between 15 and 24. The labor force comprises all persons within the above age group currently available for work and actively seeking work, and the sum of those that are employed and unemployed.

To the extent possible, the youth employment rate should be reported separately for formal and informal employment. The latter is of particular importance in developing countries. The 17th International Conference of Labor Statisticians recommends that informal employment should include: (i) own-account workers (self-employed with no employees) in their own informal sector enterprises; (ii) employers (self-employed with employees) in their own informal sector enterprises;

[177] European Commission, Food and Agriculture Organization, International Monetary Fund, Organization for Economic Cooperation and Development, United Nations, World Bank (2012). *System of Environmental-Economic Accounting, Central Framework*. UN: New York.

(iii) contributing family workers, irrespective of type of enterprise;
(iv) members of informal producers' cooperatives (not established as legal entities);
(v) employees holding informal jobs as defined according to the employment relationship (in law or in practice, jobs not subject to national labor legislation, income taxation, social protection or entitlement to certain employment benefits (paid annual or sick leave, etc.); and
(vi) own-account workers engaged in production of goods exclusively for final use by their household.[178]

Disaggregation: We recommend that the indicator be disaggregated by sex and urban/rural to understand the differential composition of men and women in the formal and informal sectors.

Comments and limitations: A broad-based employment metric for formal and informal youth employment is preferable to standard unemployment measures that focus only on the formal sector. However, informal employment is not systematically measured in all countries, though many are beginning the process of defining and measuring informal employment. As a result, data quality and availability may be poor.

Preliminary assessment of current data availability by Friends of the Chair: TBD

Primary data source: Labor Force surveys.

Potential lead agency or agencies: ILO tracks data on this indicator.

Indicator 57: Ratification and implementation of fundamental ILO labor standards and compliance in law and practice

Rationale and Definition: The ILO core conventions describe key labor standards aimed at promoting opportunities for decent and productive work, where men and women can work in conditions of equity, non-discrimination, security, freedom, and dignity. The proposed indicator tracks countries' ratification of and compliance with the 8 fundamental ILO conventions, which cover the following issues: freedom of association and the effective recognition of the right to collective bargaining; the elimination of all forms of forced or compulsory labor; the minimum age for labor and the immediate elimination of the worst forms of child labor; and the elimination of discrimination in respect of employment and occupation, including equal remuneration.[179]

Countries are required to report on ratified conventions every two years. The monitoring system is backed up by a supervisory system that helps to ensure implementation. The ILO regularly reviews the application of standards in member states and makes recommendations.

Disaggregation: By country and by convention.

Comments and limitations: The exact measurement method and scoring for this indicator needs to be developed.

[178] ILO (2009). *ILO school-to-work transition survey: A methodological guide. ILO:* Geneva. Available at http://www.ilo.org/global/research/global-reports/global-employment-trends/youth/2013/WCMS_212423/lang--en/index.htm

[179] See ILO webpage on Conventions and Recommendations: http://ilo.org/global/standards/introduction-to-international-labour-standards/conventions-and-recommendations/lang--en/index.htm

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: International monitoring.

Potential lead agency or agencies: ILO.

Complementary National Indicators for Goal 8:

8.1. **Growth rate of GDP per person employed (MDG Indicator).** This indicator is a key measure of labor productivity.

8.2. **Working poverty rate measured at $2 PPP per capita per day**. This indicator measures the share of the working population who earn less than $2 PPP per day.

8.3. **[Indicator of decent work] – to be developed.** We propose that an indicator be considered to track countries' compliance with the decent work agenda adopted by member states of the ILO.[180] Decent work, as defined by the ILO, includes access to full and productive employment with rights at work, social protection and the promotion of social dialogue, with gender equality as a cross-cutting issue. Currently, such a single indicator does not exist, but it could be created (potentially as a composite indicator).

8.4. **Household income, including in-kind services (PPP, current US$ Atlas method).** This indicator is derived from the system of national accounts (SNA).

8.5. **Employment to population ratio (MDG Indicator) by gender and age group (15–64).** This indicator complements the various measures of unemployment since it tracks the overall share of the population that is employed.

8.6. **Share of informal employment in total employment**. This indicator covers the total number of people who have an informal employment situation, that is, workers whose employment relationships are not subject to labor legislation, income taxation, social protection or other employment benefits in law or in practice.[181]

8.7. **Percentage of own-account and contributing family workers in total employment**. This indicator tracks the share of the working population who are employed as family workers or who work on their own account. This metric is particularly important in countries with a large informal labor market.

8.8. **Percentage of young people not in education, employment, or training (NEET).** This indicator tracks the share of youth who are neither in formal employment nor in full-time education or training. It is a measure of the percentage of youth who are either unemployed, work in the informal sector, or have other forms of precarious jobs.

8.9. **[Indicator on implementation of 10-year framework of programs on sustainable consumption and production] – to be developed.**

[180] See ILO, (2012b).

[181] See ILO Resource Guide on the Informal Economy, online at: www.ilo.int/public/english/support/lib/resource/subject/informal.htm

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Potential and Illustrative Global Monitoring Indicators:

Indicator 58: Access to all-weather road (% access within [x] km distance to road)

Rationale and definition: Access to roads that are reliably passable year-round is critical for many rural development processes, including access to inputs, markets, education, and health services. This indicator tracks the share of population that lives within [x] km of roads that are reliably passable all-year round. Preferably such roads should be paved to ensure all-season access for heavy vehicles.[182]

Disaggregation: This indicator can be disaggregated spatially. Other opportunities to be reviewed.

Comments and limitations: While this indicator tracks access to crucial infrastructure, it does not capture accessibility to important destinations such as workplaces, markets, schools, or health facilities. It also does not measure the availability of adequate public transit on such roads, or the accessibility by relevant demographic characteristics.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Administrative data. It may also be possible to collect this data from remote sensing or satellite.

Potential lead agency or agencies: World Bank.

Indicator 59: Mobile broadband subscriptions per 100 inhabitants by urban/rural

Rationale and definition: Broadband is a key enabling technology, and access provides economic benefits (access to the formal economy, access to regional and global markets for local entrepreneurs, and access to banking services); health benefits (linking health workers to national health systems); and promotes citizen participation in government. It is projected that within a few years the majority of the world's population, including in sub-Saharan Africa, will have access to mobile broadband. This indicator measures the number of mobile broadband subscriptions per 100 inhabitants. The Broadband Commission describes broadband as: (a) always on; (b) high-capacity connectivity; and (c) enabling combined provision of multiple services simultaneously.[183] The ITU definition refers to access to data communications (e.g. the Internet) at broadband downstream speeds greater than or equal to 256 Kbit/s.
This indicator must be seen in conjunction with indicator 63.

Disaggregation: By urban/rural, sex, age. Other opportunities for disaggregation to be reviewed.

[182] Dobermann and Nelson et al (2013).
[183] From the core list of ICT indicators developed by the Partnership on Measuring ICT for Development, please see the report that was prepared for the forthcoming UN Statistical Commission meeting (Annex 1): http://unstats.un.org/unsd/statcom/doc14/2014-8-ICT-E.pdf

Comments and limitations: While this indicator provides a useful metric to monitor the uptake of mobile broadband technology, the data may include people who have more than one mobile broadband subscription and can overestimate the percentage of the population using mobile broadband subscriptions.

This indicator will need to be flexible and adaptable to the pace of technological innovations. The technological landscape in 2020 will likely be very different to the current one, and perhaps then mobile broadband subscriptions will no longer be a good reflection of the access to enabling ICTs.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data.

Potential lead agency or agencies: ITU.

Indicator 60: Index on ICT maturity

Rationale and definition: Information and communication technologies (ICT) and other advanced technologies are critical for economic development and achieving the other SDGs. We propose that an index be developed to track the quality, performance, and affordability of countries' ICT infrastructure.

The proposed index would measure four equally weighted dimensions of ICT maturity:

1. *Fixed broadband quality* measured as mean downlink speed (in kilobits per second), as established through user speed tests;
2. *Mobile broadband quality* measured as the proportion of download speed test measurements with 10 Mbps downlink speed (or better);
3. *International bandwidth capacity* measured as bandwidth connected across international borders to metropolitan areas as of mid-year (expressed in megabit per second (mbps); and
4. *Mobile broadband affordability* measured as the mobile broadband prices as a percentage of per capita monthly GNI.

Each component of the index and the overall index could be normalized to values between 1 and 100.

Disaggregation: Opportunities for disaggregation to be reviewed once the indicator has been developed.

Comments and limitations: This indicator and indicator 62, which measures the urban and rural usage dimension of the ICT infrastructure, are strongly interlinked and must be reviewed together. Since ICT standards and associated usage evolve rapidly, any index for the quality of a country's ICT infrastructure will need to be revised periodically – perhaps every five years. Access to data could be a limitation to developing in this index.

We underscore our general reluctance to include composite indices in the SDG monitoring framework (see Section III). However, the proposed Index on ICT maturity would depend largely on data that is not collected through NSOs and could be provided by an industry association. In this case it would not add to the statistical burden on NSOs. We welcome suggestions for alternative metrics for ICT maturity.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: TBD.

Potential lead agency or agencies: ITU in collaboration with providers of the speed test and bandwidth data.

Indicator 61: Manufacturing value added (MVA) as percent of GDP

Rationale and definition: This indicator is a measure of manufacturing output as share of a country's economy. Manufacturing is broadly defined as the "physical or chemical transformation of materials into new products," regardless of the process (by machines or by hand), location (factory or home), or sale method (wholesale or retail).[184] The value added is the net output of the manufacturing sector, calculated after adding up all the outputs and subtracting the intermediate inputs. It is determined by the International Standard Industrial Classification (ISIC) revision 3, and calculated without deducting the depreciation of the fabricated assets, or the depletion and degradation of any natural resources.[185] The indicator is expressed as a share of gross domestic product (GDP).

Disaggregation: Can be disaggregated by individual sectors (as per ISIC definitions) and by geography (urban/rural).

Comments and limitations: TBD.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: Administrative data.

Potential lead agency or agencies: World Bank, OECD, UNIDO.

Indicator 62: Total energy and industry-related GHG emissions by gas and sector, expressed as production and demand-based emissions (tCO_2e)

Rationale and definition: This indicator tracks total greenhouse gas (GHG) emissions in ton of CO_2 equivalent (tCO_2e), broken down by gas (including CO_2, N_2O, CH_4, HFCs, PFCs, and SF6) and sector (including petroleum refining, electricity and heat production, manufacturing industries and construction, transport, commercial and residential buildings, fugitive emissions, as well as emissions from industrial processes) in line with the Intergovernmental Panel on Climate Change (IPCC) 2006 guidelines for the national GHG inventory,[186] and the special chapters on energy[187] and industry-related emissions.[188]

The UNFCCC collects GHG emissions data, estimated using a production-based (sometimes also referred to as territorial-based) accounting method. Under this approach, all emissions taking place "within

[184] See https://unstats.un.org/unsd/cr/registry/regcst.asp?Cl=2
[185] See World Bank data: http://data.worldbank.org/indicator/NV.IND.MANF.ZS
[186] Eggleston H.S., Buendia L., Miwa K., Ngara T. and Tanabe K. (eds.) (2006).. *2006 IPCC Guidelines for National Greenhouse Gas Inventories*. (5 volume collection), http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html
[187] Ibid, see volume 2 on Energy: http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol2.html
[188] Ibid, see volume 3 on Industrial Processes and Product Use: http://www.ipcc-nggip.iges.or.jp/public/2006gl/vol3.html

national territory and offshore areas over which the country has jurisdiction" (as defined by IPCC 2006 guidelines for the national GHG inventory) are assigned to a country.

A complementary accounting method focuses on demand-based or consumption-based emissions. Under this approach emissions attributed to domestic final consumption and those caused by the production of its imports are attributed to a country.[189] In other words GHG emissions for the importing country are augmented by the GHG content of the imports. Similarly, emissions for an exporting country are lowered.[190] Demand or consumption-based emissions are estimated using international input-output tables and therefore require a more complex methodology.

Disaggregation: By sectors and gas, as described above. The disaggregation by sector should – to the extent possible – be made consistent with systems of national accounts. It might be advisable to also report the data by International Standard Industrial Classification of All Economic Activities (ISIC).

Comments and limitations: The use of production-based emissions accounting is well established and consistent with the definition of GDP. Yet, since it omits emissions embodied in international trade, there is a growing body of literature that argues in favor of a demand-based or consumption-based accounting of emissions. We therefore recommend that countries report their emissions using both production and demand-based measures.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data.

Potential lead agency or agencies: Countries' data for this indicator are regularly submitted to the United Nations Framework Convention on Climate Change (UNFCCC). The OECD can also report this data. UNIDO monitors the GHG emissions for manufacturing sectors.

Indicator 63: Personnel in R&D (per million inhabitants)

Rationale and definition: The fields of science, technology and innovation are key drivers of economic growth and development. Progress in these fields requires trained staff engaged in research and development (R&D). This indicator measures the total number of personnel (researchers, technicians and other support staff) working in research and development, expressed in full-time equivalent, per million inhabitants. This indicator goes beyond technology development, diffusion, and adoption, but is important for achieving many of the SDGs.[191]

Disaggregation: Data can be broken down by sector, sex, qualification, and field of science.[192]

[189] Peters, G. and Hertwich, E. (2008). Post-Kyoto greenhouse gas inventories: production versus consumption, *Climatic Change*, Volume 86, Issue 1-2, 51-66.
[190] Boitier, B. (2012). *CO_2 emissions production-based accounting vs. consumption: Insights from the WIOD databases.*
[191] See UIS webpage on monitoring R&D: http://www.uis.unesco.org/ScienceTechnology/Pages/research-and-development-statistics.aspx
[192] See UIS stats database on Science, technology, and innovation: http://data.uis.unesco.org/

Comments and limitations: Data is available for some 140 countries, but not always fully comparable across countries.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: R&D surveys.

Potential lead agency or agencies: UNESCO Institute for Statistics (UIS), and the OECD.

Complementary National Indicators for Goal 9:

9.1. **Percentage of households with Internet, by type of service by urban/rural areas**. This indicator measures the percentage of households with Internet access by type (dial-up, DSL, etc.).

9.2. **Employment in industry (% of total employment)**. This indicator measures the share of employment in industry, including in mining, manufacturing, construction, and public utilities, as a share of total employment.

Goal 10. Reduce inequality within and among countries

Potential and Illustrative Global Monitoring Indicators:

Indicator 64: [Indicator on inequality at top end of income distribution: GNI share of richest 10% or Palma ratio]

Rationale and definition: Concerns about inequality focus on the top and bottom ends of the income distribution. Indicator 68, on "relative poverty," tracks the bottom end of the income distribution, while this indicator monitors changes at the top end of the distribution. We see two options for such an indicator. First, countries may track the share of incomes generated by the richest 10% of the population. An alternative indicator is the increasingly popular Palma ratio, defined as the ratio of richest 10% of the population's share of gross national income (GNI) divided by the poorest 40% of the population's share.

The Palma ratio seeks to overcome some of the limitations of the widely used Gini Coefficient, which fails to take into account changing demographic structure (e.g. the effects of a baby boom or an aging population) and is insensitive to changes in the tails (top and bottom) of the income distribution, which is where most movement occurs.[193] Furthermore, using a simple ratio, as opposed to the more complex Gini Coefficient measurement, is more intuitive for policy makers and citizens. For example, for a given, high Palma value it is clear what needs to change: to narrow the gap you raise the share of income of the poorest 40% and/or you reduce the share of the top 10%.

Disaggregation: The income share of the top decile and the Palma ratio are formulated using household survey data relating to income and consumption (usually from World Bank PovCal / World Development Indicators). Such data can be disaggregated by income deciles in countries, allowing for comparative analyses between countries and regions. Further disaggregation by centiles, regions or groups would require complex analysis of the original household survey data, which at present may not be feasible on a national/ global scale.

Comments and limitations: An important limitation of the income share of the top decile and the Palma ratio (as well as the Gini Coefficient) is that the indicators cannot be decomposed (i.e. overall inequality is related consistently to inequality among sub-groups). Furthermore, data is based on household surveys, some of which measure income and some consumption. The mix makes international comparison quite challenging, as the distribution of consumption tends to be less unequal than that of income. But since no means of adjustment (income vs. consumption) is readily acceptable, it is common practice not to adjust the surveys. To improve the quality of this data we recommend expanding the collection of pure income-based data, for example via the Luxembourg Income Study, which currently has micro-data for 40 countries.[194]

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Household surveys.

[193] Palma, G (2011). *Homogeneous middles vs. heterogeneous tails, and the end of the 'Inverted-U': The share of the rich is what it's all about*. Cambridge Working Papers in Economics, See: http://www.econ.cam.ac.uk/dae/repec/cam/pdf/cwpe1111.pdf

[194] See a list of LIS available datasets: http://www.lisdatacenter.org/our-data/lis-database/documentation/list-of-datasets/

Potential lead agency or agencies: UNSD, World Bank, OECD (with Luxembourg Income Study).

Indicator 65: Percentage of households with incomes below 50% of median income ("relative poverty")

Rationale and definition: Relative poverty is defined as the percentage of households with incomes less than half of the national median income. It is an indicator of inequality at the bottom of the income distribution, which acts as a cause of social exclusion and undermines equality of opportunity.

Disaggregation: The data should be disaggregated by sex and age of the head of household and by urban/rural locality. If possible with the given survey methodology, ethnicity, religion, language, disability and indigenous status should also be reviewed.

Comments and limitations: This indicator requires measurement of the national distribution of household income, which is only conducted once every two to three years and data becomes available with monitoring lags of up to three years.[195]

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data are preferred, but household surveys can also be used.

Potential lead agency or agencies: The indicator can be compiled from income distribution data. UNSD, World Bank, or the OECD could take the lead in compiling data.

[195] See OECD Income Distribution Database: http://www.oecd.org/social/income-distribution-database.htm

Complementary National Indicators for Goal 10:

10.1. **Gini Coefficient.** The Gini measures the extent to which the distribution of income or consumption expenditure among individuals or households within an economy deviates from a perfectly equal distribution. A Gini value of 0 represents perfect equality, and a value of 1 denotes perfect inequality. It is a well-known indicator for income inequality, which has been in use for over 100 years.

10.2. **Income/wage persistence**. This is a measure of intergenerational socioeconomic mobility, which is generally defined as the relationship between the socioeconomic status of parents and the status their children will attain as adults. Economic mobility can be measured either through wage or income, and it is expressed as the fraction of parental income or wages reflected in their offspring's.

10.3. **Human Mobility Governance Index**. IOM is developing this indicator, which will track policies in support of orderly, safe, and responsible migration and mobility of people. It is a composite index consisting of the following elements: human rights of migrants, regulation on mobility, socioeconomic opportunities for migrants, and mitigating risks and strengthening resilience through migration.

10.4. **Net ODA to LDCs as percentage of high-income countries' GNI (modified MDG Indicator**). This indicator measures progress towards aid commitments. The agreed target range for this indicator is 0.15-0.2%.

10.5. **Indicator on share of LDCs / LIC representatives on boards of IMF / WB (and other institutions of governance).**

10.6. **[Remittance transfer costs] – to be developed.** Remittances are increasingly important to many economies, but accurate measurement remains difficult. The G20 committed to reducing global average remittance cost by 5%, so enhanced statistical methodology is needed to improve data collection for monitoring of remittance costs.[196]

[196] UN Statistics Division, (2014).

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

Potential and Illustrative Global Monitoring Indicators:

Indicator 66: Percentage of urban population living in slums or informal settlements (MDG Indicator)

Rationale and definition: This indicator measures the percentage of the urban population living in slums or informal settlements, as defined by UN-Habitat. The indicator is calculated by taking the number of people living in slums of a city divided by the total population of this city, expressed as a percentage. At the country level, this percentage is calculated by taking the total number of people living in slums of all the cities of a country divided by the total population living in all the cities of the given country.[197]

UN-Habitat has developed a household level definition of a slum household in order to be able to use existing household-level survey and census data to identify slum dwellers among the urban population. A slum household is a household that lacks any one of the following five elements:

- Access to basic water (access to sufficient amount of water for family use, at an affordable price, available to household members without being subject to extreme effort)
- Access to basic sanitation (access to an excreta disposal system, either in the form of a private toilet or a public toilet shared with a reasonable number of people)
- Security of tenure (evidence of documentation to prove secure tenure status or de facto or perceived protection from evictions)
- Durability of housing (permanent and adequate structure in non-hazardous location)
- Sufficient living area (not more than two people sharing the same room)

Disaggregation: By sex of head of household, age, and disability.

Comments and limitations: Not all slums are the same and not all slum dwellers suffer from the same degree of deprivation. The degree of deprivation depends on how many of the five conditions that define slums are prevalent within a slum household. Approximately one-fifth of slum households live in extremely poor conditions, defined by UN-Habitat as lacking more than three basic shelter needs.[198] The definition of the water and sanitation component of the index may need to be reviewed to ensure full consistency with the water supply and sanitation indicators currently under development by the WHO/UNICEF JMP (indicators 57 and 58).

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Household surveys and citizen/community-run surveys, such as those developed by Slum Dwellers' International and the Cities Alliance.

Potential lead agency or agencies: UN-Habitat and the Global City Indicators Facility (GCIF).

[197] Global City Indicators Facility. See: http://mdgs.un.org/unsd/mdg/seriesdetail.aspx?srid=710
[198] UN-Habitat (2006). *State of the World's Cities 2006/7*. See: http://www.unhabitat.org/documents/media_centre/sowcr2006/sowcr%205.pdf

Indicator 67: Percentage of people within 0.5 km of public transit running at least every 20 minutes

Rationale and definition: This indicator measures access to reliable public transportation, using a proxy of percentage of population within [0.5] kilometers of public transit running at least every [20] minutes. Public transportation is defined as a shared passenger transport service that is available to the general public. It includes buses, trolleys, trams, trains, subways, and ferries. It excludes taxis, car pools, and hired buses, which are not shared by strangers without prior arrangement.

Effective and low-cost transportation for mobility is critical for urban poverty reduction and economic development because it provides access to jobs, health care, education services, and more. The Partnership on Sustainable Low-Carbon Transport (SLoCaT)[199] and others propose indicators for urban access to sustainable transport that include: mean daily travel time, percentage of income spent by urban families on transport, and percentage of households within 500 meters of good quality, affordable public transportation.

Disaggregation: Households should be disaggregated spatially and in terms of potential disadvantage (such as sex, age, disability) to ensure access for all.

Comments and limitations: No internationally agreed methodology exists for measuring convenience and service quality of public transportation. In addition, global data on urban transport systems do not exist. Although some data exists for public transport companies and individual cities, harmonized and comparable data on the world level do not yet exist. To obtain this data would require going down to municipal/city level, as urban transport is most often not under direct responsibility of national governments. In general, there is currently a lack of data on the number of people using mass transit and on transport infrastructure.[200]

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Administrative data, complemented by mapping, surveys, and citizen-supplied data.

Potential lead agency or agencies: UN-Habitat.

Indicator 68: [Ratio of land consumption rate to population growth rate, at comparable scale] –to be developed.

Rationale and Definition: Cities are expected to absorb between two and three billion additional people by the year 2050. Whether they manage to do so sustainably depends on whether they harness the efficiency gains from agglomeration. Agglomeration provides the compactness, concentration and connectivity that lead to prosperity and sustainability.

[199] Sayeg, P., Starkey, P., and Huizenga, C. (2014). *Updated Draft Results Framework on Sustainable Transport*, SLoCAT (Partnership on Sustainable Low Carbon Transport). See: http://www.slocat.net/results-framework-sustainable-transport

[200] UN Statistics Division, (2014).

More than half of the area expected to be urban in 2030 has yet to be built.[201] Therein lies an extraordinary opportunity to make the future city more productive and sustainable. However, most cities are forfeiting these advantages, becoming more expansive, growing spatially faster than their population and haphazardly absorbing land needed for agriculture and ecosystem services. With impending resource limits and twin climate change and food crises, we have little time to reverse this trend.

As a measure of land-use efficiency, this indicator benchmarks and monitors the relationship between land consumption and population growth. It informs and enables decision-makers to track and manage urban growth at multiple scales and enhances their ability to promote land use efficiency. In sum, it ensures that the SDGs address the wider dimensions of space and land adequately and provides the frame for the implementation of several other goals, notably health, food security, energy and climate change.

This land use efficiency indicator not only highlights the *form* of urban development but also illuminates human settlement patterns. It can be employed to capture the three dimensions of land use efficiency: economic (e.g. proximity of factors of production), environmental (e.g. lower per capita rates of resource use and GHG emissions), and social (e.g. avoidance of settlement on vulnerable land, promotion of reduced travel times/distances). Finally, urban configuration largely predetermines the technologies and behavioral patterns within a city. Once built, cities are expensive and difficult to reconfigure. Fast growing cities in the developing world must "get it right" before they are beset by infrastructural constraints.

Disaggregation: Geographic (urban / rural), region (functional metropolitan area).

Comments and Limitations: The data for this indicator is free and publicly accessible. For more than five decades, the US Geological Survey/NASA Landsat data has been freely available, is frequently updated and its resolution is continually improving. The European Community's Joint Research Center has developed the Global Human Settlement Layer, an even higher resolution land cover dataset with similar frequency and distribution practices as Landsat. Many researchers have used these technologies to measure land cover and urban expansion.[202] Both measure built up area as buildings, compacted soils and impervious surfaces. WorldPop overlays demographic data on GIS maps.[203] But over time, to ensure regular and sustainable collection of this data, NSOs might consider providing spatially continuous demographic data (not bounded by jurisdiction) in digital form and to integrate mapping into their official census data.

Preliminary Assessment of Current Data Availability: TBD.

Primary Data Source: Satellite imagery and census data.

Potential Lead Agency: UN-Habitat, World Bank.

---

[201] Elmqvist et al (2013). *Urbanization, Biodiversity and Ecosystem Services: Challenges and Opportunities*. Springer.

[202] Angel et al (2011). *Making Room for a Planet of Cities*. Cambridge: Lincoln Institute of Land Policy
Seto et al (2011). *A Meta-analysis of Global Urban Land Expansion*. PLoS ONE.

[203] Gaughan AE, Stevens FR, Linard C, Jia P, and Tatem AJ (2013). High resolution population distribution maps for Southeast Asia in 2010 and 2015. *PLoS ONE,* 8(2): e55882.

Indicator 6 cross-reference: Losses from natural disasters, by climate and non-climate-related events (in US$ and in lives lost)

Rationale and definition: Cities around the world are at growing risk from natural hazards, including extreme climate-related events that are projected to increase in frequency and severity as a result of climate change. Population growth and urbanization will also affect vulnerability and exposure.

This indicator measures losses, both lives lost and economic costs, due to natural disasters,[204] disaggregated by climate and non-climate-related events. Extreme climate-related natural disasters include the following:
(i) hydro-meteorological events (storms, floods, mass movements (wet)) and
(ii) climatological events (extreme temperature, drought, wildfire).[205]
Non-climate-related natural disasters consist primarily of geophysical events (earthquakes, volcano eruptions, tsunamis, dry mass movements). Other disasters that may be climate or non-climate related include biological events (epidemics, insect infestations, animal stampedes). If in doubt, we propose that the events be categorized as "non-climate related."

Effective adaptation and disaster risk reduction measures are needed to reduce the economic and social impact of natural disasters. Economic loss dimensions include damage at the replacement value of totally or partially destroyed physical assets; losses in the flows of the economy that arise from the temporary absence of the damaged assets; resultant impact on post-disaster macroeconomic performance, with special reference to economic growth/GDP, the balance of payments and fiscal situation of the Government, as per the Damage and Loss Assessment Methodology developed by UN-ECLAC.[206]

Human losses would be measured by the number of persons deceased or missing as a direct result of the natural disaster, confirmed using official figures. The scale and duration of displacement would also be an important aspect of the human cost.

Disaggregation: This indicator can be disaggregated spatially (inc. urban/rural) and by the age and sex of those killed. Further opportunities for disaggregation to be reviewed, including the socio-economic profile of those impacted.

Comments and limitations: Some biological disasters (epidemics, insect infestations, animal stampedes) can be climate-related. The indicator would need to specify clearly which of these events are considered climate-related.

---

[204] Consistent with the definitions used by CRED and the Munich database, we use the term "natural disasters" to comprise biological, geophysical, meteorological, hydrological, climatological and extra-terrestrial disasters. There is growing evidence that some climate-related disasters are due to anthropogenic climate change and may therefore not be termed "natural," but given the difficulty involved in establishing causality we propose to include them under natural disasters.
Below, R, A Wirtz, and D Guha-Sapir (2009). *Disaster Category Classification and peril Terminology for Operational Purposes*. Working Paper, Centre for Research on the Epidemiology of Disasters (CRED) and Munich Reinsurance Company (Munich RE), Brussels: UCL.

[205] As defined by the EM-DAT, the International Disasters Database, managed by the Centre for Research on the Epidemiology of Disasters (CRED) at the University of Louvain. Available at http://www.emdat.be/classification

[206] See DaLA Methodology, at the Global Facility for Disaster Reduction and Recovery, available here: https://www.gfdrr.org/Track-III-TA-Tools

It should also be noted that there are some limitations around measuring the scale of disaster losses recorded. For example, the CRED's International Disasters Database (EM-DAT) has a lower-end threshold for recording losses than other commonly used reinsurance databases such as Swiss Re's Sigma or Munich Re's NatCatSERVICE. A precise threshold will need to be agreed upon.[207]

Preliminary assessment of current data availability by Friends of the Chair: C

Primary data source: Vital registration for the mortality (household surveys if not available), and administrative data (national accounts and statistics) to assess economic damage and loss.

Potential lead agency or agencies: Such an indicator could be reported by UNISDR working with FAO, WHO, the Centre for Research and Epidemiology of Disasters (CRED), and a consortium of reinsurance companies that track this data. The data is widely reported under the Hyogo Framework of Action.[208]

Indicator 69: Mean urban air pollution of particulate matter (PM10 and PM2.5)

Rationale and definition: Rapid urbanization has resulted in increasing urban air pollution in major cities, especially in developing countries. It is estimated that over 1 million premature deaths can be attributed to urban ambient air pollution.[209] This has severe economic and health impacts, particularly for young children. We therefore propose that the post-2015 framework include an indicator tracking the mean urban air pollution of particulate matter.

PM10 is the concentration of particles with a diameter equal to or greater than 10 microns (μ), which are usually produced from construction and mechanical activities, while PM2.5 is the concentration of particles with a diameter equal to or greater than 2.5 microns, usually produced from combustion. These smaller particles are actually more damaging as they permeate the lung more deeply. WHO has set guidelines for PM10 at 20 μg/m3 annual mean and 50 μg/m3 24-hour mean and for PM2.5 at 10 μg/m3 annual mean and 25 μg/m3 24-hour mean.[210] However, many cities regularly experience concentrations over 10 times higher than these recommendations.

Disaggregation: By city and province.

Comments and limitations: Many countries track the concentration of PM10 (i.e. particles with a diameter equal to or greater than 10 microns) and PM2.5 (diameter equal to or greater than 2.5 microns) for large cities and report this data to WHO. We recommend that both indicators be tracked in all urban agglomerations of greater than [250,000] people. Global statistics agencies should develop a framework for gathering the data. Complementary indicators include population-based measures, such as "percentage of population whose exposure to PM10 and PM2.5 is above certain μg/m3 (i.e. 15) threshold," which can provide city authorities with important information on how to direct policies to lower the health impact of air pollution.

---

[207] For a full discussion of this see Kousky, C (2012). *Informing Climate Adaptation: A Review of the Economic Costs of Natural Disasters, Their Determinants and Risk Reduction Options*. Discussion Paper 12-28, Washington: Resources for the Future.

[208] UN International Strategy for Disaster Reduction (ISDR). (2007). *Hyogo Framework for Action 2005-2015. Extract from the Final Report of the World Conference on Disaster Reduction*. Geneva, Switzerland: ISDR.

[209] WHO Global Health Observatory. See: http://apps.who.int/gho/data/view.main

[210] WHO, (2005). *WHO Air quality guidelines for particulate matter, ozone, nitrogen dioxide and sulfur dioxide*. Available at http://whqlibdoc.who.int/hq/2006/WHO_SDE_PHE_OEH_06.02_eng.pdf

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Remote sensing (satellite-based measurements are the most comprehensive and cost effective).

Potential lead agency or agencies: UN-Habitat, UNEP, WHO.

Indicator 70: Area of public and green space as a proportion of total city space

Rationale and Definition: Having sufficient public space allows cities and regions to function efficiently and equitably.[211] It provides the rights of way required for streets and infrastructure (and their connectivity) as well as the green space necessary for recreation and the provision of ecosystem services. At the same time, the positive outcomes of public space are not limited to infrastructure development and environmental sustainability. Access to open public space not only improves quality of life but also constitutes a first step towards civic empowerment and greater access to institutional and political spaces. Well-designed and maintained streets and public spaces can help lower rates of crime and violence, make space for formal and informal economic activities and avail services and opportunities to a diversity of users, including particularly marginalized ones.

By contrast, a reduced amount of public space impacts negatively on life in a city. The private sector generally has little incentive to provide public space and wider urban connectivity, so the role of local governments in defending the commons is critical. However, many local governments are relinquishing this role. As a result, much rapid urbanization is proceeding in an uncontrolled manner, yielding settlement patterns with dangerously low proportions of public space. Even the *planned* areas of new cities have sizably reduced allocations of land for public space, with an average of 15% of land allocated to streets. In unplanned areas the situation is considerably worse, with an average of only 2%.[212] Such areas are totally unable to accommodate safe pedestrian and vehicular rights of way; land for critical infrastructure such as water, sewerage, and waste collection; and green spaces that can facilitate social cohesion and critical ecological functioning.

The generally accepted minimum standard for public space in urban areas (defined by those achieving a minimum density of 150 inhabitants per hectare, the minimum threshold for a viable public transport system) is 45%. This is broken down into 30% for streets and sidewalks and 15% for green space.[213] Total city space refers to the administrative/jurisdictional spatial extent of a municipality. This is strongly reinforced by the metric of street connectivity. If the average number of intersections per square kilometer is too *few*, the corresponding distance between intersections will be too *far* to incentivize walking; if it is too *many*, the average block size will be too *small* to be economically viable for development. As a result, the generally accepted target range for street connectivity is between 80-120 intersections per square kilometer.[214] At an optimal level of 100 intersections per km2 (e.g. a grid of 10 by 10 streets) with each street occupying an average width of 15m (minimum for one vehicular lane each direction, street side parking and sidewalks), a city's streets would occupy approximately 28% of its

[211] Public space is publicly owned land and available for public use. Public spaces encompass a range of environments including streets, sidewalks, squares, gardens, parks, conservation areas. Each public space has its own spatial, historic, environmental, social, and economic features.
[212] UN-Habitat (2013.) *Streets as Public Spaces and Drivers of Urban Prosperity.* Nairobi.
[213] Ibid.
[214] See UN Habitat website: http://mirror.unhabitat.org/downloads/docs/StreetPatterns.pdf

total area. This cross-verifies the recommended proportion of 30% for street area.

Disaggregation: This indicator can easily be disaggregated into paved (streets) and green portions of total public space; it can also be disaggregated into public and private portions of total green space; lastly, it can be disaggregated by neighborhood, city and region.

Comments and Limitations: With sufficient data, this indicator allows for comparing and aggregating progress across cities towards the achievement of an optimal quantity of land allocated to public space.

Preliminary Assessment of Current Data Availability by Friends of the Chair: TBD

Primary Data Source: High resolution satellite imagery (e.g. from US Geological Survey/NASA Landsat data or European Community's Joint Research Center Global Human Settlement Layer), open public space maps (most municipalities have legal documents delineating publicly owned land) and/or GIS data.

Potential lead agency or agencies: UN-Habitat, World Bank.

Indicator 71: Percentage of urban solid waste regularly collected and well managed

Rationale and definition: Urban households and businesses produce substantial amounts of solid waste (not including industrial, construction, and hazardous waste) that must be collected regularly and disposed of properly in order to maintain healthy and sanitary living conditions. Such collection can be through formal or informal means. Uncollected and improperly managed solid waste can end up in drains and dumps, and may result in blocked drains and other unsanitary conditions. Mosquitoes that spread disease can breed in blocked drains and dumps. In addition, some constituents of solid waste, such as organic matter, can attract flies and rodents that spread gastrointestinal and parasitic diseases.

Sustainable solid waste management is essential. This implies waste reduction, reuse, recycling and composting, incineration, and disposal in landfills. Waste reduction, recycling, reuse and composting are preferred methods and should be promoted, as they reduce demand on scarce environmental resources, decrease energy use, and minimize the quantity of waste that must eventually be incinerated or disposed of in landfills.

UN-Habitat has specified that solid waste collection can include (formal or informal) collection from individual households and regular dumpster collection, but not local dumps to which households must carry garbage.[215] Solid waste collection should be considered regular and adequate if it occurs at least once a week.

Disaggregation: This indicator can be disaggregated at the city and town level.

Comments and limitations: In many countries and sub-national governments, solid waste collection and management data are currently incomplete or not available. The development of adequate data collection systems may require a significant effort in some jurisdictions. Indicator #74 (under proposed

[215] Coffey, M and Coad, A (2010). *Collection of Municipal Solid Waste in Developing Countries. United Nations Human Settlements Programme*. United Nations Publications.

SDG 12) in the proposed SDSN framework addresses global food loss and waste, which could be used alongside this suggested indicator; alternatively, this broader formulation under SDG 11 could serve as a proxy for measuring food waste under SDG 12.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Data on formal solid waste collection and management may be available from municipal bodies and/or private contractors. Informal collection data may be available from NGOs and community organizations.

Potential lead agency or agencies: UN-Habitat and WHO at the city or national urban level.

Indicator 95 cross-reference: Domestic revenues allocated to sustainable development as percent of GNI, by sector

Rationale and definition: This indicator tracks government resource mobilization for sustainable development as a share of GNI. The data can be collected on an internationally comparable basis by the IMF, which should define the government spending categories that support sustainable development (e.g. most military expenditure and some subsidies should be excluded). Once the relevant government spending categories have been defined, the indicator can be compiled for all countries.

In general, the richer a country, the higher government spending can be as a share of GNI. It seems reasonable that countries should aim to mobilize at least 15-20% of GNI as government spending.

Disaggregation: By sector.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: Administrative data.

Potential lead agency or agencies: IMF.

Complementary National Indicators for Goal 11:

11.1. **Number of street intersections per square kilometer:** This indicator measures street density, street safety and public space in cities.
11.2. **Existence and implementation of a national urban and human settlements policy framework:** This indicator tracks a government's commitment to sustainable urban development and safe and sustainable human development.
11.3. **Percentage of cities with more than 100,000 inhabitants that are implementing risk reduction and resilience strategies informed by accepted international frameworks (such as forthcoming Hyogo-2 Framework):** A measure of the disaster and climate preparedness of the city, to be updated in accordance with the new Hyogo framework.
11.4. **Presence of urban building codes stipulating either the use of local materials and/or new energy efficient technologies or with incentives for the same:** A measure of sustainable local production and consumption of raw materials and low-carbon development.
11.5. **City biodiversity index (Singapore index):** Green space and biodiversity are crucial for a healthy urban environment. This indicator measures the protection of endemic species as well as the environmental health of the city.
11.6. **Percentage of consumption of food and raw materials within urban areas that are produced and delivered in/from rural areas within the country:** An important measure of the linkages between rural and urban areas, and the health of their codependence vis-a-vis the national economy.

Goal 12. Ensure sustainable consumption and production patterns

Potential and Illustrative Global Monitoring Indicators:

Indicator 72: Disclosure of Natural Resource Rights Holdings

Rationale and definition: This indicator measures whether resource-based rights and registry of rights holders between governments and business, including contracts and licenses relating to extractive resource exploration and production, as well as agriculture and forestry operations, are published in a timely manner. Disclosure of rights and rights holders is an essential precondition to ensuring that all parties benefit from large-scale resource investments. Secrecy can be a convenient way to hide power imbalances, incompetence, mismanagement, and corruption. Disclosure is also a necessary precursor for the coordinated and effective management of the sector by government agencies. It also allows citizens to monitor rights in areas such as environmental compliance and the fulfillment of social commitments. Contract and rights transparency also provides incentives: government officials can be deterred from seeking their own interests over the population's and, over time, governments can also increase their bargaining power by gauging contracts from around the world.[216]

This indicator measures whether resource-based rights between governments and business, including those related to extractive resource exploration and production as well as agriculture and forestry operations, are publicly published in a timely, free, and open manner. Based on the rating system of the proposed IMF Pillar IV on Resource Revenue transparency and to be included in the updated Resource Governance Index, the indicator would be constructed so that a government can receive one of four ratings:

- 100: The government maintains and publishes free and online an up-to-date register of all natural resource rights holders, the full texts of terms and conditions associated with their natural resource rights, and the beneficial owners of those rights.
- 67: The government maintains and publishes free and online an up-to-date register of all natural resource rights holders and the full text of terms and conditions associated with their natural resource rights.
- 33: The government maintains and publishes an up to-date register of all natural resource rights holdings. The government maintains and publishes an up-to-date register of all natural resource rights holders and their holdings.
- 0: No. Rights, a register of rights and rights holders are not published.

Disaggregation: This indicator can be disaggregated by industries and commodities.

Comments and limitations: We propose that available indicators for the extractives industries be expanded to also include large-scale investments in agriculture, forestry, fishing concessions, and other large natural resources contracts.

Preliminary assessment of current data availability by Friends of the Chair: C
Primary data source: Administrative data, international monitoring.

[216] Collier, P and Antonio, P et al (2013). *Harnessing Natural Resources for Sustainable Development: Challenges and Solutions*. Paris, France and New York, USA: SDSN.

Potential lead agency or agencies: IMF, NRGI, UN Global Compact, EITI, and/or UNCTAD.

Indicator 73: Global Food Loss Index [or other indicator to be developed to track the share of food lost or wasted in the value chain after harvest]

Rationale and definition: Food losses through inefficiencies in the food production chain and waste are widespread in all countries. At present, direct data on food losses and waste is sparse and difficult to compare internationally. This is partly explained by the high cost of directly measuring losses and waste for numerous categories of food products and across different stages from harvest to final consumption. In view of the importance of food losses and waste, a basic indicator is needed to track progress over time. FAO is currently developing the Global Food Loss Indicator, which is expected to be available by end of 2015 but remains to be validated. The indicator is based on a model using observed variables that conceivably influence food losses (e.g. road density, weather, pests) to estimate quantitative pre- and post-harvest losses. Data on these variables are available from several sources, including country statistics, FAOSTAT, WFP's Logistics Capacity index, World Road Statistics, etc. In addition, depending on their priorities and monitoring systems, countries may adopt other indicators to more directly track food losses and/or waste for agricultural product categories of highest priority to their food and nutrition security.[217]

Disaggregation: Opportunities for disaggregation to be reviewed once the indicator has been defined.

Comments and limitations: Significant efforts will be necessary to create a baseline for food loss and waste. Staple crops that are often combined after harvest for processing will usually provide better data for food loss. Crops grown on a small scale and/or consumed directly by the household farm will be much more difficult to assess, yet they are the crops that tend to experience the highest food losses.

Preliminary assessment of current data availability by Friends of the Chair: C

Primary data source: Administrative data.

Potential lead agency or agencies: FAO.

Indicator 74: Consumption of ozone-depleting substances (MDG Indicator)

Rationale and definition: This indicator measures the consumption trends for ozone-depleting substances (ODS) controlled under the Montreal Protocol on Substances that Deplete the Ozone Layer, thereby allowing inference of the amounts of ODS being eliminated as a result of the protocol. It is expressed in ODP Tons, which is defined as the Metric Tons of ODSs weighted by their Ozone Depletion Potential (ODP).[218]

Disaggregation: To be reviewed.

[217] FAO, IFAD and WFP (2014). *Food security, nutrition and sustainable agriculture in the post-2015 agenda: priority targets and indicators identified by FAO, IFAD and WFP*, Working group paper, FAO: Rome.

[218] For more information on emissions of ozone-depleting substances, see Rockström et al. (2009).

Comments and limitations: The Montreal and the Vienna Convention for the Protection of the Ozone Layer target the complete phase-out of use of ODS.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data.

Potential lead agency or agencies: UNEP Ozone Secretariat.

Indicator 75: Aerosol optical depth (AOD)

Rationale and definition: This indicator measures total aerosols (e.g. urban haze, smoke particles, desert dust, sea salt) distributed within a column of air from the Earth's surface to the top of the atmosphere.

Disaggregation: This indicator can be reported with a high degree of spatial disaggregation (including cities and neighborhood level).

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: Remote sensing/satellite.

Potential lead agency or agencies: An agency such as UNEP could be responsible for collecting internationally comparable data across all countries.

Indicator 76: [Share of companies valued at more than [$1 billion] that publish integrated reporting]– to be developed

Rationale and definition: Today, most companies report only on their financial results without regard to their social and environmental impacts. As a result their investors may not be aware of their full risk exposure. Likewise, society does not know a company's contribution to sustainable development. Several integrated monitoring standards have been developed that track the social and environmental externalities of businesses. One prominent example is the International Integrated Monitoring Council (IISC). We propose that an indicator be created to track the percentage of large companies (i.e. larger than [US$1 billion, measured in PPP]) that prepare integrated reports that are consistent with the SDGs and conform to standards that would need to be defined.

Disaggregation: This indicator can be disaggregated by sector of activity, ownership (listed vs. privately held or public companies), and other characteristics (including location).

Comments and limitations: The standards and methodologies tracked by this indicator need to be defined. In particular, the indicator would need to specify standards for integrated monitoring that can be applied in a wide range of jurisdictions.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: International monitoring.

Potential lead agency or agencies: The Global Compact, Global Reporting Initiative (GRI), World Business Council for Sustainable Development (WBCSD), and/or the International Integrated Monitoring Council (IIRC) could track such an indicator.

Complementary National Indicators for Goal 12:

12.1. **[Strategic environmental and social impact assessments required]– to be developed**. This indicator measures whether strategic environmental and social impact assessments are required for all resource-based projects.

12.2. **[Legislative branch oversight role regarding resource-based contracts and licenses]– to be developed**. This indicator measures the existence and enforcement of a legislative framework around natural resources.

12.3. **[Indicator on chemical pollution] – to be developed.** Chemical pollution is a critical dimension of global environmental change, but it is very difficult to measure on an internationally comparable basis. Several indicators exist for specific pollutants, but they are typically available only in a small subset of countries and measure only a small share of chemical pollution.

12.4. **[CO_2 intensity of the building sector and of new buildings ($KgCO_2$/m2/year)]**. The building sector (residential and commercial) accounts for a large share of greenhouse gas emissions around the world. This indicator is defined as the volume of CO_2 emissions (measured in kilograms) per unit of building surface (measured in square meter) and per year. The indicator is reported for the exiting building stock and new buildings added during the year.

12.5. **[Indicator on policies for sustainable tourism] – to be developed.** This indicator would measure policies on sustainable tourism.

12.6. **[Indicator on sustainable public procurement processes] – to be developed**

Goal 13. Take urgent action to combat climate change and its impacts

Potential and Illustrative Global Monitoring Indicators:

Indicator 77: Availability and implementation of a transparent and detailed deep decarbonization strategy, consistent with the 2°C - or below - global carbon budget, and with GHG emission targets for 2020, 2030 and 2050

Rationale and definition: Keeping global warming within 2°C or less requires that countries prepare national deep decarbonization strategies to 2050, covering all sources of GHG emissions including from energy, industry, agriculture, forest, transport, building, and other sectors. These strategies should be transparent and detail how countries intend to achieve deep emissions cuts (including for energy-related emissions), how to reduce energy consumption, decarbonize the power sector, and electrify energy uses (in particular in the transport and building sectors). They should include targets to reduce GHG emissions by 2020, 2030 and 2050. This indicator also proposes to measure the implementation of such a strategy.

Disaggregation: Opportunities for disaggregation to be reviewed.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: International monitoring.

Potential lead agency or agencies: The proposed indicator tracks the existence of voluntary national strategies, which would be submitted to the UNFCCC.

Indicator 78: CO_2 intensity of new power generation capacity installed (gCO_2 per kWh), and of new cars (gCO_2/pkm) and trucks (gCO_2/tkm)

Rationale and definition: The generation of electricity from the power sector and the consumption of fuel in the transport sector are responsible for a large share of total global GHG emissions. Ultimately, to achieve the levels of emissions reductions necessary to limit the global temperature increase to 2°C or below, the power and transport sectors need to dramatically reduce the emissions associated with the provision of these energy services. Tracking the evolution of the CO_2 intensity of new additions to these sectors is therefore important to assess how these sectors are evolving based on market conditions and policy frameworks in each country.

The proposed power sector indicator is defined as the amount (measured in grams) of CO_2 emissions per unit of generated electricity (measured in kilowatt-hour) from new capacities installed (between two dates of measurement of the indicator).

The proposed transport indicators are defined as the amount (measured in grams) of CO_2 emissions per passenger kilometer travelled (pkm) for new cars, and per ton kilometer travelled (tkm) for new trucks (between two dates of measurement of the indicator).

For the transport sector, changes in activity levels are key drivers of the increase in transport-related CO_2 emissions globally, but absolute levels of transport-related CO_2 emissions are linked to a country's size, population, and level of economic activity. Measuring CO_2 intensity of new cars for passenger transport and new trucks for freight transport allows for more relevant historic and cross-country comparisons, by giving an understanding of how well countries are evolving their vehicle fleets to carry out the transport task, based on a physical performance parameter. It should also be noted that emissions from international air and maritime transport are important sources of global emissions, but these sources are not easily attributable to a particular country.

Disaggregation: Opportunities for disaggregation to be reviewed.

Comments and limitations: Transport activity is typically described by measuring vehicle kilometers (vkm) although such a measure does not allow for ready comparisons across modes or take into account varying load factors. It is also necessary to measure passenger kilometers (pkm) or ton kilometers (tkm) although these metrics require more detailed data collection.

Preliminary assessment of current data availability by Friends of the Chair: Power sector A /Transport sector B

Primary data source: Administrative data.

Potential lead agency or agencies: UNFCCC, IEA. [219]

Indicator 79: Net GHG emissions in the Agriculture, Forest and other Land Use (AFOLU) sector (tCO_2e)

Rationale and definition: This indicator is defined as total net greenhouse gas (GHG) emissions - tons of CO_2 equivalent (tCO_2e) - in the Agriculture, Forest and other Land Use (AFOLU) sector, broken down by gas (including CO_2, N_2O and CH_4) and by land used category (including forest lands, croplands, grasslands, wetlands, settlements and other lands), according to the Intergovernmental Panel on Climate Change (IPCC) 2006 guidelines for the national GHG inventory,[220] and the Good Practice Guidance for Land Use, Land Use Change and Forestry (GPG-LULUCF).[221]

Inventory methods need to be practical and operational. For the AFOLU Sector, anthropogenic GHG and removals by sinks are defined as all those occurring on "managed land." Managed land is land where human interventions and practices have been applied to perform production, ecological or social functions. Emissions/removals of greenhouse gases do not need to be reported for unmanaged land. However, it is good practice for countries to quantify and track over time the area of unmanaged land so that consistency in area accounting is maintained as land-use change occurs.

Disaggregation: By gas and land use category. In addition, they could also be expressed on a per ton of production basis because data on per unit land may lead to misleading conclusions.

[219] For example, see OECD (2008). *Greenhouse Gas Reduction Strategies in the Transport Sector: Preliminary Report*.
[220] Eggleston HS, Buendia L, Miwa K, Ngara T, and Tanabe K (eds.) (2006).
[221] See *Good Practice Guidance for Land Use, Land-Use Change and Forestry*: www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf_contents.html

Comments and limitations: As explained in the introduction of the IPCC 2006 guidelines for the national greenhouse gases inventory chapter 4 on AFOLU,[222] the AFOLU sector has some unique characteristics with respect to developing inventory methods. The factors governing emissions and removals can be both natural and anthropogenic (direct and indirect) and it can be difficult to clearly distinguish between causal factors. In addition, this indicator complements #12 Nitrogen use efficiency in food systems.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data.

Potential lead agency or agencies: The United Nations Framework Convention on Climate Change (UNFCCC) collects data on countries' national GHG inventories, including for the AFOLU sector, on a regular basis.

Indicator 80: Official climate financing from developed countries that is incremental to ODA (in US$)

Rationale and definition: Developed countries have pledged under the Conference of Parties of the UNFCCC to provide some $100 billion per year in climate finance by 2020. This indicator will track official (i.e. public) climate finance provided by each developed country as a contribution towards the overall target of at least $100 billion per year.

Disaggregation: By destination, expenditure for mitigation vs. adaptation, public vs. private resources.

Comments and limitations: This finance commitment under the COP does not define official climate financing in a way that would allow for the creation of an unambiguous global indicator. Several bodies, including the OECD, are proposing standards and definitions. Additional work is required to arrive at internationally accepted coherent standards for monitoring on official climate financing.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: International monitoring.

Potential lead agency or agencies: OECD DAC, UNFCCC.

[222] See: http://www.ipcc-nggip.iges.or.jp/public/2006gl/pdf/4_Volume4/V4_01_Ch1_Introduction.pdf

Complementary National Indicators for Goal 13:

13.1. **[Climate Change Action (CCA) Index]– to be developed**. Composite index that measures preparedness for climate change, including existence of a CCA plan, dedicated CCA authority, whether CCA is integrated into other city department plans, and availability of funding dedicated at the city level to mitigation and adaptation.

13.2. **GHG emissions intensity of areas under forest management ($GtCO_2e/ha$)**. This indicator measures the carbon benefits of improved forest management, through the implementation of reduced-impact logging techniques, which is important since carbon losses due to degradation could be of the same magnitude as those from deforestation.

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Potential and Illustrative Global Monitoring Indicators:

Indicator 81: Share of coastal and marine areas that are protected

Rationale and definition: Well-governed protected coastal and marine areas have proven effective in safeguarding species habitats and populations.[223] Goal C of the Convention on Biological Diversity (CBD) calls to "improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity." In support of this, the CBD's Aichi Biodiversity Target 11 aims to have at least 10% of coastal and marine areas protected by 2020.

The latest official statistics on marine protected areas (MPA) show that less than 3% of the global ocean is protected.[224] Major efforts are required to meet Aichi Target 11 and particular emphasis is needed to protect critical ecosystems such as tropical coral reefs, seagrass beds, deepwater cold coral reefs, seamounts and coastal wetlands.[225]

Disaggregation: Although mostly used at a global scale, the indicator is reported at the national level.

Comments and limitations: A simple MPA percentage does not provide insight as to whether the protected area is being well managed or whether biodiversity is actually being secured.

Preliminary assessment of current data availability by Friends of the Chair: N/A

Primary data source: Country monitoring.

Potential lead agency or agencies: UNEP-WCMC, IUCN, The World Database on Protected Areas (WDPA)

Indicator 82: Percentage of fish tonnage landed within Maximum Sustainable Yield (MSY)

Rationale and definition: MSY is the largest average yield (catch) that can theoretically be taken from a species' stock over an indefinite period under constant environmental conditions. It is usually measured in tons.[226] This indicator provides information on the degree of exploitation of fishery resources and the progress towards sustainable management of fisheries. The UN Conference on the Law of the Sea, the UN Fish Stocks Agreement, the Plan of Implementation of the 2001 World Summit on Sustainable Development, and the CBD, among others, all refer to MSY-based reference points and targets.[227]

---

[223] Secretariat of the CBD (2008). *Protected Areas in Today's World: Their Values and Benefits for the Welfare of the Planet*. Technical Series No. 36

[224] See Official MPA Map, available at: www.protectplanetocean.org/official_mpa_map

[225] See more at: www.cbd.int/sp/targets/rationale/target-11/

[226] See Maximum Sustainable Yield Factsheet from the European Commission: http://ec.europa.eu/fisheries/documentation/publications/cfp_factsheets/maximum_sustainable_yield_en.pdf

[227] See Indicators for Monitoring the MDGs: mdgs.un.org/unid/mi/wiki/7-4-Proportion-of-fish-stocks-within-safe-biological-limits.ashx

In the final declaration from Rio+20, states committed to take urgent measures to "maintain or restore all stocks at least to levels that can produce the maximum sustainable yield (MSY)."

Disaggregation: All UN Member states are asked to report their annual landings by fish species or species group to the FAO. Data quality varies from country to country with fishery landings data often reported by national governments in aggregated form rather than by fish species.

Comments and limitations: One problematic aspect of the MSY is that it is calculated for a single species, ignoring the effects on or from other species.
An alternative concept to the MSY is the Optimum Sustainable Yield (OSY) that also takes into account economic, social, and ecological factors such as job creation. The OSY can be either equal to or below the MSY. However, there is no agreement on a common definition of OSY.

Preliminary assessment of current data availability by Friends of the Chair: N/A

Primary data source: Administrative data from national production and international trade statistics.

Potential lead agency or agencies: FAO.

Complementary National Indicators for Goal 14:

14.1. **Eutrophication of major estuaries:** The increased levels of nutrient runoff and untreated sewage resulting from human activities, are leading to eutrophication, harmful algal blooms (HAB)[228] and "dead zones." The levels of eutrophication need to be monitored in all major estuaries.

14.2. **Ocean acidity (measured as surface pH):** The chemistry of the ocean is not constant and variables such as water temperature affect the dissolution of CO_2, making pH differ from the global average. Consistent measurements will allow better understanding of the processes and impacts of CO_2 absorption.

14.3. **[Indicator on the implementation of spatial planning strategies for coastal and marine areas]– to be developed:** Marine spatial planning is a strategy to distribute (spatially and temporally) human activities in coastal and marine areas in order to guarantee those ecological, social and economic objectives that are decided through a public and political process.[229]

14.4. **Area of coral reef ecosystems and percentage live cover:** This indicator measures the area of live coral reef ecosystem coverage within the national waters.

14.5. **Proportion of fish stocks within safe biological limits (MDG Indicator**): The percentage of fish stocks or species that are exploited within the level of maximum sustainable biological productivity.

14.6. **Percentage of fisheries with a sustainable certification:** Percentage of fisheries that have received a certification for sustainable management.

14.7. **Does flag state require International Maritime Organization (IMO) numbers and transponders for all fishing vessels more than 24 meters or 100 tons?** IMO numbers and transponders

[228] Naeem, S., Viana, V., Visbeck, M. (2014, forthcoming). *Forests, Oceans, Biodiversity and Ecosystem Services*, Draft report of the Thematic Group FOBES, SDSN. To be published by Sustainable Development Solutions Network.
[229] For more information, see website of IOC UNESCO initiative on marine spatial planning: http://www.unesco-ioc-marinesp.be

for fishing vessels can better monitor fishing vessels and contribute to fight illegal, unreported and unregulated (IUU) fishing.

14.8. **Has Regional Fisheries Management Organizations (RFMO) established satellite-monitoring program?** RFMO are adopting satellite monitoring programs to identify vessels that can engage in IUU fishing.

14.9. **[Use of destructive fishing techniques] – to be developed**: This indicator tracks the use of destructive fishing techniques, such as trolley fishing.

14.10. **[Indicator on access to marine resources for small-scale artisanal fishers] – to be developed**

14.11. **[Indicator on transferring marine technology] – to be developed**

14.12. **Area of mangrove deforestation (hectares and as % of total mangrove area).** This indicator tracks preservation of mangrove ecosystems that are essential as nurseries for fish species and barriers to storm surges.

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss

Potential and Illustrative Global Monitoring Indicators:

Indicator 83: Annual change in forest area and land under cultivation (modified MDG Indicator)

Rationale and definition: This indicator tracks the net change of forest area and the expansion of agriculture into natural ecosystems, as well as the loss of productive agricultural land to the growth of urban areas, industry, roads, and other uses, which may threaten a country's food security. It is measured as a percentage change per year and tracked by FAO. Success would be reducing the loss of agricultural land to other uses (industry, urban areas), while also halting the conversion of natural ecosystems to agriculture. Sustainable agroecological intensification would allow increased food production without converting natural ecosystems to agriculture.

Land under cultivation is defined by FAO as land under temporary crops (double-cropped areas are counted once), temporary meadows for mowing or for pasture, land under market or kitchen gardens, and land temporarily fallow.[230] Forest area is land under natural or planted stands of trees, excluding tree stands in agricultural production systems (e.g. plantations or agroforestry systems) and trees in urban parks and gardens.

Disaggregation: This indicator can be disaggregated spatially. It should also distinguish between primary or natural forest, and secondary, degraded, or replanted forest.

Comments and limitations: The indicator could be expanded to also include wetlands or other critical ecosystems.[231]
This indicator will likely be replaced by the Ecosystem Red List Index, which will be ready globally in a few years.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Remote sensing/satellite.

Potential lead agency or agencies: FAO, UNEP.

Indicator 84: Area of forest under sustainable forest management as a percentage of forest area

Rationale and definition: The indicators on annual change in forest area and on protected areas overlay with biodiversity provide important information on the change in forest area and the protection of key forest regions. A third forest-related indicator is needed to track the sustainability of economic and

[230] See FAOSTAT: http://faostat.fao.org/site/375/default.aspx
[231] See FAO Global Forest Resources Assessments: http://www.fao.org/forestry/fra/en

other uses of forests. The Global Forest Resources Assessment 2010 has proposed this indicator measuring the percentage of forest under sustainable management.[232]

Disaggregation: Countries with strong forest management systems can disaggregate the indicator spatially.

Comments and limitations: A challenge for this indicator is to arrive at an internationally consistent definition of sustainable forest management practices.[233] An improved version of the indicator and underlying data will be provided in the 2015 assessment of Global Objectives on Forests.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: Administrative data.

Potential lead agency or agencies: FAO, UNEP.

Indicator 85: Annual change in degraded or desertified arable land (% or ha)

Rationale and definition: The FAO defines land degradation as a reduction in the condition of the land, which affects its ability to provide ecosystem goods and services and to assure its functions over a period of time.[234] Components of land degradation include salinization, erosion, loss of soil nutrients, and sand dune encroachment. Data on land degradation is continuously being improved through advances in remote sensing, digital mapping, and monitoring. A central objective should be to halt all net land degradation by 2030.

Disaggregation: The FAO supports methodologies to determine the extent of degradation, distinguishing between light, moderate, strong, and extreme. Data will be disaggregated by these categories and by sub-region.

Comments and limitations: To date, data on degraded and desertified arable land has been patchy. Efforts have been stepped up since the UN appointed 2010-2020 "the decade of desertification," mostly led by FAO and UNCCD,[235] but there is still some way to go. Investments in remote sensing, digital mapping, and monitoring will be crucial to this effort. It is important to note that despite the FAO definition, there is no single measure or approach to measuring land degradation.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: Remote sensing/satellite and administrative data.

Potential lead agency or agencies: FAO, UNEP.

---

[232] FAO (2010). *Global Forest Resources Assessment 2010*. Rome, Italy: FAO.
[233] UN Statistics Division (2014).
[234] See FAOSTAT: http://faostat.fao.org/site/375/default.aspx
[235] See for example a new methodology being developed by the FAO: ftp://ftp.fao.org/agl/agll/docs/landdegradationassessment.doc and an example of current data availability in UNCCD (2014). *Desertification: The Invisiblel Front Line*. UNCCD: Bonn.

Indicator 86: Red List Index

Rationale and definition: The Red List Index (RLI), drawing on the IUCN Red List of Threatened Species, tracks the rate of extinction for marine and terrestrial species groups in the near future (i.e. 10-50 years) in the absence of any conservation action.[236] A downward trend in the index implies that the risk of a species' extinction is rising. The RLI is used to measure progress towards the Aichi Target 12 of the Convention on Biological Diversity (CBD)[237] and the Millennium Development Goals.

The IUCN Red List is the most respected system to track the status of threatened species according to seven risk categories that range from "extinct" to "least concern."[238] The criteria for determining the risk status of each species are scientifically rigorous and easy to understand for the general public. The Red List Index is applicable to different major species groups, transparent, and can track trends over time.[239] It has been developed for many major species groups, such as amphibians and birds, but important gaps remain, particularly among less well-studied major species groups, such as fungi. For species groups not yet covered by the RLI, a sampled approach can be used that is based on representative samples of species from taxonomic groups.[240]

Disaggregation: By country and major species group, and for Internationally Traded Species.
The RLI can also be disaggregated to regional and national levels, in particular via National Red Lists.[241] We recommend that national and global RLIs be reported by key species group. In the case of smaller countries that cover contiguous marine or terrestrial biomes, it may be more appropriate to report regional RLI by key species group.

We propose that the RLI also be applied to internationally traded terrestrial and marine species including those identified in appendices I and II of the Convention on Internationally Traded and Endangered Species (CITES).[242] The RLI for Internationally Traded Species will track the near-term extinction risk for species that are subject to international trade and whose survival is therefore heavily affected by non-host countries and cooperative international strategies.

Comments and limitations: The Red List Index is a composite index comprising a large number of underlying variables. At first sight it might therefore fall foul of a general preference against composite indices. However, the underlying data for the Red List Index is collected and analyzed by one organization and therefore does not impose any additional burden on NSOs. In view of this fact and the very widespread use of this index its inclusion in an SDG indicator framework strikes us as sensible.

Primary data source: International monitoring.

Preliminary assessment of current data availability by Friends of the Chair: A

[236] Butchart, SH et al (2007). Improvements to the Red List Index, *PLoS ONE* 2(1): 140.
[237] See: http://www.bipindicators.net/indicators for indicators to measure progress towards the Aichi targets.
[238] For more information, see: http://www.iucnredlist.org/technical-documents/categories-and-criteria
[239] For an overview of the Red List, see: http://www.iucnredlist.org/about/red-list-overview
[240] See Baillie, J.E.M., Toward monitoring global biodiversity, *Conservation Letters* 1 (2008) 18–26, and Zoological Society of London web page: http://www.zsl.org/science/indicators-and-assessments-unit/the-sampled-red-list-index
[241] For more information on national RLIs see: www.nationalredlist.org
[242] See CITES website: http://www.cites.org

Potential lead agency or agencies: IUCN and Partner organizations, in particular BirdLife International and UNEP-WCMC.

Indicator 87: Protected areas overlay with biodiversity

Rationale and definition: Terrestrial and marine protected areas are an important means of securing biodiversity and are therefore tracked under the Aichi targets. Yet, the global protected area system does not yet cover a representative sample of the world's biodiversity, nor is it effectively targeted at the most important sites for biodiversity. For this reason Aichi Biodiversity Target 11 of the Convention on Biological Diversity (CBD) places emphasis on the development of ecologically representative protected area systems and the protection of areas of particular importance for biodiversity and ecosystem services.[243] This indicator, developed by BirdLife International and IUCN for UNEP-WCMC (the world conservation monitoring center), measures progress towards these elements of Target 11.

The indicator is a composite of three sub indicators:
(i) the degree of protection of terrestrial and marine ecoregions of the world;
(ii) the degree of protection of Important Bird and Biodiversity Areas (IBAs); and
(iii) the degree of protection of Alliance for Zero Extinction sites (AZEs).
The sub indicators are calculated based on overlays of ecoregions, IBAs and AZEs with all designated protected areas recorded in the World Database on Protected Areas (WDPA) with a known size. The WDPA is the most comprehensive global spatial dataset on marine and terrestrial protected areas available. The methodology used to create a global protected areas layer from the WDPA follows the one used to calculate the protected area coverage indicator.

Disaggregation: Although mostly used at a global scale, the indicator can be calculated for regions, countries, or even biomes,[244] and we recommend that such national-level monitoring become a priority under the post-2015 agenda. In the case of smaller countries covering contiguous ecoregions, a regional representation of this indicator may be more appropriate.

Comments and limitations: The indicator can be used to assess the status of protection and trends in protection over time. It can be widely applied at various scales to measure policy responses to biodiversity loss. UNEP-WCMC is working closely with the Alliance for Zero Extinction and BirdLife International to further improve the datasets and methodology used to calculate the IBA and AZE Protection Indices.[245]

The indicator is more complex than the original MDG Indicator, but it provides much richer information on the state of biodiversity in countries. A simplified and non-composite index for the coverage of protected areas can be derived by focusing only on the first component. This Ecoregion Protection Indicator would represent a weighted average of the percentage attainment of the Aichi target of protecting 17% of terrestrial systems and inland waters, and protecting 10% of marine and coastal areas. Marine protected areas (MPA) are measured as the percentage of a country's exclusive economic

[243] This and the following description of the indicator is drawn from Biodiversity Partnership Indicators; for more information see: http://www.bipindicators.net/paoverlays
[244] See Biodiversity Indicators Partnership (2010).
[245] See Butchart, S.H.M. et al (2012). *Protecting Important Sites for Biodiversity Contributes to Meeting Global Conservation Targets,* PLoS ONE 7(3): e32529. doi:10.1371/journal.pone.0032529

zone (EEZ) that is under protection[246] and is reported under the Marine Protected Areas Database (WDPA).[247] Like the Aichi target, each component of the proposed index is measured separately and capped at 100% so that the greater protection of one terrestrial ecoregion will not compensate for the insufficient protection of another system.

While using the coverage of protected areas would simplify the task of countries regarding the collection of data, this indicator would fail to provide information on the effectiveness of the management of the protected area. Moreover, a percentage of protected area does not provide any insights on whether the area protected is critical for securing regional biodiversity.
Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: International monitoring.

Potential lead agency or agencies: UNEP-WCMC.

[246] See United Nations Convention on the Law of the Sea website: http://www.un.org/depts/los/convention_agreements/texts/unclos/part5.htm
[247] See WDPA website: http://www.wdpa.org

Complementary National Indicators for Goal 15:

15.1. **Improved tenure security and governance of forests**. Percent of forest area with clear and secure tenure rights.

15.2. **[Indicator on the conservation of mountain ecosystems] – to be developed**. This indicator would measure the sustainable conservation and management of mountain ecosystems

15.3. **Vitality Index of Traditional Environmental Knowledge (VITEK)**. This indicator tracks trends in the degree to which traditional knowledge and practices of indigenous and local communities are respected and integrated in the implementation of the Convention on Biological Diversity.[248]

15.4. **[Indicator on access to genetic resources] – to be developed.**

15.5. **Abundance of invasive alien species.** This indicator tracks the number of invasive alien species found in the country.

15.6. **[Indicator on financial resources for biodiversity and ecosystems] – to be developed.**

15.7. **[Indicator on financial resources for sustainable forest management] – to be developed.**

15.8. **[Indicator on global support to combat poaching and trafficking of protected species] – to be developed.**

15.9. **Living Planet Index:** This indicator is a measure of the state of the world's biological diversity, based on species population trends. It is calculated using time-series data on more than 10,000 populations of over 3,000 species of mammals, birds, reptiles, amphibians and fish. The changes in the population of each species are aggregated and compared to the value in 1970.[249]

[248] For more information see VITEK website: http://www.terralingua.org/vitek
[249] For more information, see Biodiversity Indicators Partnership webpage: www.bipindicators.net/lpi

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Potential and Illustrative Global Monitoring Indicators:

Indicator 88: Violent injuries and deaths per 100,000 population

Rationale and definition: This statistic measures injuries and fatalities resulting directly from violence, including assaults (beatings, abuse, burnings) and armed violence but not accidents or self-inflicted injuries, expressed in terms of a unit per 100,000 population. We include injuries, as there are many forms of violence that do not result in death.

Disaggregation: This data is a reflection of the level of violence in a given country and should be disaggregated by sex (to distinguish violence against women), by age (to identify violence against children), by ethnicity (to track possible genocides), and by geography (to identify sub-national pockets of violence and to track urban crime). In addition, the intentional homicide rate should be reported separately from the deaths due to armed conflict.

Comments and limitations: Death rates can have just as much to do with access and quality of health care as it does with the level of violence. Tracking injuries helps overcome this limitation. The United Nations Office on Drugs and Crime (UNODC) gathers annual statistical data on intentional homicide[250] and WHO collects data on injuries. However, few countries actually report and the reliability of the national data may vary, especially for those countries afflicted with conflict. A real push for better data must be made. This effort can be supported and complemented by other non-profit and academic programs, such as the Uppsala Conflict Data Program (UCDP), which records data on organized violence.[251]

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data and civil registration and vital statistics.

Potential lead agency or agencies: Data should be compiled for all countries by UNODC, WHO and/or the UN Office for the Coordination of Humanitarian Affairs (UNOCHA). In addition, according to UNICEF, most countries have injury surveillance systems that can be strengthened and expanded.

Indicator 89: Number of refugees

Rationale and definition: This indicator tracks the number of people displaced across national borders as a result of conflict, natural disasters, or other causes. It measures the total number refugee population by country or territory of origin. Exile and displacement due to conflict, natural disasters, or other causes undermine peacebuilding processes and the possibility of sustainable development. They also

[250] See UNODC database: http://www.unodc.org/unodc/en/data-and-analysis/statistics/index.html
[251] See UCDP database: http://www.pcr.uu.se/research/ucdp/database

increase the risk of regional instability when refugees are hosted in neighboring countries, resulting in part from tensions with local populations.

Disaggregation: By sex, age, religion, national and ethnic origin, and disability where possible.

Comments and limitations: It is difficult to get accurate figures as populations are constantly fluctuating.

Preliminary assessment of current data availability by Friends of the Chair: B

Primary data source: International monitoring.

Potential lead agency or agencies: Data is available from the UN High Commissioner for Refugees, OCHA, and IOM.

Indicator 90: Proportion of legal persons and arrangements for which beneficial ownership information is publicly available

Rationale and definition: There is no serious, legitimate reason for hiding the true ownership of companies, trusts, or similar legal structures from a country's tax authorities. In many of the poorest countries, anonymous shell companies in offshore locations open the door to corruption and defrauding the public purse. Transparent beneficial company ownership is crucial to curb these illicit financial flows and capital flight that undermine sustainable development. Beneficial ownership should therefore be transparent and publicly available.[252]

Disaggregation: TBD.

Comments and limitations: Governments can report on the number of entities registered with them, though the number of legal entities is very hard to track, and publish a public register of beneficial ownership.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: Primarily data from administrative sources.

Potential lead agency or agencies: OECD's Global Forum on Transparency and Exchange of Information for Tax Purposes and Financial Action Taskforce, and other transparency initiatives such as the Financial Secrecy Index and the Open Company Data Index.

Indicator 91: Revenues, expenditures, and financing of all central government entities are presented on a gross basis in public budget documentation and authorized by the legislature

Rationale and definition: Lack of fiscal transparency weakens government accountability and increases opportunities for corruption or poor management, ultimately undermining progress towards the SDGs. Government revenues and budgets are often difficult for stakeholders to track. Increasingly, however,

[252] Financial Action Taskforce (2014), *FATF guidance Transparency and Beneficial Ownership*.

fiscal transparency has become the norm, bolstered by international standards like the recently updated IMF Guide on Fiscal Transparency.[253] Transparency strengthens the opportunities for public oversight by allowing for public engagement in budgeting processes and for public scrutiny of discrepancies. These discrepancies can exist between revenue and expenditure data, as well as other published data including payments by companies and corporate tax disclosures. Public scrutiny can help identify both national discrepancies as well as intentional discrepancies, caused, for instance, by Base Erosion and Profit Shifting (BEPS) and illicit flows. This is particularly important in the context of natural resource revenues, which present greater risks of mismanagement and corruption, as recognized by Pillar IV of the IMF Fiscal Transparency code, which focuses on Resource Revenue Management. Importantly, budget transparency will facilitate tracking of domestic resource mobilization and expenditures towards the SDGs.

This indicator, based on Pillars II and IV of the IMF Fiscal Transparency Code, measures the timely publication of revenues, expenditures, and financing of all central government entities, and that this data is presented on a gross basis in public budget documentation and authorized by the legislature. Revenues include taxes, royalties, dividends, bonuses, license fees, payments for infrastructure improvements, payments in kind, or any other significant payment and material benefit.[254] Importantly, "expenditures" refers to all expenditures, including off-budget expenditures, which is particularly important with natural resource revenues, which are often not allocated through the national budget. This indicator also includes monitoring on the use of fuel subsidies, which can be a large extra-budgetary expenditure in a number of countries.

This indicator would track the publication of all revenues and expenditures as follows:

- 100: Public budget documentation incorporates all gross domestic and external revenues, expenditures, including off-budget and tax expenditures (including fuel subsidies), financing by central government ministries, agencies, extra-budgetary funds, and social security funds. Government also reports on resource revenue collections by project;
- 66: Public budget documentation incorporates all gross domestic tax and non-tax revenues, expenditures, and financing by central government ministries, agencies, and extra-budgetary funds. Government also reports on resource revenue collections by project;
- 33: Public budget documentation incorporates all gross domestic tax revenues, expenditures, and financing by central government ministries and agencies;
- 0: The government does not publish revenues and expenditures.

Disaggregation: Resource revenues should be disaggregated by project and company.

Comments and limitations: TBD.

Preliminary assessment of current data availability by Friends of the Chair: C

Primary data source: Administrative data and international monitoring.

Potential lead agency or agencies: IMF, UN Global Compact, EITI, and/or UNCTAD.

[253] See IMF (2014). *Update on the Fiscal Transparency Initiative*.
[254] Collier, P and Antonio, P et al. (2013).

Indicator 92: Percentage of children under age 5 whose birth is registered with a civil authority

Rationale and definition: In many developing countries, the births of a substantial share of children are unregistered. Registering births is important for ensuring the fulfillment of human rights. Free birth registration is the key starting point for the recognition and protection of every person's right to identity and existence. Failure to register births either due to insufficient administrative systems, discrimination, or isolation is a key cause of social exclusion. By ensuring registration of all births, countries will increase their population's opportunities to access services and opportunities and their ability to track health statistics (infant mortality rates, vaccination coverage, etc.).

Disaggregation: Data should be disaggregated by sex, ethnicity, religion, disability, indigenous status, geographic location (etc.) to identify and end discrimination within the population.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: This indicator is measured through national civil registration and vital statistics, which are complemented by household surveys in most countries.

Potential lead agency or agencies: UNICEF collects global data through the MICS questionnaire, which asks mothers (or primary caregivers) of children under 5 whether they have a birth certificate or are otherwise registered with civil authorities, and their knowledge of how to register a child.[255]

Indicator 93: Existence and implementation of a national law and/or constitutional guarantee on the right to information

Rationale and definition: This indicator helps assess whether a country has a legal or policy framework that protects and promotes access to information. Public access to information helps ensure institutional accountability and transparency. It is important to measure both the existence of such a framework and its implementation, as good laws may exist but they may not be enforced. This can be simply due to a lack of capacity, more systematic institutional resistance, or a culture of secrecy or corruption.[256] Furthermore, exceptions or contradictory laws, such as government secrecy regulations, can erode these guarantees.

Disaggregation: TBD.

Comments and limitations: It is also important that public access to information be timely, accessible, user-friendly and free of charge, though this is beyond the current scope of the indicator.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: International monitoring.

[255] UNICEF, (2013), *Every Child's Birth Right: Inequities and trends in birth registration*, New York, NY: UNICEF, 6.
[256] UNESCO, (2010), *Media Development Indicators: A framework for assessing media development.*

Potential lead agency or agencies: UNESCO.

Indicator 94: Perception of public sector corruption

Rationale and definition: Public sector corruption is a barrier to development and diverts resources away from poverty-eradication efforts and sustainable development. Corruption is difficult to measure since objective data tends to be highly incomplete and difficult to compare. Transparency International is a global civil society organization that works to fight corruption and has developed the Corruption Perceptions Index (CPI).[257] The CPI ranks countries based on how corrupt their public sector (administrative and political) is perceived to be. It is a composite perception-based index drawing on corruption-related data collected by a variety of reputable institutions. The CPI reflects the views of observers from around the world, including experts living and working in the countries and territories evaluated. Transparency International publishes annual reports covering 177 countries with some 20 years of historic data.

Disaggregation: Opportunities for disaggregation to be reviewed.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: C

Primary data source: International monitoring.

Potential lead agency or agencies: Transparency International.

Complementary National Indicators for Goal 16:

The New Deal for Engagement in Fragile States process and the g7+ are working to identify relevant and context-specific indicators to measure progress in peacebuilding and statebuilding. In addition to those they will suggest, countries can consider the following:

16.1. **Percentage of women and men who report feeling safe walking alone at night in the city or area where they live.** It is important to understand citizens' experiences of personal security to adapt security and justice services. Gallup already conducts polling surveys on perceptions of safety in 135 countries.[258] This is of particular concern in urban areas, and disaggregation is encouraged by geography (urban/rural).

16.2. **Compliance with recommendations from the Universal Periodic Review and UN Treaties.** This new indicator assesses the extent to which states engage with the UN human rights mechanisms. The Universal Period Review (UPR) and the UN Human Rights Treaty Bodies issue recommendations, which can require states to make administrative, legislative, or judicial changes to enable the full realization of human rights. This indicator proposes to quantify these recommendations – they are easily accessible

[257] See TI's Corruption Perceptions Index website: http://www.transparency.org/research/cpi/overview
[258] See Crabtree, S. (2013). *Venezuelans, South Africans Least Likely to Feel Safe.* See http://www.gallup.com/poll/162341/venezuelans-south-africans-least-likely-feel-safe.aspx

and can be collected and aggregated. The indicator would then measure the extent to which states have engaged and adopted the recommendations from both review processes.

16.3. **Frequency of payment of salaries within security forces.** This indicator measures the frequency and regularity with which members of a police force and military receive their full salaries. It reflects government resources and capacity. Late and partial payment of salaries is a well-known factor of violence and conflict.

16.4. **Percentage of people and businesses that paid a bribe to a public official, or were asked for a bribe by a public official, during the last 12 months.** This indicator speaks directly to individuals' and businesses' experiences of corruption and bribery, which can have a profound financial impact on the economy and government expenditures and speaks to the accountability of institutions. The indicator can measured through surveys. A bribe is understood as defined in the United Nations Convention Against Corruption (UNCAC) as the promise, offering or giving, to a public official, directly or indirectly of an undue advantage for the official himself or herself or another person or entity, in order that the official act or refrain from acting in the exercise of his or her official duties and the solicitation or acceptance by a public official, directly or indirectly of an undue advantage for the official himself or herself or another person or entity, in order that the official act or refrain from acting in the exercise of his or her official duties.

16.5. **Percentage of total detainees who have been held in detention for more than 12 months while awaiting sentencing or a final disposition of their case**. This indicator can be used to assess the overall functioning and effectiveness of the justice system in any given country. At the international level, extensive data on prisons is collected by UNODC and data on persons in pre-trial detention is available in 118 countries and territories. Extensive data is also commonly available at a national level from law enforcement authorities.

16.6. **[Indicator on illicit financial flows] – to be developed**. This indicator will track illicit financial flows in and out of countries.

16.7. **[Indicator on international cooperation in preventing violence and combating terrorism and crime] – to be developed**. This indicator will track international cooperation for building capacities at all levels, in particular in developing countries, for preventing violence and combating terrorism and crime**.**

16.8. **Number of journalists and associated media personnel that are physically attacked, unlawfully detained or killed as a result of pursuing their legitimate activities.** This indicator measures the safety and fundamental freedom of journalists and associated media personnel to practice their profession. UNESCO tracks killing of journalists, and many NGOs partner with UNESCO to also track broader journalist safety.[259]However this indicator should not be taken as a proxy for press freedom.

[259] See http://www.unesco.org/new/en/communication-and-information/freedom-of-expression/safety-of-journalists/unesco-partners-in-the-field-of-the-safety-of-journalists

Goal 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development

Potential and Illustrative Global Monitoring Indicators:

Indicator 95: Domestic revenues allocated to sustainable development as percent of GNI, by sector

Rationale and definition: This indicator tracks government resource mobilization for sustainable development as a share of GNI. The data can be collected on an internationally comparable basis by the IMF, which should define the government spending categories that support sustainable development (e.g. most military expenditure and some subsidies should be excluded). Once the relevant government spending categories have been defined, the indicator can be compiled for all countries.

In general, the richer a country, the higher government spending can be as a share of GNI. It seems reasonable that countries should aim to mobilize at least 15-20% of GNI as government spending.

Disaggregation: By sector.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: Administrative data.

Potential lead agency or agencies: IMF

Indicator 96: Official development assistance and net private grants as percent of GNI

Rationale and definition: This indicator measures official development assistance (ODA) plus net private grants as a share of a country's gross national income. For donor countries, the OECD Development Assistance Committee (DAC) defines both variables.[260] The target value for ODA is the international commitment of 0.7% of GNI, with the additional commitment of 0.15-0.2% of GNI for LDCs (see indicator 10.4).

For ODA recipient countries on the DAC list, this indicator measures the amount of ODA received as a percentage of its GNI. It is a continuation of indicators under MDG Goal 8 and is a measure of aid dependency.

Disaggregation: By destination, sector, and other dimensions reported under the DAC databases.

Comments and limitations: The OECD-DAC is currently revising and improving indicators on ODA in order to, among other considerations, better reflect provider effort for development, account for recipients' resource receipts, and address some of the weaknesses of current ODA measures. The new measures

[260] OECD (2013). *Development Cooperation Report 2013: Ending Poverty*. Paris, France: OECD Publishing.

could also potentially allow for more comprehensive monitoring of external development for global objectives or public goods.[261]

In addition, this ratio measures the quantity of ODA, but cannot measure the effectiveness or the development outcomes resulting from these flows.

Preliminary assessment of current data availability by Friends of the Chair: A

Primary data source: Administrative data.

Potential lead agency or agencies: Data for this indicator can be tracked by the OECD DAC for all OECD countries and affiliated countries that submit data to the OECD (e.g. Saudi Arabia).

Indicator 97: Private net flows for sustainable development at market rates as share of high-income country GNI, by sector

Rationale and definition: International private finance is critical for financing sustainable development. In particular private finance can fund private sector development (including agriculture) and infrastructure. The proposed indicator will track international private flows at market rates using the OECD DAC definition, which includes: direct investment, international bank lending (maturity > 1 year), bond lending (maturity > 1 year), and other flows (mainly reported holdings of equities issued by firms in aid recipient countries).[262]

Disaggregation: By sector, destination, and type of private flows.

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: Administrative data.

Potential lead agency or agencies: This indicator can be reported for all high-income as well as middle-income countries. Data for this indicator can be collected by the OECD DAC and other agencies (TBD).

[261] More information on the OECD's work on External Financing for Development is available here: http://www.oecd.org/dac/Financing-Development.htm

[262] Ibid.

Indicator 98: Annual report by Bank for International Settlements (BIS), International Accounting Standards Board (IASB), International Financial Monitoring Standards (IFRS), International Monetary Fund (IMF), World Intellectual Property Organization (WIPO), and World Trade Organization (WTO) [other organizations to be added] on the relationship between international rules and the SDGs and the implementation of relevant SDG targets

Rationale and definition: This indicator will track whether key international institutions deliver an official annual report assessing whether international rules are consistent with achieving the SDG. The reports should also outline options for improvement to make the rules consistent with achieving the goals. Institutions and reports covered by this indicator include:

- BIS: Report on international financial regulatory standards (i.e. Basel III and successors)
- IASB: Report on international accounting standards.
- IFRS: Report on international financial monitoring standards
- IMF: Report on the international financial system.
- WIPO: Report on the international intellectual property regime.
- WTO: Report on the international trade system.

Other organizations can be added to this indicator.

This indicator should also address issues relating to the internal governance of the above institutions.

Disaggregation: Monitoring would be done by institution.

Comments and limitations: To be reviewed once the indicator has been constructed.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: International monitoring.

Potential lead agency or agencies: BIS, IASB, IFRS, IMF, WIPO, WIPO, etc.

Indicator 99: Share of SDG Indicators that are reported annually

Rationale and definition: To become an effective management tool and report card, the SDGs need to be underpinned by quality data that is reported annually. This will require significant investments to improve existing measurement instruments (for example to speed up monitoring and enhance disaggregation), create new instruments, and build the capacity of NSOs, especially in LDCs, and international statistical agencies. We propose that a simple indicator be created that tracks the share of SDG indicators – possibly including Complementary National as well as Global Monitoring Indicators – that are reported on an annual basis. Such an indicator will provide a good proxy for the effectiveness of national monitoring systems for the SDGs and investments made to strengthen them.

Disaggregation: TBD.

Comments and limitations: The indicator should only track indicators that can and should be tracked annually. This may, for example, exclude life expectancy at birth.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: TBD.

Potential lead agency or agencies: UNSD.

Indicator 100: Evaluative Wellbeing and Positive Mood Affect

Rationale and definition: Measures of evaluative wellbeing capture a reflective assessment of an individual's overall satisfaction with life. One of the most widely used measures of evaluative wellbeing is the Cantril Self-Anchoring Striving Scale, which is included in Gallup's World Poll of more than 150 countries, representing more than 98% of the world's population. It asks respondents to imagine a ladder with steps numbered 0 (bottom) to 10 (top), with 10 representing the best possible life for you and 0 the worst. Respondents then respond with which step they feel they are currently on, and where they will be in 5 years.[263]

The Cantril Scale measures how individuals evaluate their own lives, and is complemented by the positive affect measure of "Positive Mood," which measures the ups and downs of daily emotions. Positive affect specifically measures a range of recent positive emotions. Although short-term emotional reports carry much less information about life circumstances than do life evaluations, they are very useful at revealing the nature and possible causes of changes in moods on an hour-by-hour or day-by-day basis.[264]

Disaggregation: By sex, age, and geography (urban/rural, region).

Comments and limitations: To be reviewed.

Preliminary assessment of current data availability by Friends of the Chair: TBD.

Primary data source: Household surveys.

Potential lead agency or agencies: In cooperation with polling organizations, such as Gallup International, and NSOs, the SDSN or the OECD could report the subjective wellbeing data.

[263] For more information see OECD (2013). *Guidelines on Measuring Subjective Wellbeing*. Available at http://www.oecd.org/statistics/Guidelines%20on%20Measuring%20Subjective%20Well-being.pdf

[264] For more details see Helliwell et al. (2013). *World Happiness Report*. http://unsdsn.org/happiness

Complementary National Indicators for Goal 17:

17.1. **Total Official Support for Development.** This is a new indicator being developed by the OECD to measure various development finance flows in addition to ODA to support the broader development agenda.[265]

17.2. **Country Programmable Aid (CPA).** This OECD DAC indicator measures the portion of aid donors program for individual countries, which represent actual transfers of funds, and which recipient countries could manage. CPA is considered to be much closer than ODA to capturing the real flows of aid.[266]

17.3. **[Indicator on debt sustainability] – to be developed**. This indicator tracks the sustainability of a country's debt.

17.4. **Gross domestic expenditure on R&D as share of GDP**. This indicator measures all expenditure on research and development carried out in the national territory.

17.5. [**Indicator on technology sharing and diffusion] – to be developed**. This indicator would measure technology diffusion across countries.

17.6. **[Indicator on the creation of / subscription to the Technology Bank and STI (Science, Technology and Innovation) Capacity Building Mechanism for LDCs by 2017] – to be developed.** This indicator would track progress towards operationalizing the Technology Bank and STI Capacity Building Mechanism for LDCs

17.7. **Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (MDG Indicator).** This indicator tracks efforts made by developed countries to reduce or remove tariffs (customs duties that are financial barriers to imports) in three sectors that are particularly important for developing countries and LDCs.

17.8. **Value of LDC exports as a percentage of global exports.**

17.9. **[Indicator on investment promotion regimes for LDCs] – to be developed.**

17.10. **Percent of official development assistance (ODA), net private grants, and official climate finance channeled through priority pooled multilateral financing mechanisms.** This indicator tracks the share of aid and official climate finance that passes through the following multilateral pooling mechanisms: the Global Alliance for Vaccine Initiative (GAVI), the Global Environment Facility (GEF), the Global Fund to Fight HIV/AIDS, TB, and Malaria (GFATM), the Green Climate Fund, the International Development Association (IDA), the International Fund for Agricultural Development (IFAD), UNFPA, UNICEF, [other mechanisms to be added, e.g. for education, agriculture, technology transfer]. These pooled disbursement mechanisms offer lower transaction costs for recipients and donors. They can also ensure greater scalability of aid flows.

[265] See OECD (2014). *Development Finance: Total Official Support For Development - An Emerging Concept In Support Of The Post-2015 Sustainable Development Goals.* Paris: OECD.

[266] See Benn, J., Rogerson, A. and Steensen, S. (2010). *Getting Closer To The Core - Measuring Country Programmable Aid. Development Brief.* OECD Development Co-operation Directorate.

Annex 6: Frequently Asked Questions on Goals, Targets, and Indicators

Below we highlight and answer questions that are asked frequently in relation to indicators for the post-2015 agenda and this report. This Annex complements the FAQs provided in the SDSN *Action Agenda for Sustainable Development.*[267]

Question 1: What is the purpose of indicators for Sustainable Development Goals?

The indicators serve two purposes: management (to stay on course) and accountability (to hold all stakeholders to the SDGs). For management purposes, the indicators need to be accurate and frequent, reported at least once per year.

Question 2: Where do the proposed Goals come from? Have they changed since they were first presented by the SDSN in June 2013?

The Goals listed in this report were proposed by the Open Working Group (OWG) for Sustainable Development Goals. Earlier drafts of this report were organized around the goals and targets proposed by the Leadership Council of the SDSN in June 2013, following extensive internal and public consultations. Principles for Framing Goals, Targets, and Indicators are available on SDSN's website.

Question 3: Who are the indicators for? Can businesses use them?

[267] SDSN (2013).

The indicators are designed to track the SDGs at local, national, regional, and global levels. They would apply to all stakeholders, particularly local and national governments. Civil society can use them for operational, monitoring, and advocacy purposes. Businesses will find them useful to understand and promote their contributions to sustainable development, but most business will require different types of metrics. The World Business Council on Sustainable Development, the Global Monitoring Initiative, and the Global Compact are exploring how existing business metrics might be adapted to be consistent with the proposed SDG indicator framework (Box 3).

Question 4: What are the main lessons from the MDG Indicators and monitoring of the MDGs?

Many MDG Indicators, such as those for extreme income poverty, are reported with very long lags of 3-5 years, and data coverage remains patchy. Many national statistical systems lack the capacity to generate comprehensive high-quality data. As a result, available data on MDG Indicators cannot serve real-time implementation, management, and progress review. Moreover, it took a very long time for the MDG data collection system to emerge and to improve following the adoption of the MDGs.

The SDGs need annual data collection with higher quality data. We support the call for a "data revolution" made by the High-Level Panel of Eminent Persons on the Post-2015 Agenda. This report lays out how an SDG indicator framework might be constructed.

Question 5: What can be done differently this time? How can SDG monitoring be better than monitoring of the MDGs?

To enable comprehensive annual monitoring on all SDG indicators, the following conditions must be met: First, the indicators need to be well defined and compatible with low-cost but reliable data collection systems. Second, for each indicator one or more organizations from inside or outside the UN system must be made responsible for ensuring annual data collection. Third, governments and the international community must find the resources to fund effective data collection systems at national and international levels. Private companies should make their know-how and services available to support this important effort. Fourth, where it is impossible or inadvisable to collect annual data for an indicator, projections can be used to fill gaps (Annex 2, page 92).

Question 6: What is the relation between the proposed SDG Indicators and existing MDG Indicators?

Where possible, we recommend that existing MDG Indicators be retained for the SDG indicator framework, with improved quality and frequency. Such indicators are marked "MDG Indicator" in the list of proposed indicators. Many new indicators have been added either to cover issues that were not included under the MDGs or to improve and deepen the monitoring of themes covered under the MDGs.

Question 7: What are "Global Monitoring Indicators" and "Complementary National Indicators"?

We propose that each goal be tracked by a small number of global "Global Monitoring Indicators" that will be monitored systematically for all countries. Some Global Monitoring Indicators apply only to some countries (e.g. malaria indicators), but the vast majority of Global Monitoring Indicators have been designed to apply to every country. We recommend that the number of Global Monitoring Indicators be kept to no more than 100 indicators – the maximum number of indicators we believe the international system can report and communicate on effectively.

In addition to the Global Monitoring Indicators that will, to the extent applicable, be monitored and reported for all countries, we propose additional Complementary National Indicators that individual countries may consider for their monitoring systems. These Complementary National Indicators may relate to issues affecting only a subset of countries, such as neglected tropical diseases (NTDs), or they may relate to issues that a subset of countries may wish to emphasize in their national strategies and monitoring. Naturally, countries may consider as many Complementary National Indicators as they like, including indicators not listed in this report or other global lists.

Question 8: Why do some indicators focus on outcomes whereas others focus on inputs or means?

Where possible, the SDGs and their indicators should focus on outcomes, such as ending extreme poverty. Yet, the distinction between outcomes, outputs, and inputs needs to be handled pragmatically, and the design of goals, targets, and indicators should be guided by approaches that are best suited to mobilize action and ensure accountability. In some cases, input metrics can play a critical role in driving and tracking the changes needed for sustainable development. For example, access to health services is a vital component of Universal Health Coverage. Similarly, ODA is difficult to mobilize but critical for achieving the SDGs. Dedicated indicators are needed to track both inputs. Similar considerations apply to several environmental metrics where outcomes might only materialize after long periods of time.

Question 9: How can a country tell whether it has achieved a target? What are the target ranges for indicators?

Quantitative ranges for the indicators help us determine whether targets have been reached. In some cases the target explicitly defines the indicator range. In the Open Working Group proposal target ranges are highlighted with an "x," signifying that a quantitative target will be determined.[268] In a few cases target ranges need to be defined, either internationally or individually at the country level. For example, in applying Indicator 24 (Percent of population overweight and obese) the WHO or other bodies may propose target ranges that countries could aim for.

Many targets call for "universal access" (e.g. to infrastructure) or "zero" deprivation (e.g. end to extreme poverty or hunger). For each such target, the technical communities and member states will need to define the precise quantitative standard for their commitment to "universal access" or "zero" deprivation. We hope that in most cases these standards (or the "target ranges" for the indicators) will indeed be 100 percent or 0 percent, respectively, but there may be areas where it is technically impossible to achieve 100 percent access or 0 percent deprivation. In such cases countries should aim to get as close as possible to 100 percent or 0 percent, respectively.

Question 10: Why are some indicators in square brackets?

In some areas available and commonly measured indicators strike us as insufficient to guide the implementation of strategies for achieving the SDGs. If new indicators are needed or if available indicators need to be modified then we present them in square brackets. The SDSN proposes to work with international institutions during 2015 to discuss the relevance, accuracy, appropriateness and realism of the recommended indicators. In a few cases what we are suggesting will turn out not be possible to implement in a timely and accurate manner.

[268] Available at https://sustainabledevelopment.un.org/focussdgs.html

Question 11: How can the indicators be disaggregated?

Data for the post-2015 agenda should be disaggregated to determine whether population groups are disadvantaged, which might in turn require targeted policies and programs. The descriptions of the proposed SDG indicators outline how these indicators can be disaggregated. These suggestions should by no means be seen an exhaustive list – instead we call on countries and international agencies to find creative and effective ways for disaggregating data by:

(i) characteristics of the individual or household (e.g. sex, age, income, disability, religion, ethnicity and indigenous status);
(ii) economic activity;[269] and
(iii) spatial disaggregation (e.g. by metropolitan areas, urban and rural, or districts).

For disaggregation by age, countries should at a minimum disaggregate by the following set of groups: 0-2 years (infants), 2-5 years (pre-school age), 5-14 years (school age), 15-49 years (childbearing age), 15-64 years (working ages) and 65 years and older (elderly persons). For more details, please see Annex 3, page 96).

Question 12: Why are some composite indices included in this report?

Composite indices like the Human Development Index (HDI) derive an overall numerical score by combining a number of different measures. In general, such indices should be avoided for Global Monitoring Indicators, though they may play an important role in thematic monitoring (Annex 5 and Section II). In some rare cases a composite index can be considered for inclusion among the Global Monitoring Indicators. In Annex 5 (page 103) we discuss the merits of each composite index considered in this report.

Question 13: Why are multiple variables combined?

In some cases, multiple variables appear in the same indicator, for instance incidence and death rates for certain diseases. This is consistent with the MDG Indicators and should not present any additional burden on statistical systems.

[269] For example, water use should be accounted for by economic activity using International Standard Industrial Classification of All Economic Activities ISIC.

Question 14: Can the SDG indicator framework include subjective or perception-based indicators?

As a general approach, we recommend direct, objective measures and experiential metrics from household and other forms of surveys. We nevertheless recommend three perception-based Global Monitoring Indicators:

- Evaluative Wellbeing and Positive Mood Affect (100): this indicator for subjective wellbeing (or happiness) requires perception-based indicators, such as asking people how satisfied they were with their lives in the past year.
- Perception of public sector corruption (94): no broad-based direct measures are available for corruption that could be collected at national scale and compared internationally. The perception-based corruption indicators compiled by Transparency International have become an internationally recognized reference. They are collected in some 177 countries and are used by governments, civil society organizations, businesses, and international organizations on a daily basis. We believe they can make an important contribution to the SDG indicator framework.
- Secure rights to land/urban tenure security (5): documentation alone is often not sufficient to gauge true tenure security, so the perception component of this indicator provides valuable complementary information. In addition, the perception measure may facilitate more useful comparisons across countries.

We also recommend a Complementary National Indicator on people's perceptions of security.

Question 15: How can baselines be established for new indicators?

Historic baselines exist for many of the proposed indicators. In some cases, baselines do not exist and may be difficult to establish. Yet this should not serve as a reason not to create new indicators that are urgently needed. As recommended by the IEAG on the Data Revolution, we should harness the richness of traditional and new data, and work with "think-tanks, academics and NGOs as well as the whole UN family in analyzing, producing, verifying and auditing data, providing a place for experimentation with methods for integrating different data sources, including qualitative data, perceptions data and citizen-generated data, and eventually produce a 'people's baseline' for new goals."[270]

Question 16: How do the indicators address the global rules and standards for trade, investment, intellectual property rights, and other areas?

Sound global rules for trade, investment, intellectual property, and many other areas are critical for achieving the SDGs. A large number of intergovernmental and international processes are responsible for setting and enforcing these international rules and standards. For example, trade rules are set through the World Trade Organization (WTO), numerous regional trade bodies, and a rapidly growing number of bilateral agreements. Through its TRIPS provisions, the WTO in conjunction with the World Intellectual Property Organization (WIPO) set international standards for intellectual property rights. The Bank for International Settlements (BIS) coordinates regulatory regimes for the regulation of the finance and insurance industries, and the International Accounting Standards Body (IASB) does the same for international business accounting standards.

[270] IEAG on the Data Revolution (2014). *A World That Counts: A Data Revolution for Sustainable Development.*

The international rules and standards are highly technical and context specific. They also evolve over time. As a result, it may not be possible to specify universal targets for international rules to be achieved by 2030 as part of the SDGs. For this reason, the SDSN proposes that indicator 98 require that the international bodies setting rules and standards provide an annual report on the relationship between the international rules and the SDGs. Such “coherence checks” would highlight inconsistencies between the rules and the global goals, which would then be addressed by member states and other stakeholders. They will also ensure that each standard-setting body takes into consideration the full implications of its rules and standards on the three dimensions of sustainable development.

Bibliography

Alder, J. et al. (2010). Aggregate performance in managing marine ecosystems of 53 maritime countries. *Marine Policy*, 34: 468-476.

Alkire, S. (2014). *A New Household Survey to Catalyse the Data Revolution*, Post2015.org. Available at http://post2015.org/2013/11/21/a-new-household-survey-to-catalyse-the-data-revolution/

Alkire, S. and Foster, J. (2011). Understanding and misunderstandings of multidimensional poverty measurement. *The Journal of Economic Inequality*. June 2911, Volume 9, Issue 2, p 289-314.

Alkire, S. and Sumner, A. (2013). *Multidimensional Poverty and the Post-2015 MDGs*. OPHI Briefing Note. Available at http://www.ophi.org.uk/wp-content/uploads/MPI-post-2015-MDGs-FINAL.pdf

Baillie, J.E.M. (2008). Toward monitoring global biodiversity, *Conservation Letters* 1, 18–26.

Baker, J.L. (2008). *Urban Poverty: A Global View*. Urban Paper 5 (January 2008). Washington, DC: The World Bank Group. Available at http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2008/03/24/000333037_20080324021722/Rendered/PDF/430280NWP0Glob10Box327344B01PUBLIC1.pdf

Banerjee, A. (2013). *Evolving the MDGs*. High-level Panel Working Papers Series.

Banerjee, S.G. et al. (2013). *Global tracking framework*, Vol. 3. Sustainable energy for all. Washington D.C.; The World Bank. Available at http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2013/05/28/000112742_20130528084417/Rendered/PDF/778890GTF0full0report.pdf

Benn, J., Rogerson, A. and Steensen, S. (2010). *Getting Closer To The Core - Measuring Country Programmable Aid. Development Brief.* OECD Development Co-operation Directorate. Available online at : http://www.oecd.org/dac/aid-architecture/45564447.pdf

Berlinski, S., Galiani, S., and Gertler, P. (2009). The effect of pre-primary education on primary school performance. *Journal of Public Economics*, 93, 219-234.

Berlinski, S., Galiani, S., and Manacorda, M. (2008). Giving children a better start: Preschool attendance and school age profiles. *Journal of Public Economics*, 92, 1416-1440.

Biodiversity Indicators Partnership. (2010). *Coverage of protected areas: Guidance for national and regional use*. Cambridge, U.K. 2010 BIP Secretariat

Boitier, B. (2012). *CO_2 emissions production-based accounting vs. consumption: Insights from the WIOD databases.* Available at http://www.wiod.org/conferences/groningen/paper_Boitier.pdf

Broadband Commission. (2013a). *The State of Broadband 2013: Universalizing Broadband*. Geneva, Switzerland: Broadband Commission for Digital Development. Available at http://www.broadbandcommission.org/documents/bb-annualreport2013.pdf

---. (2013b). *Transformative Solutions for 2015 and Beyond.* Geneva, Switzerland: Broadband Commission for Digital Development. Available at http://www.broadbandcommission.org/documents/working-groups/bb-wg-taskforce-report.pdf

Bureau of the United Nations Statistical Commission. (March 2015). *Technical report on the process of the development of an indicator framework for the goals and targets of the post-2015 development agenda - Working draft*. A final report will be made available online at http://unstats.un.org/unsd/statcom/commission_46th_session.htm

Butchart, S.H.M. et al. (2012). Protecting Important Sites for Biodiversity Contributes to Meeting Global Conservation Targets. *PLoS ONE* 7(3). Available at http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0032529

---. (2007). Improvements to the Red List Index. *PLoS One* 2(1): 1-8. Available at http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0000140

---. (2005). Using Red List Indices to measure progress towards the 2010 target and beyond. *Philosophical*

Transactions of the Royal Society of London. 360 (1454): 359–372

Chiesura, A. (2004). The role of urban parks for the sustainable city. *Landscape and Urban Planning* 68:1, pp. 129-138.

Corcoran, E. C., Nellemann, E., Baker, R., Bos, D., Osborn, H., and Savelli (eds). (2010) *Sick Water? The central role of waste- water management in sustainable development. A Rapid Response Assessment.* United Nations Environment Programme, UN-HABITAT, GRID-Arendal. Available at www.grida.no

de Vries, M. et al. (2013). Assessing planetary and regional nitrogen boundaries related to security and adverse environmental impacts*. Current Opinion in Environmental Sustainability* 5:392–402.

Dora, C. et al. (2014). Indicators linking health and sustainability in the post-2015 development agenda. *The Lancet*. Available at http://dx.doi.org/10.1016/S0140-6736(14)60605-X

Eggleston, H.S., Buendia, L., Miwa, K., Ngara, T., and Tanabe, K. (eds). *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (5 volume collection). Available at http://www.ipcc-nggip.iges.or.jp/public/2006gl/index.html

Eurostat. (2012). *Guide to Statistics in European Commission Development Co-operation*. Version 2.0. Luxembourg: Publications Office of the European Union. Available at http://epp.eurostat.ec.europa.eu/cache/ITY_OFFPUB/KS-RA-11-028/EN/KS-RA-11-028-EN.PDF

Financial Action Taskforce, (2014), *FATF guidance Transparency and Beneficial Ownership*. OECD Publications. Available at http://www.fatf-gafi.org/media/fatf/documents/reports/Guidance-transparency-beneficial-ownership.pdf

Food and Agriculture Organization (FAO), International Fund for Agricultural Development (IFAD), and World Food Programme (WFP). (2014). *Food security, nutrition and sustainable agriculture in the post-2015 agenda: priority targets and indicators identified by FAO, IFAD and WFP*. Working group paper. Rome.

Food and Agriculture Organization (FAO). (2014). *Food Waste Footprint*. Available at http://www.fao.org/nr/sustainability/food-loss-and-waste/en

---. (2011). *Guidelines for measuring household and individual dietary diversity.* Available at http://www.fao.org/fileadmin/user_upload/wa_workshop/docs/FAO-guidelines-dietary-diversity2011.pdf

---. (2010). *Global Forest Resources Assessment 2010*. Rome, Italy: FAO. Available at http://www.fao.org/docrep/013/i1757e/i1757e.pdf

Fuller, R. A. and Gaston, K.J. (2009). The scaling of green space coverage in European cities. *Biology Letters*. doi:10.1098/rsbl.2009.0010. Available at http://rsbl.royalsocietypublishing.org/content/early/2009/02/22/rsbl.2009.0010.full.pdf+html

Gandure, S. and Kumwenda, H. (2013). *Draft Report on Sustainable Development Goals for the Southern Africa Subregion*. Discussion paper for the Africa Regional Consultative Meeting on the Sustainable Development Goals, Addis Ababa, Ethiopia. Available at http://www.uneca.org/sites/default/files/uploaded-documents/SDG/2013/sdg2013_draft-sdgs-report-southern-africa_en.pdf

Global Network of Women Peacebuilders. (2012). *Women Count - Security Council Resolution 1325: Civil Society Monitoring Report.* Available at http://www.gnwp.org/wp-content/uploads/2010/02/Global_Monitoring_Report.pdf

Government of Bangladesh Planning Commission. (2013). *The Millennium Development Goals: Bangladesh Progress Report 2012.* Available at http://www.academia.edu/9454757/MDG

Government of Mongolia. (2009). *The Millennium Development Goals Implementation: Third National Report*. Available at http://www.mn.undp.org/content/mongolia/en/home/library/National-MDG-reports.html

Habitat for Humanity. (2012). *The Post-2015 Development Agenda: Elevating Housing in the Next Millennium Development Goals*. Washington, DC: Habitat for Humanity. Available at http://www.habitatireland.ie/wp-content/uploads/2011/12/MDGs-HFHI-position-paper-Final.pdf

Halpern, B. et al. (2012). An index to assess the health and benefits of the global ocean. *Nature,* 488, 615–620. Available at http://www.nature.com/nature/journal/v488/n7413/full/nature11397.html

High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. (2013). *A New Global Partnership:*

Eradicate Poverty And Transform Economies Through Sustainable Development. United Nations Publishing. Available at http://www.post2015hlp.org/the-report/

ILO. (2013a). *Jobs and livelihoods in the post-2015 development agenda: Meaningful ways to set targets and monitor progress.* ILO Concept Note No. 2 for the post-2015 development agenda. Available at http://www.ilo.org/global/topics/post-2015/documents/WCMS_213209/lang--en/index.htm

---. (2013b). *Guide to the Millennium Development Goals Employment Indicators, second edition.* Geneva, Switzerland: ILO. Available at http://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_elm/documents/publication/wcms_208796.pdf

--- (2012). *Jobs and livelihoods at the heart of the post-2015 development agenda*. ILO Concept Note No. 1 on the post-2015 development agenda. Available at http://www.ilo.org/global/topics/post-2015/documents/WCMS_193483/lang--en/index.htm

---. (2012b). *Decent Work Indicators. Concepts and definitions*. Geneva: ILO. Available at http://www.ilo.org/wcmsp5/groups/public/---dgreports/---integration/documents/publication/wcms_229374.pdf

ILO, UN DESA, ESCAP, IFAD, IOM, UNDP, UNFPA, UNIDO, and UNWOMEN. (2013). *TST Issue Brief on Employment And Decent Work*. Available at http://sustainabledevelopment.un.org/content/documents/18330406tstissuesemploywork.pdf

Independent Expert Advisory Group on a Data Revolution for Sustainable Development (IEAG). (2014). *A World That Counts: Mobilising The Data Revolution for Sustainable Development*. Available at http://www.undatarevolution.org/report/

International Dialogue on Peacebuilding and Statebuilding. (2013). *Peacebuilding and statebuilding indicators – progress, interim list and next steps.* Discussion paper for Third International Dialogue global meeting. Washington, D.C. Available at http://www.pbsbdialogue.org/documentupload/03%20PSG%20Indicators%20EN.pdf

International Human Rights Internship Program and Forum-Asia. *Module on The Right to Adequate Housing*. University of Minnesota. http://www1.umn.edu/humanrts/edumat/IHRIP/circle/modules/module13.htm

International Monetary Fund. (2014). *Update on the Fiscal Transparency Initiative*. IMF Policy Paper. Washington, DC. Available online at http://www.imf.org/external/pp/longres.aspx?id=4888

IUCN. (2009). A Users' Guide to the IUCN Red List Website. Available at http://www.iucnredlist.org/news/iucn-red-list-site-made-easy-guide

---. (2005). *Sampled Red List Index: measuring progress towards the 2010 biodiversity targets*. Available at http://www.iucn.org/themes/ssc/images/miscellaneous/SRLIsmall.jpg

Janus, M. and Offord, D.R. (2007). Development and psychometric properties of the Early Development Instrument. *Canadian Journal of Behavioural Science*, 39, 1-22.

Joint UNECE/Eurostat/OECD Task Force on Measuring Sustainable Development. (2013). *Framework and suggested indicators to measure sustainable development.* Available at http://www.unece.org/fileadmin/DAM/stats/documents/ece/ces/2013/SD_framework_and_indicators_final.pdf

Mitchell, T. Jones, L., Lovell, E., and Comba, E. (eds). (2013). *Disaster Management in Post-2015 Development Goals: Potential Targets and Indicators.* London, UK: ODI. Available at http://www.odi.org.uk/sites/odi.org.uk/files/odi-assets/publications-opinion-files/8354.pdf

Moreno-Serra, R., Millett, C., and Smith, P.C. (2011). Towards Improved Measurement of Financial Protection in Health. *PLoS Med* 8(9): e1001087. Available at http://www.plosmedicine.org/article/info%3Adoi%2F10.1371%2Fjournal.pmed.1001087.

Myers, R. (1992). *The twelve who survive: Strengthening Programmes of Early Childhood Development in the Third World*. London, UK: Routledge.

Nykvist, B. et al. (2013). *National Environmental Performance on Planetary Boundaries*. A study for the Swedish Environmental Protection Agency. Stockholm, Sweden: The Swedish Environmental Protection Agency. Available at http://www.naturvardsverket.se/Documents/publikationer6400/978-91-620-6576-8.pdf

OECD. (2014). *Development Finance: Total Official Support For Development - An Emerging Concept In Support Of The Post-2015 Sustainable Development Goals*. Paris, France: OECD Publishing. Available at

http://www.oecd.org/dac/DCD-DAC(2014)48-En.pdf

---. (2013a). *Development Cooperation Report 2013: Ending Poverty*. Paris, France: OECD Publishing.

---. (2013b). *Effective Carbon Prices.* Paris, France: OECD Publishing. http://dx.doi.org/10.1787/9789264196964-en

---. (2008). *Greenhouse Gas Reduction Strategies in the Transport Sector: Preliminary Report*. Available at http://www.internationaltransportforum.org/pub/pdf/08ghg.pdf

Partnership on Measuring ICT for Development. (2014). Report for the forthcoming UN Statistical Commission meeting (Annex1). Available at http://unstats.un.org/unsd/statcom/doc14/2014-8-ICT-E.pdf

Peters, G. and Hertwich, E. (2008). Post-Kyoto greenhouse gas inventories: production versus consumption. *Climatic Change*. Volume 86, Issue 1-2, p 51-66. Available at http://link.springer.com/article/10.1007%2Fs10584-007-9280-1

Pintér, L., Almássy, D., and Hatakeyama, S. (2014). *Sustainable Development Goals and Indicators for a Small Planet, Part II: Measuring Sustainability*. Singapore: Asia-Europe Foundation. Available at http://www.asef.org/images/stories/publications/documents/ENVforum-Part_II-Measuring_Sustainability.pdf

Productivity Commission. (2011). *Carbon Emission Policies in Key Economies*. Research Report, Canberra. Available at http://www.pc.gov.au/__data/assets/pdf_file/0003/109830/carbon-prices.pdf

Revenue Watch Institute. (2013). *The 2013 Resource Governance Index: A Measure of Transparency and Accountability in the Oil, Gas and Mining Sector.* New York, NY: Revenue Watch. Available at http://www.revenuewatch.org/rgi/report

Rockström, J. et al. (2009). Planetary Boundaries: Exploring the Safe Operating Space for Humanity. *Ecology and Society* 14:2, 32.

Ricketts, T.H. et al. (2005). Pinpointing and preventing imminent extinctions. *Proceedings of the National Academy of Sciences*. 51, pp. 18497-18501.

Rodricks, S. (2010). *Singapore City Biodiversity Index*. Geneva: Switzerland: The Economics of Ecosystems and Biodiversity (TEEB). http://www.teebweb.org/wp-content/uploads/2013/01/Singapore-city-biodiversity-index.pdf

Satterthwaite, D. (2013). Setting the bar too low: is there really progress on UN development goals? *IIED Blog post*. http://www.iied.org/setting-bar-too-low-there-really-progress-un-development-goals

Sayeg, P., Starkey, P., and Huizenga, C. (2014). Updated *Draft Results Framework on Sustainable Transport*. SLoCAT (Partnership on Sustainable Low Carbon Transport). Available at http://www.slocat.net/results-framework-sustainable-transport

Save the Children. (2013). *Ending Poverty in Our Generation: Save the Children's vision for a post-2015 framework*. London, UK: Save the Children. Available at http://www.savethechildren.org.uk/sites/default/files/images/Ending_Poverty_in_Our_Generation_Africa.pdf

Serajuddin, U. et al. (2015). *Data Deprivation: Another Deprivation to End*. Policy Research Working Paper, World Bank. Available online at http://go.worldbank.org/8K6E1FIC60

Twerefou, D.K. (2013). *Report on Sustainable Development Goals for the West Africa Subregion*. Discussion paper for the Africa Regional Consultative Meeting on the Sustainable Development Goals, Addis Ababa, Ethiopia. Available at http://www.uneca.org/sites/default/files/uploaded-documents/SDG/2013/sdg2013_draft-sdgs-report-west-africa_en.pdf

United Nations. (2012). *The Future We Want, Our Common Vision*. Outcome document of the Rio+20 Conference. (A/CONF.216/L.1). Available at https://rio20.un.org/sites/rio20.un.org/files/a-conf.216l-1_english.pdf

---. (2003). *Indicators for Monitoring the Millennium Development Goals: Definitions, Rationale, Concepts, and Sources*. New York, NY: United Nations. Available at http://mdgs.un.org/unsd/mdg/Resources/Attach/Indicators/HandbookEnglish.pdf

UN DESA. (2007a). *Indicators of Sustainable Development: Guidelines and Methodologies. Third Edition.* New York: United Nations. Available at http://www.un.org/esa/sustdev/natlinfo/indicators/guidelines.pdf

---. (2007b). *Indicators of Sustainable Development: Guidelines and Methodologies –Methodology sheets.* New York: United Nations. Available at http://www.un.org/esa/sustdev/natlinfo/indicators/methodology_sheets.pdf

UN Department of Peacekeeping Operations (DPKO) and the Office of the UN High Commissioner for Human Rights (OHCHR). (2011). *Rule of Law Indicators: Implementation Guide and Project Tools.* New York, NY: United Nations. Available at http://www.un.org/en/peacekeeping/publications/un_rule_of_law_indicators.pdf

UNDP. (2013). *Human Development Report 2013: The Rise of the South: Human Progress in a Diverse World*. New York, NY: UNDP. Available at http://hdr.undp.org/en/content/human-development-report-2013

---. (2012). *Measuring Democracy and Democratic Governance in a post-2015 Development Framework*. New York, NY: UNDP. Available at http://www.undp.org/content/dam/undp/library/Democratic Governance/OGC/Post2015 governance metrics _14 Aug.pdf

UNESCO. (2014). *Free, Independent and Pluralistic Media In The Post-2015 Development Agenda: A Discussion Brief.* Available at http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/CI/CI/pdf/news/post_2015_agenda_brief.pdf

---. (2011). *Global Challenge of Wastewater: Examples from Different Countries*. Presentation at World Water Week in Stockholm, August 21-27, 2011. Available at http://www.worldwaterweek.org/documents/WWW_PDF/2011/Sunday/K21/The-Malin-Flakenmark-Seminar/Global-challenge-of-wastewater-Example-from-different-continents.pdf

---. (2010). *Media Development Indicators: A framework for assessing media development*. Available at http://unesdoc.unesco.org/images/0016/001631/163102e.pdf

UNESCO Institute for Statistics and the Center for Universal Education at the Brookings Institution (2013). *Toward Universal learning: Recommendations from the Learning Metrics Task Force*. Available at http://www.brookings.edu/research/reports/2013/09/learning-metrics-task-force-universal-learning#

UN-Habitat. (2009). *Urban Indicator Guidelines: Better Information, Better Cities, Monitoring the Habitat Agenda and the Millennium Development Goals – Slum Target*. Nairobi, Kenya: UN-Habitat. Available at http://www.unhabitat.org/downloads/docs/Urban_Indicators.pdf

---. (2006). *State of the World's Cities 2006/7*. Available at http://www.unhabitat.org/documents/media_centre/sowcr2006/sowcr 5.pdf

UNICEF, WHO, World Bank and UNPD. (2007). *Levels and Trends of Child Mortality in 2006: Estimates developed by the Inter-agency Group for Child Mortality Estimation.* New York, NY: UNICEF, 9. Available at http://www.childinfo.org/files/infant_child_mortality_2006.pdf

UNIDO, UNDP, UN-HABITAT and UNEP. (2013). *Sustained and Inclusive Economic Growth, Infrastructure Development, and Industrialization*. Available at http://sustainabledevelopment.un.org/content/documents/2078Draft%20Issue%20Brief_Sustained%20and%20Inclusive%20Economic%20Growth_Final_16Oct.pdf

UN International Strategy for Disaster Reduction (ISDR). (2007). *Hyogo Framework for Action 2005-2015*. Extract from the Final Report of the World Conference on Disaster Reduction. Geneva, Switzerland: ISDR.

UN Office on Drugs and Crime (UNODC). (2013). *Accounting for Security and Justice in the Post-2015 Development Agenda*. Geneva: UNODC. Available at http://www.unodc.org/documents/about-unodc/Post-2015-Development-Agenda/UNODC_-_Accounting_for_Security_and_Justice_in_the_Post-2015_Development_Agenda.pdf

UN Population Division. (2011a). *Seven Billion and Growing: The Role of Population Policy in Achieving Sustainability*. Technical Paper No. 2011/3. New York.

---. (2011b). *World Contraceptive Use 2011.* New York: UN. Available at http://www.un.org/esa/population/publications/contraceptive2011/contraceptive2011.htm

UN Secretary-General. (2014). *The Road to Dignity by 2030: Ending Poverty, Transforming All Lives and Protecting the Planet*, Synthesis Report of the Secretary-General On the Post-2015 Agenda. Available at http://www.un.org/disabilities/documents/reports/SG_Synthesis_Report_Road_to_Dignity_by_2030.pdf

---. (2013). *A life of dignity for all: accelerating progress towards the Millennium Development Goals and advancing the United Nations development agenda beyond 2015.* Available at http://www.un.org/millenniumgoals/pdf/A Life of Dignity for All.pdf

---. (2010). *Women and peace and security*. Security Council Report S/2010/173. New York, NY: United Nations. Available at http://www.peacewomen.org/assets/file/Indicators/sg_report_on_1889-op17.pdf

UN Statistical Commission. (2015). *Draft Report from the 46th session.* Available online at http://papersmart.unmeetings.org/media2/4656653/item-7-draft-report.pdf

UN Statistics Division. (2013). *Principles and Recommendations for a Vital Statistics System (Revision 3).* Available at http://unstats.un.org/unsd/demographic/standmeth/principles/default.htm

---. in collaboration with the Friends of the Chair group on broader measures of progress. (2014). *Compendium of statistical notes for the Open Working Group on Sustainable Development Goals*. Available at http://sustainabledevelopment.un.org/content/documents/3647Compendium%20of%20statistical%20notes.pdf

UN System Task Team on the Post-2015 UN Development Agenda. (2013). *Statistics and indicators for the post-2015 development agenda.* New York, NY: United Nations. Available at http://www.un.org/en/development/desa/policy/untaskteam_undf/UNTT_MonitoringReport_WEB.pdf

UN Women. (2013). *A Transformative Stand-Alone Goal On Achieving Gender Equality, Women's Rights And Women's Empowerment: Imperatives And Key Components.* New York, NY: United Nations. Available at http://www.unwomen.org/~/link.aspx?_id=981A49DCB34B44F1A84238A1E02B6440and_z=z

US Environmental Protection Agency. (2009). *Drinking Water Glossary: A Dictionary of Technical and Legal Terms Related to Drinking Water*. Washington DC: Office of Water/Office of Ground Water and Drinking Water. http://water.epa.gov/drink

World Health Organization. (2014a). *NCD Global Monitoring Framework*. Available at http://www.who.int/nmh/global_monitoring_framework/en

---. (2014b). Global Database on Child Health and Malnutrition; Child growth indicators and their interpretation. Available at http://www.who.int/nutgrowthdb/about/introduction/en/index2.html

---. (2014c). *Micronutrients*. Available at http://www.who.int/nutrition/topics/micronutrients/en/index.html

---. (2013a). *WHO recommendations for routine immunization - summary tables*. Available at http://www.who.int/immunization/policy/immunization_tables/en/index.html

---. (2013b). *Global Vaccine Action Plan, 2011 – 2020.* Available at http://www.who.int/immunization/documents/general/ISBN_978_92_4_150498_0/en/index.html

---. (2013c). *Global Action Plan for the Prevention and Control of Non-Communicable Diseases*. Available at http://apps.who.int/iris/bitstream/10665/94384/1/9789241506236_eng.pdf

---. (2013d). *Mental Health Action Plan 2013 – 2020*. Available at http://apps.who.int/iris/bitstream/10665/89966/1/9789241506021_eng.pdf

---. (2013e), *Global status report on road safety*. Available at http://www.who.int/violence_injury_prevention/road_safety_status/2013/report/en/

---. (2012). *Proposed targets for maternal, infant, and young children nutrition*. WHO Discussion paper. Available at http://www.who.int/nutrition/topics/nutrition_globaltargets2025/en/index.html

---. (2010). *Global Recommendations on Physical Activity for Health*. Available at http://whqlibdoc.who.int/publications/2010/9789241599979_eng.pdf?ua=1

---. (2009*). Monitoring emergency obstetric care: a handbook*. Geneva, Switzerland: WHO Press, 10. Available at http://whqlibdoc.who.int/publications/2009/9789241547734_eng.pdf

---. (2008). *Toolkit on monitoring health systems strengthening service delivery*. Geneva, Switzerland: WHO. Available at http://www.who.int/healthinfo/statistics/toolkit_hss/EN_PDF_Toolkit_HSS_ServiceDelivery.pdf

---. (2005). *The World health report 2005: make every mother and child count.* Geneva: WHO. Available at http://www.who.int/whr/2005/whr2005_en.pdf?ua=1

World Health Organization, World Bank. (2014). *Monitoring progress towards universal health coverage at country and global levels: Framework, measures and targets.* Geneva, Switzerland: WHO Press. Available at http://apps.who.int/iris/bitstream/10665/112824/1/WHO_HIS_HIA_14.1_eng.pdf

---. (2013). *Monitoring progress towards universal health coverage at country and global levels: A Framework*. Joint WHO / World Bank Group Discussion Paper. Geneva, Switzerland: WHO Press. Available at http://www.who.int/healthinfo/country_monitoring_evaluation/UHC_WBG_DiscussionPaper_Dec2013.pdf

World Food Programme (WFP). (2008). *Technical Guidance Sheet - Food Consumption Analysis: Calculation and Use of the Food Consumption Score in Food Security Analysis.* Available at http://www.wfp.org/content/technical-guidance-sheet-food-consumption-analysis-calculation-and-use-food-consumption-score-food-s.

Water Supply & Sanitation Collaborative Council (WSSCC). (2014). *WASH POST-2015: proposed targets and indicators for drinking-water, sanitation and hygiene.* Available at http://www.wssinfo.org/fileadmin/user_upload/resources/post-2015-WASH-targets-factsheet-12pp.pdf

WHO-UNICEF Joint Monitoring Programme. (2013). "Post-2015 WASH Targets and Indicators." Available at http://www.wssinfo.org/post-2015-monitoring

WWF. (2012). *Living Planet Report*. Gland, Switzerland: WWF International. Available at http://awsassets.panda.org/downloads/1_lpr_2012_online_full_size_single_pages_final_120516.pdf

Yale Center for Environmental Law and Policy, and Columbia Center for International Earth Science Information Network. (2012). *2012 EPI - Environmental Performance Index and Pilot Trend Environmental Performance Index*. Available at http://epi.yale.edu/sites/default/files/downloads/2012-epi-full-report_0.pdf

VanIttersum, M.K. et al. (2013). Yield gap analysis with local to global relevance-A review. *Field Crops Res*. 143, 4-17

Yoshikawa, H. et al. (2013). *Investing in the future: The evidence base for early childhood education*. Washington, DC: Society for Research in Child Development.

Yossa, T. (2013). *Report on Sustainable Development Goals for the Central Africa Subregion*. Discussion paper for the Africa Regional Consultative Meeting on the Sustainable Development Goals, Addis Ababa, Ethiopia. Available at http://www.uneca.org/sites/default/files/uploaded-documents/SDG/2013/sdg2013_draft_sdgs_report_central_africa_en.pdf

Documents and Reports Prepared by the SDSN (All are available at http://unsdsn.org/resources)

Agyepong, I. Liu, G, and Reddy, S. et al. (2014). *Health In the Framework of Sustainable Development.* Paris, France and New York, USA: SDSN.

Alkire, S. (2014), *Towards frequent and accurate poverty data.* SDSN Briefing Paper. Paris, France and New York, USA: SDSN.

Alkire, S. and Samman, E. (2014). *Mobilizing the household data required to progress toward the SDGs*. SDSN Briefing Paper. Paris, France and New York, USA: SDSN.

Bakker, P. and Leisinger, K. et al. (2013). *The key challenges to 2030/2050: Mapping out long-term pathways to sustainability and highlighting solutions that should be scaled up.* Background Paper for the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. Paris, France and New York, USA: SDSN.

Begashaw, B. et al. (2015 forthcoming). *Reducing Poverty and Building Peace in Fragile Regions*. Draft report of the Thematic Group.

Bradshaw, S., Castellino, J., and Diop, B. et al. (2013). *Achieving Gender Equality, Social Inclusion, and Human Rights for All: Challenges and Priorities for the Sustainable Development*. Paris, France and New York, USA: SDSN.

Cassidy, M. (2014). *Assessing Gaps in Indicator Coverage and Availability*. SDSN Briefing Paper, Paris, France and New York, USA: SDSN

Chavan, M. and Yoshikawa, H. et al. (2014). *The Future of Our Children: Lifelong, Multi-generational Learning for Sustainable Development*. Draft Technical Report from the Thematic Group on Early Childhood Development, Education, and Transition to Work. Paris, France and New York, USA: SDSN.

Collier, P and Antonio, P. et al. (2013). *Harnessing Natural Resources for Sustainable Development: Challenges and Solutions*. Paris, France and New York, USA: SDSN.

Dobermann, A. and Nelson, R. et al. (2013). *Solutions for Sustainable Agriculture and Food Systems.* Technical report of the Thematic Group on Sustainable Agriculture and Food Systems. Paris, France and New York, USA: SDSN.

Espey, J., et al. (2015). *A Needs Assessment for SDG Monitoring and Statistical Capacity Development*. Paris, France and New York, USA: SDSN.

Helliwell, J., Layard, R., and Sachs, J. (2013). *World Happiness Report 2013*. New York, USA: SDSN.

Naeem, S., Viana, V., and Visbeck, M. (2014). *Forests, Oceans, Biodiversity and Ecosystem Services*. Draft report of the Thematic Group FOBES, SDSN. To be published by Sustainable Development Solutions Network.

Revi, A. and Rosenzweig, C. et al. (2013a*). The Urban Opportunity to enable Transformative and Sustainable Development*. Background Paper for the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. Paris, France and New York, USA: SDSN.

---. (2013b). *Why the World Needs an Urban Sustainable Development Goal.* Paris, France and New York, USA: SDSN.

Rockström, J., Sachs, J., Öhman, M., and Schmidt-Traub, G. (2013). *Sustainable Development and Planetary Boundaries*. Background Paper for the High-Level Panel of Eminent Persons on the Post-2015 Development Agenda. Paris, France and New York, USA: SDSN.

Sachs, J. and Schmidt-Traub, G. (2013). *Financing for development and climate change post-2015*, SDSN Briefing Paper, Paris, France and New York, USA: SDSN

Sustainable Development Solutions Network. (2013). *An Action Agenda for Sustainable Development.* Report for the UN Secretary-General. Paris, France and New York, USA: SDSN.

Thematic Consultations Organized by the United Nations

Conflict, Violence, and Disaster. (2012, November 7). Concept Note on the Impact of Conflict, Violence and Disaster on Long-Term Development. UNDP, PBSO, UNISDR and UNICEF, with support from the Government of Finland. Available at http://www.worldwewant2015.org/conflict

Education. (2013, May 17). Executive Summary (Draft): Envisioning education in the post-2015 development agenda. Co-led by UNDP and OHCHR with support from the Government of Canada. Available at http://www.worldwewant2015.org/education2015

Energy. (2013, April 16). Global Thematic Consultation on Energy and the Post-2015 Development Agenda: Key Messages. UN-Energy. Available at http://www.worldwewant2015.org/Energy2015

Environmental Sustainability. (2013, March). Co-Chairs Summary of the Leadership Meeting. Co-led by UNEP and UNDP with support from the Government of France. Available at http://www.worldwewant2015.org/sustainability

---. (2013, March). Summary Report of Submitted Discussion Notes. Co-led by UNEP and UNDP with support from the Government of France. Available at http://www.worldwewant2015.org/sustainability

Food Security and Nutrition. (2013, April 4). Food Security and Nutrition for All: A Vision and Building Blocks for a Global Agenda. Co-led by FAO and WFP with support from the Government of Spain. 2013. Available at http://www.worldwewant2015.org/food2015

Governance. (2013, March 4). Key Outcomes and Recommendations from Pre-Meetings to the Post-2015 Global Thematic Consultation on Governance. Co-led by UNDP and OHCHR with support from the Government of Germany. Available at http://www.worldwewant2015.org/governance

---. (2013, March 16). Meeting Report: Governance and human rights: Criteria and measurement proposals for a post-2015 development agenda. Co-led by UNDP and OHCHR with support from the Government of Germany. Available at http://www.worldwewant2015.org/governance

---. (2013, May 14). Review of Outcomes - Final meeting of the Global Thematic Consultation on Governance and the Post-2015 Framework. Co-led by UNDP and OHCHR with support from the Government of Germany. Available at http://www.worldwewant2015.org/governance

Growth and Employment. (2012, May 16). Growth, Structural Change and Employment: Report of the first thematic consultation on the post-2015 framework for development. Co-led by UNDP and ILO with support from the Government of Japan. Available at http://www.worldwewant2015.org/employment

Health. (2013, April). Health in the Post-2015 Agenda. Task Team for the Global Thematic Consultation on Health in the Post-2015 Development Agenda. Co-led by WHO and UNICEF with support from the Government of Sweden and Government of Botswana. Available at http://www.worldwewant2015.org/health

Inequality. (2013, March 13). Addressing Inequalities: Synthesis Report of Global Public Consultation. Co-led by UNICEF and UN Women with support from the Governments of Denmark and Ghana. Available at http://www.worldwewant2015.org/inequalities

Population. (2013, March 14). A Call to Integrate Population Dynamics into the Post-2015 Development Agenda: draft outcome document. Co-led by UN-DESA, UNFPA, UN-HABITAT and IOM with the support of the Governments of Bangladesh and Switzerland. Available at http://www.worldwewant2015.org/population

Water. (2013, April 23). Water Thematic Consultation Report, Draft Version for Comments. Co-led by UN-Water, UN DESA, UN-Habitat and UNICEF with support from the Governments of the Netherlands and Switzerland. Available at http://www.worldwewant2015.org/water

United Nations Development Group (2013a). *The Global Conversation Begins: Emerging Views for a New Development Agenda*. Available at http://www.worldwewant2015.org/the-global-conversation-begins

---. (2013b). Growth and Employment in the Post-2015 Agenda Messages from a global consultation. Available at www.worldwewant2015.org/employment

The **Sustainable Development Solutions Network** (SDSN) mobilizes scientific and technical expertise from academia, civil society, and the private sector in support of sustainable development problem solving at local, national, and global scales. SDSN aims to accelerate joint learning and help to overcome the compartmentalization of technical and policy work by promoting integrated approaches to the interconnected economic, social, and environmental challenges confronting the world.

Learn more at unsdsn.org