



**JOIN US  
IN THE RACE  
TO A BETTER  
WORLD**

# Race to Resilience Metrics Framework

November 2021

# This document is designed to provide a working understanding of the Race to Resilience campaign metrics



## Document roadmap



# Contents

## 1. Context

2. Objectives

3. Metrics

4. How to report

5. Further guidance

6. Annexes

# The Race to Resilience mission is to increase action and investment in climate resilience and adaptation



## Climate change

Addressing the *causes* of climate change

Mitigation

Race to Zero campaign and initiatives

Coping with the *consequences* of climate change

Adaptation

Race to Resilience campaign and initiatives

**RACE TO ZERO**



Race to Resilience (R2R) is a sibling to Race to Zero, launched by the High-Level Climate Champions.

**Race to Resilience is a global campaign** to deliver a step-change in global ambition for climate resilience, **putting people and nature first**

In pursuit of a resilient world where we don't just survive climate shocks and stresses but **thrive** in spite of them

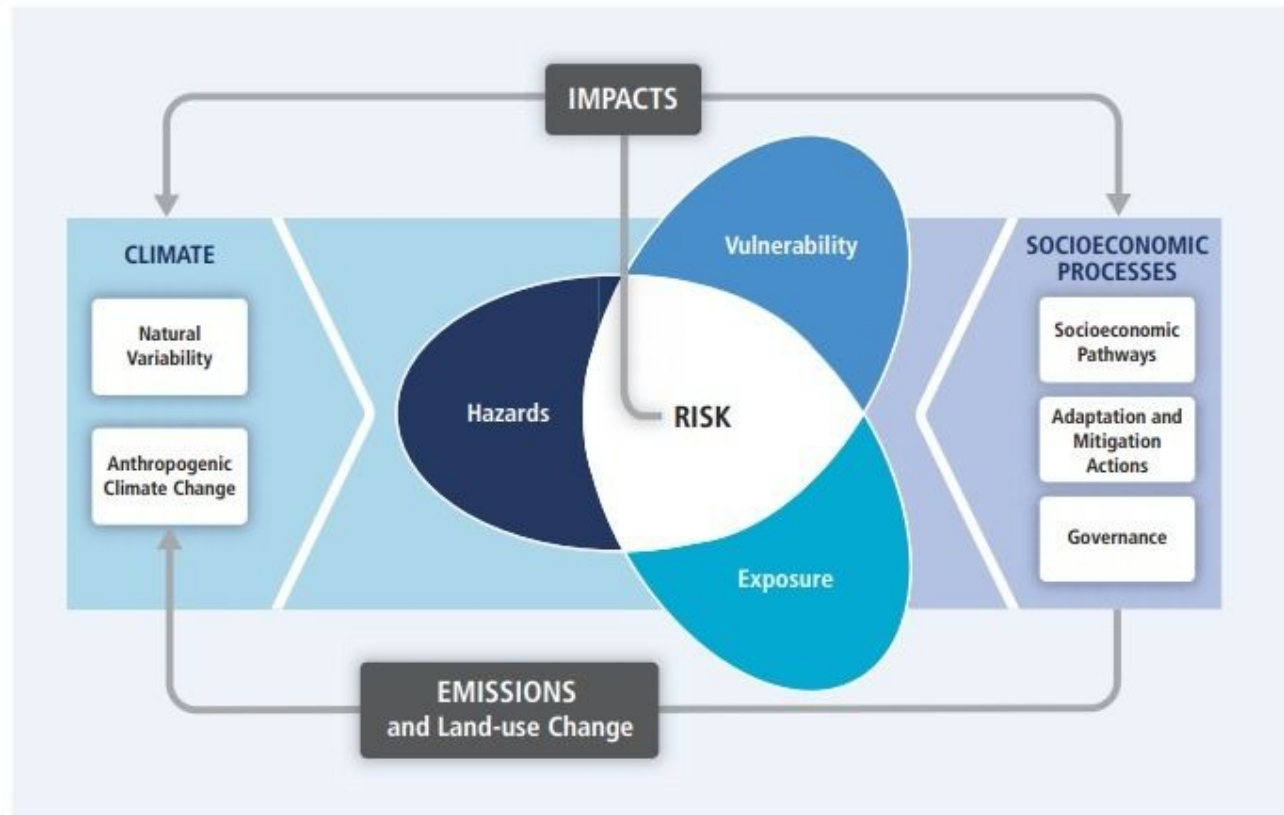
**Together, we can do this**

**Together, we will thrive**

# Climate risk: impacts result from the interaction of hazards with exposure and vulnerability of human and natural systems



## IPCC Conceptual framework of risk



Changes in both the climate system (left) and socioeconomic processes, including adaptation and mitigation (right) are drivers of hazards, exposure and vulnerability.

Resilience results in increased adaptation and reduces overall risk.

**Figure SPM.1** | Illustration of the core concepts of the WGII AR5. Risk of climate-related impacts results from the interaction of climate-related hazards (including hazardous events and trends) with the vulnerability and exposure of human and natural systems. Changes in both the climate system (left) and socioeconomic processes including adaptation and mitigation (right) are drivers of hazards, exposure, and vulnerability. [19.2, Figure 19-1]

Sources: IPCC (2019), IPCC (2014) Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change



# Climate risk: definitions of hazard, exposure and vulnerability



**Risk**



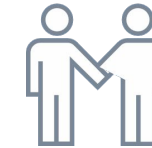
**Hazard**

A climate-induced event or trend that may cause damage to human life, property, infrastructure, livelihoods, service provision, ecosystems and environmental resources



**Exposure**

The presence of people, assets or ecosystems in an area where hazards may occur



**Vulnerability**

The propensity of a population, asset or ecosystem to be adversely affected as a result of sensitivity and / or capacity to cope and adapt



**Definitions are tailored to the campaign** and are not imposed on member initiatives; they accommodate a broad spectrum of working definitions within the metric framework

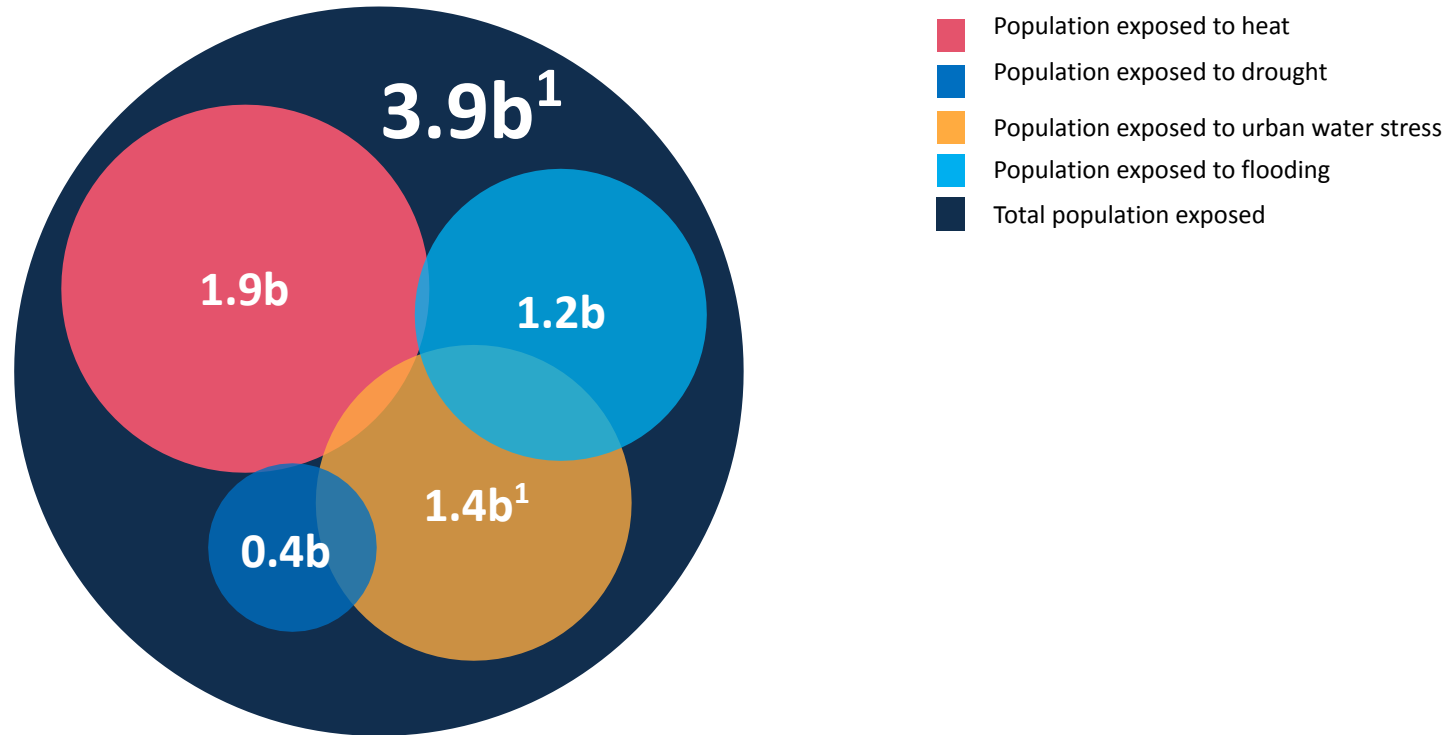


# Risk analytics: climate change hazards and exposure are assessed separately, outside of the Metrics Framework



PRELIMINARY

## Global population likely to be exposed to climate hazards by 2030, Billions



# 1 in 2

People globally could be exposed to a climate hazard by 2030

1.5°C warming scenario by 2030, based on 2030 population<sup>1</sup>

1. Global mean temperature increase is relative to 1986-2005 reference period based on average across 21 CMIP5 models under the RCP 8.5 emissions scenario (IPCC, 2013)

Source: Woodwell Climate Research Center (heat stress), NASA NEX (drought), World Resources Institute (flooding and water stress), International Labour Organization (present employment data), IHS Markit (present GDP and future projections), SEDAC (GPW v4, male to female population ratios), NCAR IAM (current population and future projections), McKinsey Climate Analytics

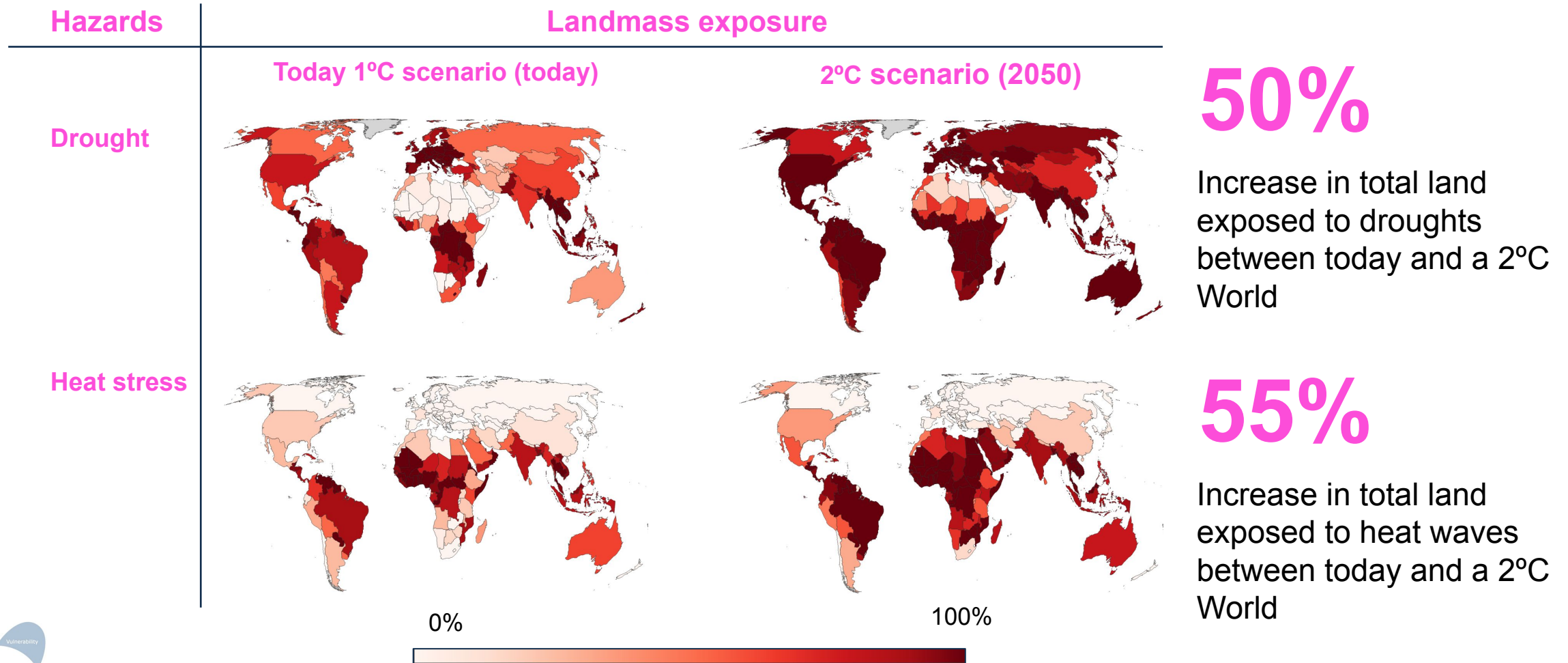


# Risk analytics: hazards will proliferate across the world



PRELIMINARY

Proportion of country landmass exposed to climate hazard, %



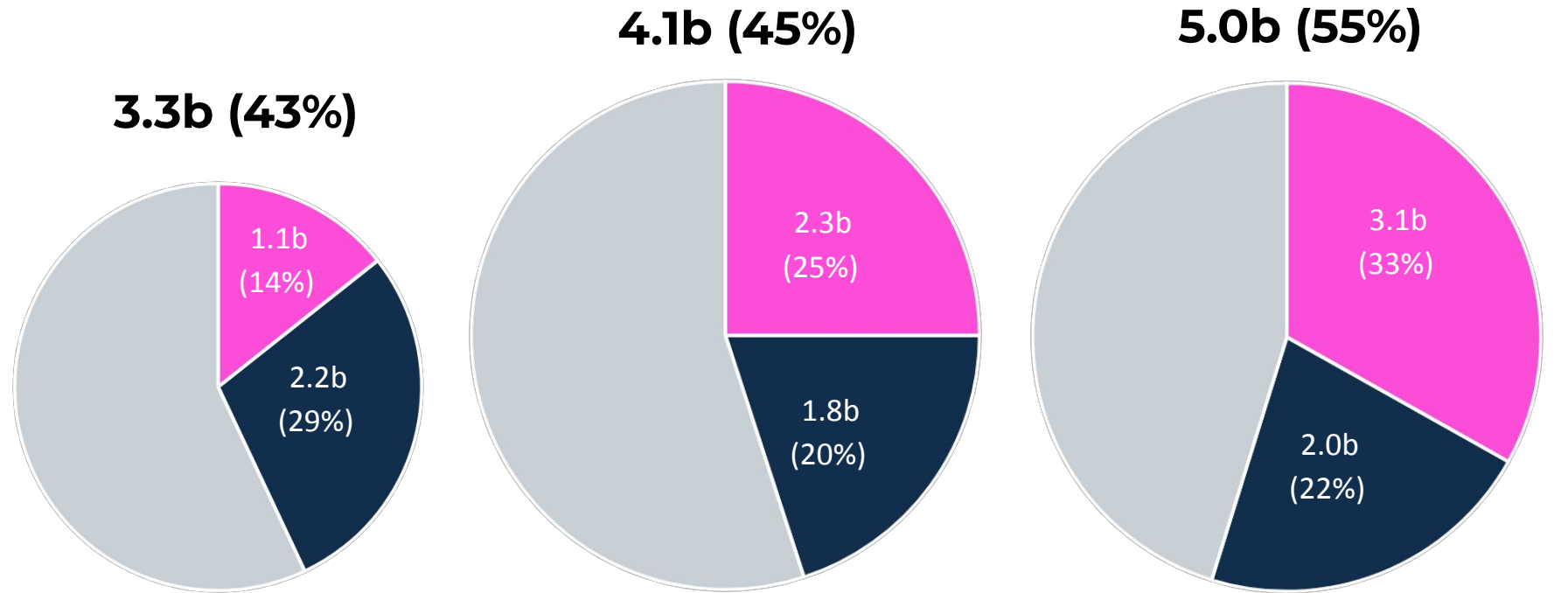


# Risk analytics: climate hazards are likely to have extensive impacts in every warming scenario



PRELIMINARY

Total population likely to be exposed to climate hazards globally, billions



In an optimistic scenario, population exposed to severe hazards could double by 2050; in a likely scenario, it would triple

**800k**

People protected from exposure to severe hazards if warming is reduced from 2°C to 1.5°C



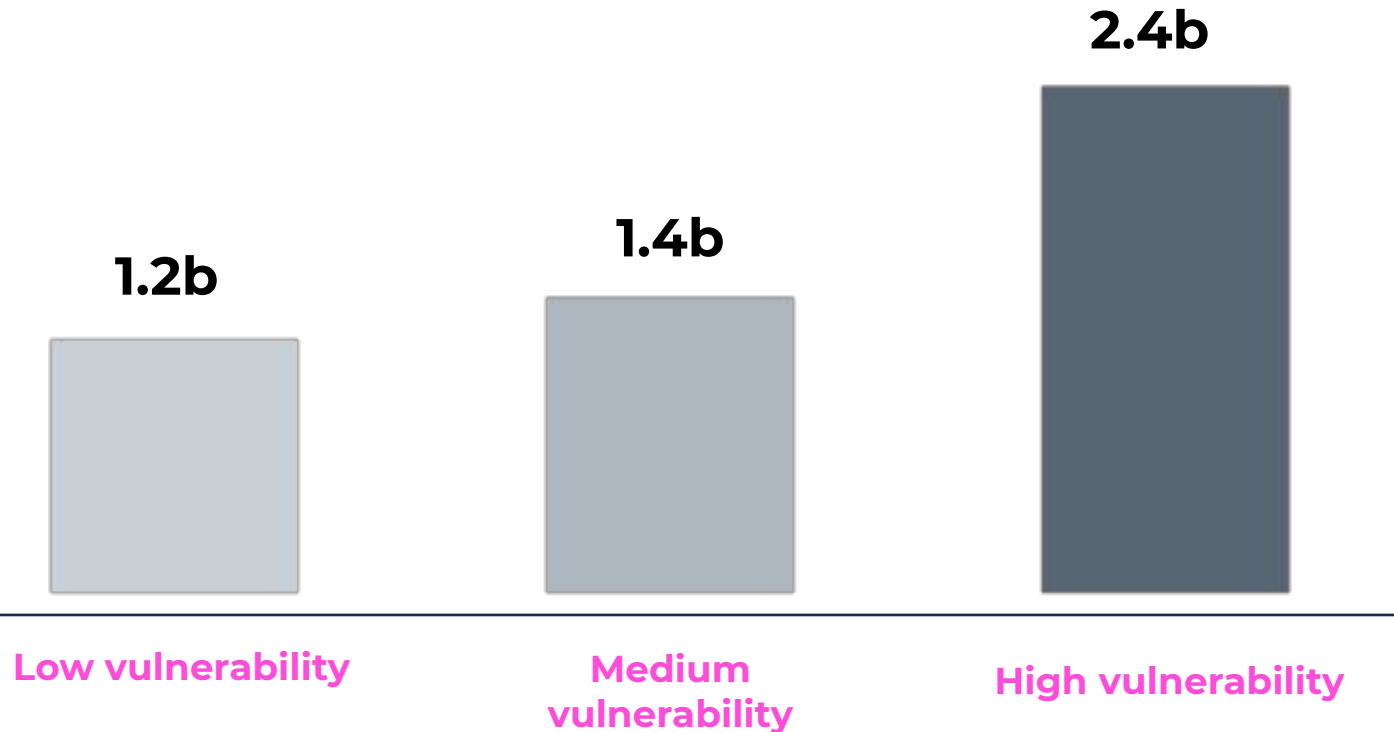
■ High severity hazard   
 ■ Low severity hazard   
 ■ Not exposed

# Risk analytics: populations exposed to climate hazards are most likely to be highly vulnerable to their effects



PRELIMINARY

Population exposed to climate hazards by vulnerability grouping in a 2°C world in 2050, billions



In a 2°C warming scenario by 2050, **twice** as many people exposed to climate hazards could be highly vulnerable to the effects of these hazards (i.e. less likely to be resilient), compared to those with lower vulnerability



1. Calculated by multiplying regional Human Development Indices (sHDI) by The Notre Dame Global Adaptation Initiative (ND-GAIN) 2. Global mean temperature increase is relative to 1986-2005 reference period based on average across 21 CMIP5 models under the RCP 8.5 emissions scenario (IPCC, 2013)

Source: Woodwell Climate Research Center (heat stress), NASA NEX (drought), World Resources Institute (flooding and water stress), International Labour Organization (present employment data), IHS Markit (present GDP and future projections), SEDAC (GPW v4, male to female population ratios), NCAR IAM (current population and future projections), Notre Dame (ND-GAIN), Global Data Lab (sHDI), McKinsey Climate Analytics

# Resilience reduces overall risk from vulnerability and results in increased adaptation to climate change



## Vulnerability

A climate-induced event or trend that may cause **damage** to vulnerable human life, property, infrastructure, livelihoods, service provision, ecosystems and environmental resources



## Resilience

The **capacity** of social, economic and environmental systems to **cope** with a hazardous event or trend or disturbance, **responding or reorganizing** in ways that maintain their essential function, identity and structure while also **maintaining the capacity for adaptation, learning and transformation**. (IPCC, 2018: Global Warming of 1.5°C).



## Adaptation

The process of **adjustment to actual or expected climate** and its effects to moderate or avoid harm or exploit beneficial opportunities



**Definitions draw from a range of sources** including IPCC, World Bank, OECD and USAID

Sources: IPCC (2019), IPCC (2014) Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change



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# The campaign aims to increase the resilience of 4 billion vulnerable people by 2030



## Campaign goal

4 billion vulnerable people made more resilient by 2030



## Pledges

Pledges computed for individuals, companies, cities, countries/regions or natural systems

Urban

Rural

Coastal



## Inputs

Companies, investors, NGOs, cities, community groups, knowledge organizations, mobilized as members of R2R partner initiatives develop more ambitious targets catalysed by R2R supporter organisations



## Outcomes

*Same categories as pledge metrics*



## Activities

Initiatives invited across geographies and sectors

Metrics developed to report progress

New resilience narrative on thriving developed

Breakthroughs defined for systemic change

Knowledge science and best practice on resilience used

# Pledges are reported across the Resilience Dashboard up to 2030; while validated outcomes are reported annually



ILLUSTRATIVE 2030 DASHBOARD

## Exposure

3.9b

Exposure: people exposed to climate change hazards

## Pledges

2.2b

Pledge: people with increased resilience

## Outcomes

1.4b

Outcome: people with **validated** increased resilience

Pledges and outcomes here are illustrative.

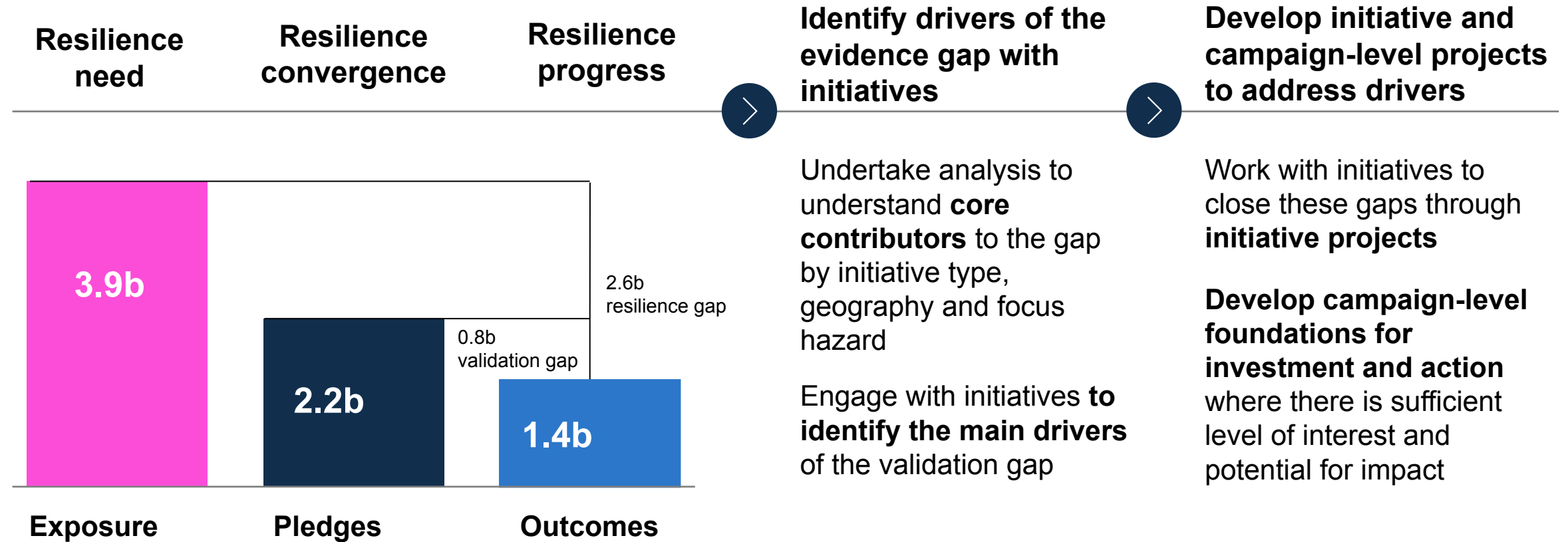
Pledges will be reported this year (2021) and updated where necessary up to 2030. Validated outcomes will be reported annually every year from 2022 up to 2030.

The pledges and outcomes will be referenced back to the exposure data.

# The campaign uses the gaps between exposure, pledges and validated outcomes to assess the resilience gap



ILLUSTRATIVE 2030 DASHBOARD



# Rationale for using the exposure data from risk analytics

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There are three primary reasons to use the exposure from the risk analytics in the metrics framework.

1

Exposure uses the same metrics as the outcomes/pledges i.e. human counts and hectares.

2

It is a reality check on the pledges and outcomes e.g. if initiatives pledge to increase resilience of 500 million people to urban water stress, and the exposure is 1.4 billion, then it will be clear that there is a gap that the campaign should investigate.

3

To get meaningful insight from the statistics, we need to normalise the data i.e. we need a unitless measure to compare values.

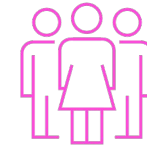
For example it is better to be in a position to say “based on validated outcomes and pledges, the resilience progress is 20% in Chile and 1% in the United States” instead of “based on validated outcomes, 1 million individuals were made more resilient in Chile and the United States.”



# The metrics provide five ways to track resilience-building pledges and outcomes, all focused towards human resilience

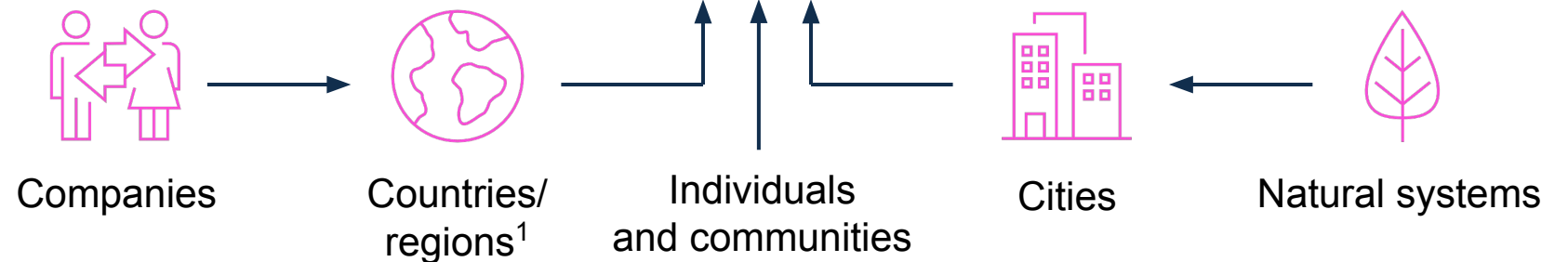


Human-centric flagship outcome target



**A1 Resilient individuals**

Achieved through engagement at different levels and systems



Further captured by additional outcome metrics

**A2 Resilient companies**

**A3 Resilient countries**

**A4 Resilient cities**

**A5 Resilient natural systems**

1. Populations not aggregated into A1 at country/region-level activities

# Examples of project reporting

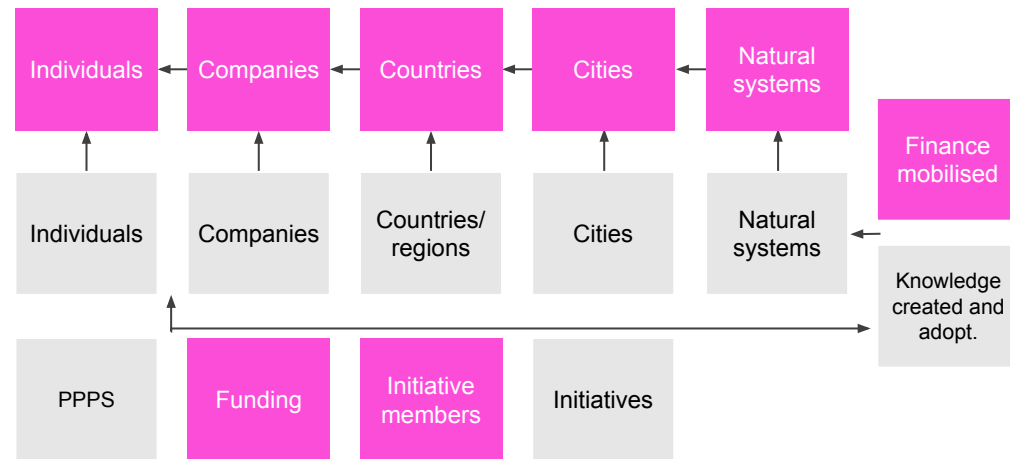
	Inputs	Outcomes	Pledges
<b>Individuals</b>	<b>8 projects</b> providing low-cost, disaster-resistant improvements to housing in disaster prone areas	<b>25,000 individuals</b> with improved, disaster-resistant housing units	<b>25,000 individuals</b> with increased resilience
<b>Companies</b>	<b>5 projects</b> providing securitized bonds to private industrial operators in coastal areas	<b>35 private businesses</b> accessing finance to invest in sustainable coastal infrastructure and nature-based solutions	<b>35 private businesses</b> with increased resilience <b>275 hectares</b> of coastal area with increased resilience
<b>Countries</b>	<b>3 projects</b> climate-proofing a country's national grid	<b>1 country</b> with climate-proofed national grid	<b>1 country</b> with increased resilience <b>3M people</b> with increased resilience
<b>Cities</b>	<b>6 projects</b> conducting risk monitoring & water management across regional river basins	<b>3 cities</b> with reduced demand for water and reduced risk of wildfires	<b>3 cities</b> with increased resilience <b>2M people</b> with increased resilience
<b>Natural systems</b>	<b>12 projects</b> creating a conservation area in vulnerable forestland	<b>32,000 hectares</b> of forest land protected	<b>32,000 hectares</b> of forest land with increased resilience

# The campaign will publicly report selected metrics through a high-level dashboard



■ Dashboard metric

## Dashboard elements of the framework



## Proposed dashboard metrics with illustrative figures

ILLUSTRATIVE 2030 FIGURES

- 4B**     **A1. People<sup>1</sup>** with increased resilience
- 10m**    **A2. Companies** with increased resilience
- 150**     **A3. Countries** with increased resilience
- 5k**      **A4. Cities** with increased resilience
- 200k**   **A5. Hectares of natural system** with increased resilience

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- \$50B**   **B6. Finance<sup>2</sup> mobilised** by initiatives and breakthroughs
- \$20B**   **C2. Finance deployed** into climate resilience initiatives

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- 5k**      **C3. Organisations** signed up across R2R initiatives

1. Segmented further by gender and other characteristics  
 2. Segmented further by public and private finance

# The campaign metrics offer a way to track resilience-building action by member initiatives



## Enable ambitious campaign goals to mobilise action

Metrics that allow for practitioners, researchers, businesses and investors to report their outcomes



## Record and track initiative pledges and outcomes

Reporting that feeds into a dashboard showing total pledges commitment and outcomes to-date



## Identify gaps to be filled by new and existing initiatives

Segmented by hazard type, geography (country/region), and other characteristics to identify key resilience gaps



## Ensure reliable and credible data to safeguard impact

Sufficiently broad to enable wide adoption whilst ensuring a minimum threshold of data quality



Ability for **impact beyond the campaign** by laying the foundation for a **widely adopted measurement framework** that supports engagement by businesses, investors and other key actors

# The Metrics Framework addresses critical challenges to measuring resilience...



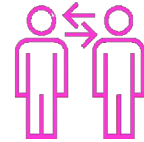
## Key challenges in measuring climate resilience

**No consensus on definitions of resilience** or other key concepts such as adaptation with numerous versions being used by different actors

**Resilience is a complex, multifaceted concept** covering a range of hazard types, socioeconomic circumstances and units of engagement

**No universally agreed measurement approach** for resilience or attributing resilience to project or programme activities or policy support

**Significant barriers for non-specialist actors (esp. the private sector)** in effectively measuring resilience and adaptation



## Framework design requirements

**High-level metrics** that accommodate multiple definitions and the full range of initiative activities

**Ability to capture outcome granularity**, e.g. on hazards and geographies, where initiatives have this data

**Inclusive outcome measurement process** that allows all initiatives to engage with the major outcome target

**Data quality approach that allows non-specialist or low-capability actors to participate** whilst ensuring data quality and credibility of impact

# ...but does not aim to cover all fundamental gaps in the climate resilience measurement landscape



Key functions the metrics will not provide

**The R2R metrics do not...**

Provide an **exhaustive list of climate resilience metrics underneath each high-level outcome**

Aggregate **depth of resilience** across initiatives

Act as a **policing mechanism or central authority** on resilience reporting

# The framework has been developed through interviews with 25+ experts and initiatives...



## Framed the metrics use case

Literature review including case-studies of 11 frameworks and a metric landscape mapping

Scoping of R2R campaign metric requirements

Identification of best practices and key challenges in the measurement of climate resilience

Developed list of guiding design principles



## Developed metrics

Interviewed 25+ experts and initiative members including investors, business alliances, practitioners and academics

Produced and tested design choice hypotheses through follow-up meetings

Finalised design choices and developed metrics



## Testing with initiatives

Road-tested metrics with 11 initiative members representing a broad range of initiative types

Surveyed first batch of 21 initiatives

Iterated metrics framework based on feedback



## Further Iteration

Convened ~12 member Methodological Advisory Group (MAG) to iterate and validate metrics

Working group led by IIED and the University of Maryland, including some initiative representatives to advise on deployment of the framework



Completed

In progress

# ...and draws on a large pool of existing thought and practice

The range of approaches used to capture existing resilience measurement methods, practice and learnings

## Landscape mapping

Landscape mapping of ~60 organisations to understand the typology of actors, their reporting capabilities and practices including



ASIAN DEVELOPMENT BANK



## Measurement framework case-studies

Review of 10+ initiative and initiative member reporting systems including:

- InsuResilience Global Partnership
- Zurich Flood Resilience Alliance
- Global Resilience Partnership
- Global Covenant of Mayors

Review of 15+ widely adopted programme and country-level measurement frameworks including:

- Tracking Adaptation and measuring Development (TAMD)
- UNDP's Community-based Resilience Assessment (CoBRA)
- DFID Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED)
- The Notre Dame Global Adaptation Initiative (ND-GAIN)
- ISO Climate Change Adaptation standard
- European Environment Agency Adaptation scoreboard



## Best practice reports

Input from 20+ additional best practice reports and literature reviews

- WASP (2021) UNEP Adaptation Gap Report
- Global Center on Adaptation (2020) State and Trends in Adaptation Report
- LSE (2019) Beyond simplistic metrics: assessing global progress on adaptation to climate change
- Climate Policy Initiative (2019) Global Landscape of Climate Finance
- ODI (2016) analysis of resilience measurement frameworks and approaches



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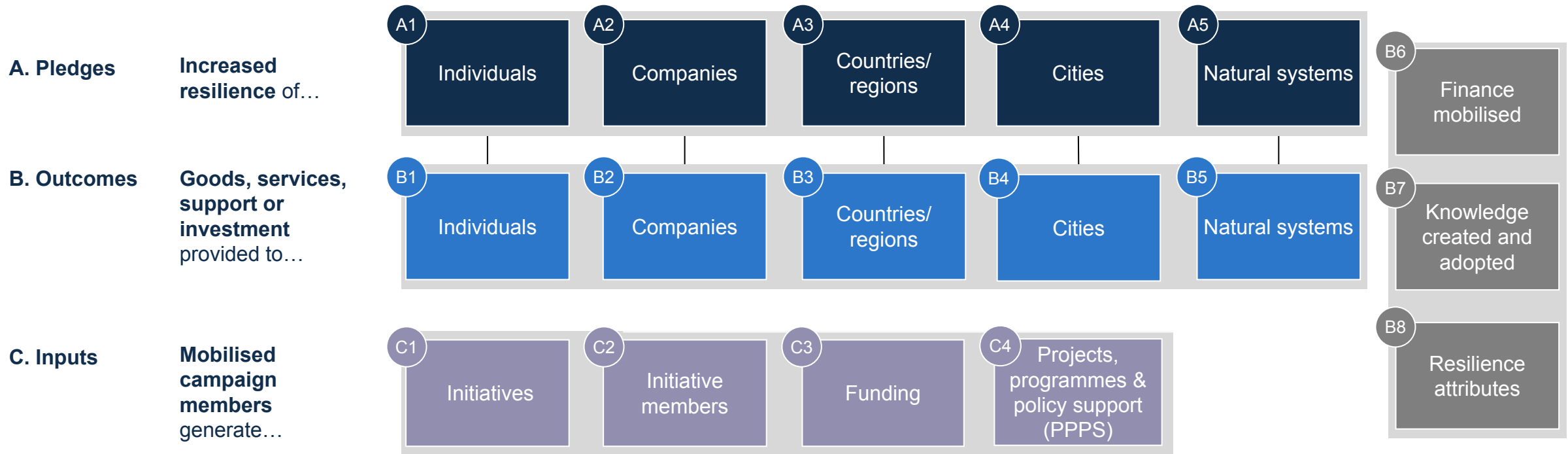
# The pledge, outcome and input metrics form a framework providing multiple reporting options for initiatives



Pledges
  Outcomes
  Inputs
  Cross-cutting support outcomes

## Metric levels

## Metric framework



**Initiatives will only report on relevant metrics in the framework** with all initiatives able to report against at least one of B1-B5.

1. Additional metrics will be captured as outlined in later slides

# Pledges deep-dive: primary and secondary metrics



Flagship metrics around projects, programmes or policy support (PPPS) that deliver increased resilience

	A1	A2	A3	A4	A5
	<b>Individuals</b>	<b>Companies</b>	<b>Countries/ regions</b>	<b>Cities</b>	<b>Natural systems</b>
<b>Description</b>	<i>Individuals receiving support from PPPS</i>	<i>Companies receiving support from PPPS</i>	<i>A country where a regional or national-level PPPS has been put in place</i>	<i>A city where a targeted PPPS has been put in place</i>	<i>A natural system where a targeted PPPS has been put in place</i>
<b>Primary metric</b>	# Individuals with increased resilience	# Companies with increased resilience	# Countries with increased resilience	# Cities with increased resilience	# Hectares of land or ocean restored or protected
<b>Secondary metrics mandatory classifications</b>	Hazard focus				
	Geography (country, región Admin 1, city, natural system)				
	Marrakech and AR5 action proxy classification				
<b>Other suggested segmentations</b>	Means of implementation (capacity-building, technology transfer, finance)				
	Type of good or service		Type of support or investment		
	Level1, gender, socioeconomic level	Sector, size (employees)	Admin 2+ level, urban/rural	Neighborhood, district, commune	Land, ocean, basin

# Outcomes deep-dive: primary and secondary metrics

Outcome metrics are converted into outcome metrics through a validation approach outlined in pp. 32 - 40



**Description**

*Same description as pledge metrics*

**Primary metric**

	# Individuals receiving goods or services	# Companies receiving goods or services	# Countries receiving support or investment	# Cities receiving support or investment	# Hectares of land or ocean receiving support or investment
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**Secondary metrics produced by segmentation**

*Same data segmentation as pledge metrics*

# Inputs deep-dive: primary and secondary metrics

	C1	C2	C3	C4
	<b>Initiatives</b>	<b>Initiative members</b>	<b>Funding</b>	<b>Projects, programmes or policy support (PPPS)</b>
<b>Description</b>	<i>Initiative member PPPS aligned with at least one of the 9 Marrakesh actions</i>	<i>Funding allocated by members into initiative-aligned PPPS or raised and deployed directly by the initiative</i>	<i>Organisations signed up and participating in an initiative</i>	<i>A membership organisation focused on climate resilience objectives and signed up to the campaign</i>
<b>Primary metric</b>	# PPPS captured by initiatives	USD funding allocated for initiative activities	# Members signed up to initiatives	# Initiatives signed up to the campaign
<b>Secondary metrics produced by segmentation</b>	<ul style="list-style-type: none"> <li>Hazard focus</li> <li>Geography</li> <li>Initiative type</li> <li>Service provided to members</li> </ul>	<ul style="list-style-type: none"> <li>Member type (business, NGO, investor, etc.)</li> <li>Level of participation</li> </ul>	<ul style="list-style-type: none"> <li>Specific PPPS</li> <li>Activity type</li> </ul>	<ul style="list-style-type: none"> <li>Hazard focus</li> <li>Geography</li> <li>Marrakech and AR5 action</li> <li>Type of Good or service</li> <li>Level(s) of focus</li> </ul>

Initiatives will be encouraged to present inputs as a narrative, including the data listed on this page where possible (but C3 and C4 are not mandatory).

# The framework captures initiative results through input, outcome and pledge metrics



	Inputs	Outcomes	Pledges
<b>Description</b>	Resources used by an initiative to undertake climate resilience activities	Products, goods and services generated by initiative activities	Increased climate resilience due to the provision of outcomes
<b>Example of metric</b>	# Active projects, programmes or policy support	# Individuals accessing goods and services	# Individuals with increased resilience
<b>Example of initiative reporting</b>	<b>5</b> Projects providing crop insurance to small-holder farmers	<b>10k</b> Small-holders accessing crop insurance	<b>10k</b> Small-holder farmers with increased resilience



**Resilience captured at an outcome level**, rather than as an impact

This encourages initiatives to **pledge and directly report resilience based on outcomes**

*Increased resilience is initiative and context specified*

# Cross-cutting outcomes deep-dive: primary and secondary metrics



	B6	B7	B8	
	<b>Finance mobilised</b>	<b>Knowledge created and adopted</b>		<b>Resilience attributes</b>
<b>Description</b>	<i>Additional funding catalysed by the initiative for climate resilience activity, either delivered by the initiative or through another channel</i>	<i>Knowledge outcomes that support the design, delivery and/or measurement of climate resilience</i>		<i>Initiatives will be asked to tick process-related resilience attributes relevant to their actions, and provide a short open response as to how these are being achieved</i>
		<b>Created</b>	<b>Adopted</b>	
		<i>Knowledge outcomes that are produced, peer-reviewed and then made publicly available</i>	<i>The referenced use of a knowledge outcome by an initiative or other actor to improve the design, delivery and/or measurement of climate resilience activities</i>	
<b>Primary metric</b>	USD financing mobilised by initiatives	# Peer-reviewed knowledge pieces reviewed	# Identified uses of knowledge piece	# Attributes
<b>Secondary metrics produced by segmentation</b>	Hazard focus			
	Type of instrument(s)	Type of knowledge outcome	Type of organization benefitting from knowledge partnership	Type of attribute(s)
	Source: public/private			Narrative



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# The campaign scope for initiatives included in the campaign and the types of activities captured



✓ Captured by the framework

✗ Not captured by the framework and not included in the campaign

## Initiative / project focus

- ✓ **Project focused on resilience**  
Resilience-building focus, whether targeting individuals, communities, regions, natural systems or broader institutions
- ✓ **Project with resilience embedded**  
Embedded resilience-building activities that reduce identified vulnerabilities alongside other potential development benefits
- ✗ **Project not targeting resilience**  
A development focused project, programme or policy support that increases local incomes, reduces poverty, or improves infrastructure or services but does not explicitly target climate shocks or stresses

## Resilience scope

- ✓ **Direct resilience**  
An individual, company, city, country or natural system directly targeted to receive goods or services to increase resilience  
*E.g. smallholder farmer receiving crop insurance and their household*
- ✗ **Indirect resilience**  
An individual, company, city, country or natural system not targeted, but as a result of a project, programme or policy support, indirectly experience increased resilience  
*E.g. individual consuming food produced by the smallholder farmer receiving crop insurance*

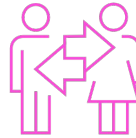
## Resilience longevity

- ✓ **Sustained resilience**  
Transformational adaptation which more permanently alters structural conditions and processes  
*E.g. diversification of crops and alternative lifestyles to cope with droughts; or changing the energy matrix to renewable energy*
- ✓ **Active resilience**  
Adaptation contingent upon an ongoing project, programme or policy support  
*E.g. crop insurance providing protection for the period of service provision*

# Outcome unit definitions and approaches for estimating number of individuals reached



## Individuals



## Companies



## Countries/regions



## Cities







## Natural systems

	Individuals	Companies	Countries/regions	Cities	Natural systems
<b>Definition</b>	Individuals and their households	Entity with 2+ employees engaged in commercial activity	Country where regional or national-level project is taking place	>50k inhabitants in adjoining grid cell >1.5k inhabitants / km <sup>2</sup>	A closed or open natural environment that provides resilience benefits to the local population
<b>Approach for estimating number of individuals reached<sup>1</sup></b>		Direct employees or national / sub-national average number of employees per business	<b>Not allowing individuals to be reported</b> from national or regional level projects	Whole city population for cities >500,000, % must be est. for cities with larger populations	Est. population in close proximity to, or whose livelihoods rely on the natural system
<b>Additional information</b>		<ul style="list-style-type: none"> <li>Includes informal and formal enterprise</li> <li>Includes MSMEs and MNCs</li> <li>Includes recipients and providers of climate resilience goods and services</li> </ul>	<ul style="list-style-type: none"> <li>Includes regional and national level projects</li> <li>Include policy, government capacity building and infrastructure projects</li> </ul>	<ul style="list-style-type: none"> <li>Includes secondary, primary and capital cities</li> </ul>	<ul style="list-style-type: none"> <li>Includes ocean and land based systems</li> <li>Includes man-made / managed natural systems such e.g. farms or managed woodland</li> </ul>

1. Recommended approach if not directly counting individuals  
Source: World Bank, ILO

# To accurately measure impact, the R2R metrics offer guidance to minimise different types of double counting





Double-counting examples		Campaign approach
 <b>Individual</b>	Multiple initiatives providing different services to the same individuals and counting impact	Accept double counting as it is unfeasible to address it and might disincentivise providing multiple levels of resilience-building support to the same population; but reporting must be hazard specific
 <b>Company</b>	Multiple initiatives aggregating the same company's impact	<b>Small and medium-sized enterprises (SMEs):</b> apply same logic as individual-level of double counting <b>Large companies / multinational companies (MNCs):</b> Master list of companies against which results may be reported Projects to be labelled by geography/hazard type, with briefs on services to flag duplication
 <b>City</b>	Multiple initiatives providing services to the same city and counting the full population	Master list of cities with official population figures to avoid number of individuals counted per city exceeding city population
 <b>Organisation</b>	Multiple initiatives aggregating the same organisation's impact	Master list of organisations against which results may be reported

# The campaign focuses on targeted support activities when capturing individual resilience



■ Targeted support where individual people or households are identified and aware they are receiving

Support level	Description	Example	Reporting implication
High	High levels of individualised support	<ul style="list-style-type: none"> <li>• Agricultural extension services</li> <li>• Training of individuals in communities to develop emergency plans</li> </ul>	 <p><b>Project<sup>1</sup> can report against individual outcomes</b> alongside any other unit of operation (e.g. Company, city, natural systems)</p>
Medium	Medium level of individualised support or direct community engagement	<ul style="list-style-type: none"> <li>• Information services such as a flood warning or weather forecast by text</li> <li>• People within catchment area of flood defences</li> <li>• People living in a community where other members have been trained in emergency flood response</li> </ul>	
Low	Low levels of individualised support	<ul style="list-style-type: none"> <li>• People within the administrative area of a ministry or local authority receiving capacity building support</li> <li>• Population of a country with a strengthened weather or climate monitoring</li> </ul>	 <p><b>Project cannot report against individual outcomes</b> but can report against the higher level units</p>

1. Includes programmes and policy support activities  
Source: USAID guidance

# R2R definition glossary (1/2)

Concept	Definition	Source
<b>Resilience</b>	The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning and transformation.	IPCC 2018 Report on Global Warming of 1.5°C [Masson-Delmotte, V., P. Zhai, H.-O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield (eds.)].
<b>Risk</b>	A climate-induced event or trend that may cause damage to human life, property, infrastructure, livelihoods, service provision, natural systems and environmental resources	IPCC (2019) Reports Annexes
<b>Hazard</b>	A climate-induced event or trend that may cause damage to human life, property, infrastructure, livelihoods, service provision, natural systems and environmental resources	IPCC (2019) Reports Annexes
<b>Exposure</b>	The presence of people, assets or natural systems in an area where hazards may occur	IPCC (2019) Reports Annexes
<b>Vulnerability</b>	The propensity of a population, asset or natural system to be adversely affected as a result of sensitivity and capacity to cope and adapt	IPCC (2019) Reports Annexes
<b>Adaptation</b>	The process of adjustment to actual or expected climate and its effects. In human systems, adaptation seeks to moderate or avoid harm or exploit beneficial opportunities	IPCC (2019) Reports Annexes
<b>Adaptive capacity</b>	Ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences	IPCC (2019) Reports Annexes
<b>Sensitivity</b>	The degree to which a system, asset, or species may be affected, either adversely or beneficially, when exposed to climate variability or change or geophysical hazards	World Bank (2021) Climate & Disaster Risk Screening Key Terms

## R2R definition glossary (2/2)



Concept	Definition	Source
<b>Direct resilience</b>	An individual, company, city, country or natural system directly targeted to receive goods or services to increase resilience	UK Government (2018). Number of people supported to better adapt to the effects of climate change as a result of ICF
<b>Indirect resilience</b>	An individual, company, city, country or natural system not targeted, but as a result of a project, programme or policy support, indirectly experience increased resilience	UK Government (2018). Number of people supported to better adapt to the effects of climate change as a result of ICF
<b>Sustained resilience</b>	Transformational adaptation which more permanently alters structural conditions and processes	IPCC (2014b) Adaptation Needs and Options
<b>Active resilience</b>	Adaptation contingent upon an ongoing project, programme or policy support	IPCC (2014b) Adaptation Needs and Options
<b>City</b>	>50k inhabitants in adjoining grid cells >1.5k inhabitants / km <sup>2</sup>	World Bank (2020) How do we define cities, towns, and rural areas?
<b>Company</b>	Entity with 2+ employees engaged in commercial activity undertaken for gain	OECD (2006) Glossary of Statistical Terms
<b>Country</b>	A territory with a defined population and a designated government	World Bank (2021) Country Classification
<b>Region</b>	Regions are at or near the Admin 1 levels within each country; these are often states or provinces	IPCC (2014b) Adaptation Needs and Options
<b>Natural system</b>	A natural environment or ecosystem experiencing increase resilience as a result of protection or regeneration, and in turn, providing resilience benefits to individuals	IPCC (2014b) Adaptation Needs and Options

# Contents

1. Context
2. Objectives
3. Methodology
  - Metrics
  - Definitions
  - **Classifications (Excel)**
  - Outcome validation
4. How to report
5. Further guidance



# Metrics classifications used for validated outcomes

Classification	Source	Examples
<b>Hazard</b>	Ad-hoc classification coherent with McKinsey's Risk Analytics data on exposure to hazards and the IPCC hazard classifications.	<ul style="list-style-type: none"> <li>• Heat/Cold: Heat stress, Snow and ice</li> <li>• Dry/Wet: Drought, Fire weather, Water stress, Urban flooding</li> <li>• Coastal/Oceanic: Coastal flooding, Oceanic events</li> <li>• Wind: Hurricanes/cyclones</li> </ul>
<b>Geography</b>	Admin 1 level, following McKinsey's Risk Analytics data on exposure (related and based on the United Nations <a href="#">UNLOCODE</a> Admin 1 codes (over 4,700 entries), the <a href="#">OECD Regional database</a> and EU <a href="#">NUTS</a> ).	<ul style="list-style-type: none"> <li>• ESP - Comunidad de Madrid (ESPr108)</li> <li>• TUR - Istanbul (TURr101)</li> <li>• CHN - Yunnan (CHNr125)</li> </ul>
<b>Cities</b>	UNLOCODE Cities and communes codes ( <a href="#">over 100,000 entries</a> ), related to the OECD Metropolitan areas <a href="#">database</a> (including data on heat/cold exposure, tree areas, etc).	<ul style="list-style-type: none"> <li>• AUS01: Greater Sydney</li> <li>• COL16: Valledupar</li> <li>• DE054: Constance</li> </ul>
<b>Ecosystems</b>	International Union for Conservation of Nature, <a href="#">IUCN Global Ecosystem Typology 2.0</a> , Appendix 1. List of Ecosystem Functional Groups by realms and biomes	<ul style="list-style-type: none"> <li>• Ocean-based (all marine, M)</li> <li>• Freshwater-based (all freshwater F, except MF)</li> <li>• Land-based (remaining territorial T and subterranean S)</li> <li>• Disaggregation natural versus anthropogenic</li> </ul>
<b>Occupations</b>	International Labour Organization, <a href="#">International Standard Classification (ISCO_88)</a> , at the Major Groups level	<ul style="list-style-type: none"> <li>• non employed</li> <li>• 6 agriculture</li> <li>• mainly outdoor: 7 craft trades, 8 plant machines &amp; 9 elementary</li> <li>• other sectors (0-5 + not elsewhere classified nec)</li> </ul>
<b>Sectors</b>	United Nations Statistics Division, <a href="#">International Standard Industrial Classification of All Economic Activities</a> (ISIC Rev. 4)	<ul style="list-style-type: none"> <li>• Agriculture, forestry and finishing</li> <li>• Mining and quarrying</li> <li>• Arts, entertainment and recreation</li> </ul>

# The Excel - README



## INSTRUCTIONS - MORE DETAIL IN CHECKLIST SHEETS

### Classifications (for information)

Yellow tabs include all classifications used in the Metrics Framework, please follow them as closely as possible. Please inform any departure from these classifications.

### Classifications examples (for information)

Light yellow tabs provide examples following the different classifications.

Tab Admin1\_3\_Chile\_ex provides an example of Admin levels 1 to 3 of subnational territorial classification for Chile (Regions, Provinces and Municipalities).

### Concepts (for information, and optional comments)

Green tabs include concepts used for projects and for metrics. These follow closely the concepts included in the survey and in the Metrics Framework slides. Next to each concept cell, feel free to comment, ask questions or make suggestions for improvement or clarification. In that space, inform of any departure on your part.

### Dates for metrics (for action)

- Please fill out a table to show us what level of detail you can report your metrics against
- **Note:** we do not expect initiatives to be able to report against all levels of detail and are trying to work out what is feasible

### Pledge types (for action)

The purple tabs present two different templates to present the data.

Fill in one only. Pledge type 1 is for those reporting per project and pledge type 2 per member or per initiative.

# The Excel - Hazard classification (and data on exposure)

*The classification of hazards is ad-hoc, although it follows the IPCC classification (heat, cold, dry, wet, coastal, oceanic, wind, other, all), and it is further disaggregated following the International Labour Organization classification on occupations to correspond with the data on exposure of McKinsey's Risk Analytics data.*

			McKinsey Risk Analytics data on hazard (scenarios 1.5°C and 2°C), exposure (ha and population), severity of exposure							
			Occupations considered for each hazard							
CIDs	Code	R2R Hazard classification	Hazard	non_employed	craft_trades	plant_machine	agriculture	elementary	other_sectors	All population
Heat	A	Heat stress - lives & livelihoods combined	Heat stress combined	Yes	Yes	Yes	Yes	Yes	Yes	yes
Heat	B	Heat stress - livelihoods (work)	Heat stress workability	No	Yes	Yes	Yes	Yes	No	Outdoor occupations
Heat	C	Heat stress - lives	Heat stress livability	Yes	Yes	Yes	Yes	Yes	Yes	yes
Heat	D	Extreme heat								
Cold	E	Extreme cold								
Cold	F	Snow and ice								
Dry	G	Drought (agriculture focus)	Drought Workability	No	No	No	Yes	No	No	Agriculture only
Dry	H	Drought (other)								
Dry	I	Water stress (urban focus)	Water stress	Yes	Yes	Yes	Yes	Yes	Yes	Urban only
Dry	J	Water stress (other)								
Dry	K	Fire weather (risk of wildfires)								
Wet	L	Urban flooding								
Wet	M	Riverine flooding	Riverine Flooding	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Coastal	N	Coastal flooding	Coastal Flooding	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Coastal	O	Other coastal events								
Oceanic	P	Oceanic events								
Wind	Q	Hurricanes/cyclones								
Wind	R	Extreme wind								
Other	S	Other (specify)								
All	T	All hazards (comment)	Total Risk	Deduplicated	Deduplicated	Deduplicated	Deduplicated	Deduplicated	Deduplicated	Deduplicated

# The Excel - Occupation classification ISCO\_88 (ILO)



## Classification for human counts - Lives and livelihoods (workability) is based on ISCO\_88 (ILO)

Only the major\_labels (0 to 9) are required for the classification of occupations (columns D and E). McKinsey's aggregates (column C) are also acceptable.

McKinsey Risk Analytics		International Standard Classification (ISCO_88), International Labour Organization						
Sort	Hazard	Occupation	major	major_label	sub_major	description	skill_label	
1	All hazards(*), except: - Heat stress workability - Drought workability	non_employed						
2		other_sectors	0	Armed Forces Occupations	01	Armed Forces	Skill level 4 (n.e.c)	
3			X	n.e.c			Not Elsewhere Classified	
4			1	Legislators, Senior Officials and Managers	11	Legislators and Senior Officials		Skill level 3 (high)
5						Corporate Managers		
6						General Managers		
7			2	Professionals	21	Physical, Mathematical and Engineering Science Professionals		Skill level 3 (high)
8						Life Science and Health Professionals		
9						Teaching Professionals		
10						Other Professionals		
11			3	Technicians and Associate Professionals	31	Physical and Engineering Science Associate Professionals		Skill level 3 (high)
12						Life Science and Health Associate Professionals		
13						Teaching Associate Professionals		
14						Other Associate Professionals		
15			4	Clerks	41	Office Clerks		Skill level 2 (medium)
16						Customer Services Clerks		
17						5	Service Workers and Shop and Market Sales Workers	
18			Models, Salespersons and Demonstrators					
19	All hazards(*)	agriculture	6	Skilled Agricultural and Fishery Workers	61	Market-Oriented Skilled Agricultural and Fishery Workers		
20					62	Subsistence Agricultural and Fishery Workers		
21	All hazards(*), except: - Drought workability	craft_trades	7	Craft and Related Trades Workers	71	Extraction and Building Trades Workers		
22					72	Metal, Machinery and Related Trades Workers		
23					73	Precision, Handicraft, Printing and Related Trades Workers		
24					74	Other Craft and Related Trades Workers		
25	25	plant_machine	8	Plant and Machine Operators and Assemblers	81	Stationary-Plant and Related Operators		
26					82	Machine Operators and Assemblers		
27					83	Drivers and Mobile-Plant Operators		
28	28	elementary	9	Elementary Occupations	91	Sales and Services Elementary Occupations	Skill level 1 (low)	
29					92	Agricultural, Fishery and Related Labourers		
30					93	Labourers in Mining, Construction, Manufacturing and Transport		

# The Excel - Geography - Country / Region classification



**Geography down to the Admin 1 level - Please use always codes together with names (in green)**  
 o-located data for agriculture and water-related natural systems and themes (such as aridity, precipitations, etc.). Links <http://www.fao.org/aquastat/stati>

Country	Country Code	Sub-national Admin 1 level Name	Admin 1 Code
Spain	ESP	Galicia	ESPr101
Spain	ESP	Principado de Asturias	ESPr102
Spain	ESP	Cantabria	ESPr103
Spain	ESP	Pais Vasco	ESPr104
Spain	ESP	Comunidad Foral de Navarra	ESPr105
Spain	ESP	La Rioja	ESPr106
Spain	ESP	Aragon	ESPr107
Spain	ESP	Comunidad de Madrid	ESPr108
Spain	ESP	Castilla y Leon	ESPr109
Spain	ESP	Castilla-la Mancha	ESPr110
Spain	ESP	Extremadura	ESPr111
Spain	ESP	Cataluna	ESPr112
Spain	ESP	Comunidad Valenciana	ESPr113
Spain	ESP	Illes Balears	ESPr114
Spain	ESP	Andalucia	ESPr115
Spain	ESP	Region de Murcia	ESPr116
Spain	ESP	Canarias	ESPr119
Turkey	TUR	Istanbul	TURr101
Turkey	TUR	West Marmara (Balikesir, Canakkale, Edirne, Kirklareli, Tekirdag)	TURr102
Turkey	TUR	Aegean (Afyon, Aydin, Denizli, Izmir, Kutahya, Manisa, Mugla, Usak)	TURr103
Turkey	TUR	East Marmara (Bilecik, Bolu, Bursa, Duzce, Eskisehir, Kocaeli, Sakarya, Yalova)	TURr104
Turkey	TUR	West Anatolia (Ankara, Konya, Karaman)	TURr105
Turkey	TUR	Mediterranean (Adana, Antalya, Burdur, Hatay, Isparta, Icel, K Maras, Osmaniye)	TURr106
Turkey	TUR	Central Anatolia (Kayseri, Kirsehir, Nevsehir, Nigde, Sivas, Yozgat, Aksaray, Kirikkale)	TURr107
Turkey	TUR	West Black Sea (Amasya, Cankiri, Corum, Kastamonu, Samsun, Sinop, Tokat, Zonguldak, Bartin, Kars)	TURr108
Turkey	TUR	East Black Sea (Artvin, Giresun, Gumushane, Ordu, Rize, Trabzon)	TURr109
Turkey	TUR	North East Anatolia (Agri, Erzincan, Erzurum, Kars, Bayburt, Ardahan, Igdir)	TURr110
Turkey	TUR	Central East Anatolia (Bingol, Bitlis, Elazig, Hakkari, Malatya, Mus, Tunceli, Van)	TURr111
Turkey	TUR	South East Anatolia (Adiyaman, Diyarbakir, Gaziantep, Mardin, Siirt, Sanliurfa, Batman, Sirnak, Kilis)	TURr112

# The Excel - Natural systems classification (IUCN)

## Example: agriculture is land-based, anthropogenic



IUCN: International Union for Conservation of Nature, Appendix 1. List of Ecosystem Functional Groups by realms and biomes

REALM	Ecosystem ty	REALM	BIOME	Ecosystem ty	Ecosystem ori
T Terrestrial	Land-based	T Terrestrial	T1 Tropical-subtropical forests	Land-based	Natural
S Subterranean	Land-based	T Terrestrial	T2 Temperate-boreal forests & woodlands	Land-based	Natural
SF Subterranean-Freshwater	Freshwater-based	T Terrestrial	T3 Shrublands & shrubby woodlands	Land-based	Natural
SM Subterranean-Marine	Ocean-based	T Terrestrial	T4 Savannas and grasslands	Land-based	Natural
FT Freshwater-Terrestrial	Freshwater-based	T Terrestrial	T5 Deserts and semi-deserts	Land-based	Natural
F Freshwater	Freshwater-based	T Terrestrial	T6 Polar-alpine	Land-based	Natural
FM Freshwater-Marine	Ocean-based	T Terrestrial	T7 Intensive land-use systems	Land-based	Anthropogenic
M Marine	Ocean-based	S Subterranean	S1 Subterranean lithic systems	Land-based	Natural
MT Marine-Terrestrial	Ocean-based	S Subterranean	S2.1 Anthropogenic subterranean voids	Land-based	Anthropogenic
MFT Marine-Freshwater-Terr	Ocean-based	SF Subterranean-Freshwater	SF1 Subterranean freshwaters	Freshwater-based	Natural
		SF Subterranean-Freshwater	SF2 Anthropogenic subterranean freshwaters	Freshwater-based	Anthropogenic
		SM Subterranean-Marine	SM1 Subterranean tidal systems	Ocean-based	Natural
		FT Freshwater-Terrestrial	TF1 Palustrine wetlands	Freshwater-based	Natural
		F Freshwater	F1 Rivers and streams	Freshwater-based	Natural
		F Freshwater	F2 Lakes	Freshwater-based	Natural
		F Freshwater	F3 Artificial fresh waters	Freshwater-based	Anthropogenic
		FM Freshwater-Marine	FM1 Semi-confined transitional waters	Ocean-based	Natural
		M Marine	M Marine shelves	Ocean-based	Natural
		M Marine	M2 Pelagic ocean waters	Ocean-based	Natural
		M Marine	M3 Deep sea floors	Ocean-based	Natural
		M Marine	M4 Anthropogenic marine systems	Ocean-based	Anthropogenic
		MT Marine-Terrestrial	MT1 Shoreline systems	Ocean-based	Natural
		MT Marine-Terrestrial	MT2 Supralittoral coastal systems	Ocean-based	Natural
		MT Marine-Terrestrial	MT3 Anthropogenic shorelines	Ocean-based	Anthropogenic
		MFT Marine-Freshwater-Terr	MFT1 Brackish tidal systems	Ocean-based	Natural

# The Excel - Sectors (disaggregation for companies)



## International Standard Industrial Classification of All Economic Activities (ISIC Rev. 4)

Only the letter code classification is required (A to U, column B). The Race to Zero sectors are also accepted.

### Code & description

- A. Agriculture, forestry and fishing
- B. Mining and quarrying
- C. Manufacturing
- D. Electricity, gas, steam and air conditioning supply
- E. Water supply; sewerage, waste management and remediation activities
- F. Construction
- G. Wholesale and retail trade; repair of motor vehicles and motorcycles
- H. Transportation and storage
- I. Accommodation and food service activities
- J. Information and communication
- K. Financial and insurance activities
- L. Real estate activities
- M. Professional, scientific and technical activities
- N. Administrative and support service activities
- O. Public administration and defence; compulsory social security
- P. Education
- Q. Human health and social work activities
- R. Arts, entertainment and recreation
- S. Other service activities
- T. Activities of households as employers; undifferentiated goods- and services-producing activities of households for own
- U. Activities of extraterritorial organizations and bodies

### Race to Zero sectors

Aluminium  
 Apparel  
 Aviation  
 Built environment  
 Cement/Concrete  
 Chemicals  
 Clean Power  
 Cooling  
 End of ICE – Buses  
 End of ICE – Heavy goods vehicles  
 End of ICE – Passenger vehicles & vans  
 Finance – Banks  
 Finance – Asset Managers  
 Finance – Asset Owners  
 Finance – Insurers  
 FMCG  
 Hydrogen  
 ICT  
 Metals & Mining  
 Mobile  
 NbS: Land Use  
 Oceans  
 Oil & Gas  
 Plastics  
 Retail  
 Shipping  
 Steel  
 Water

### Acronyms

ICE = Internal Combustion Engine  
 FMCG = Fast-Moving Consumer Goods  
 ICT= Information and Communication Technology  
 NbS = Nature-based Solutions

# Classifications: What are resilience actions?

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## Resilience

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*Increased resilience is initiative and context specific, and the Race to Resilience campaign is not specifying how to define it. Each initiative can have its own Theory of Change for climate resilience.*

*However, for metric collection, compilation and aggregation purposes, and to be in a position to get meaningful insights from the initiative metrics, we are asking initiatives to assign their outcome-related actions into:*

- 1. The nine Marrakech Partnership Climate Actions; and*
- 2. The ten IPCC AR5 Actions typology.*





# Classifications: Initiatives report the Marrakech action(s) aligned to their projects, programmes or policy support, and



Marrakech action		AR5 WGII category and subcategory correspondence		
1	Climate risk vulnerability assessments, disclosure & monitoring	2	Structural/physical	Technological
		6	Social	Informational
2	Early warning systems & early action	2	Structural/physical	Technological
		6	Social	Informational
3	Preparedness, contingency plans/ emergency response	6	Social	Informational
4	Climate risk governance & capacity building	9	Institutional	Laws and regulations
		10	Institutional	Government policies and programs
5	Nature-based solutions to reduce risks	3	Structural/physical	Ecosystem-based
6	Climate proofing infrastructure & services	1	Structural/physical	Engineered and built environment
		4	Structural/physical	Services
7	Risk transfer: Insurance & social protection	8	Institutional	Economic
8	Sharing knowledge & best practice on climate risk management	5	Social	Educational
		7	Social	Behavioral
9	Volume, quality and access of public and private finance	8	Institutional	Economic

Sources: Marrakech Partnership, Climate Action Pathway, Climate Resilience, [Marrakech Action Table 2020](#) (page 2) and Intergovernmental Panel on Climate Change, Fifth Assessment Report, Working Group 2, Impacts, adaptation and vulnerability, [IPCC AR5 WGII Table 14-1](#) (PDF page 13, Report page 845).

# Initiatives report the IPCC AR5 action subcategory(ies) aligned to their projects, programmes or policy support



AR5 WGII category and subcategory			Marrakech action correspondence	
1	Structural/physical	Engineered and built environment	6	Climate proofing infrastructure
2	Structural/physical	Technological	1	Climate risk vulnerability monitoring
			2	Early warning systems & early action
3	Structural/physical	Ecosystem-based (a)	5	Nature-based solutions to reduce risks
4	Structural/physical	Services	6	Climate proofing services
5	Social	Educational	8	Sharing knowledge & best practice on climate risk management
6	Social	Informational	1	Climate risk vulnerability assessments, disclosure
			2	Early warning systems & early action
			3	Preparedness, contingency plans/ emergency response
7	Social	Behavioral	8	Sharing knowledge & best practice on climate risk management
8	Institutional	Economic	7	Risk transfer: Insurance & social protection
			9	Volume, quality and access of public and private finance
9	Institutional	Laws and regulations	4	Climate risk governance & capacity building
10	Institutional	Government policies and programs	4	Climate risk governance & capacity building

Sources: Marrakech Partnership, Climate Action Pathway, Climate Resilience, [Marrakech Action Table 2020](#) (page 2) and Intergovernmental Panel on Climate Change, Fifth Assessment Report, Working Group 2, Impacts, adaptation and vulnerability, [IPCC AR5 WGII Table 14-1](#) (PDF page 13, Report page 845).

# Cross-cutting outcomes: Resilience attributes



# Cross-cutting outcomes: Resilience attributes



Concept	Definition	Source
<b>Preparedness and planning</b>	Ability to anticipate and prepare and plan for change and uncertainty by shaping responses, strategic planning initiatives and warning systems, and mitigation and prevention actions.	Aldunce, et al, 2014
<b>Learning</b>	People's capacity to generate, absorb, and process new information and knowledge about climate change adaptation options, and ways to live with, and manage uncertainty. It also includes personal and collective experiential learning, as the ability to learn from and internalize past experiences and failures as primary sources (e.g., disasters) and to modify actions in the face of changes in order to avoid the repetition of past mistakes and exercise caution in future decisions; “learning-by- doing”.	Aldunce et al, 2014; Cinner, et al 2018
<b>Agency</b>	The ability of people - individually or collectively - to have free choice in responding to environmental and other changes (Cinner, et al 2018). This includes the ability of local actors, communities or social systems to proactively, dynamically and flexibly configure themselves and modify actions and/or implement new ideas, approaches and programs following a disturbance, also known as self-organization (Aldunce, et al, 2014). A lack of agency can be seen as a lack of freedom of self-determination and action.	Aldunce, et al, 2014; Cinner, et al 2018
<b>Social collaboration</b>	The ability to organize and act collectively. The ways in which people, communities, and societies are organized to enable (or inhibit) cooperation, collective action and knowledge sharing, including social and human capital, relationships and governance systems. It includes partnership initiatives and collaborative approaches that bring people together in a mutually beneficial relationship.	Aldunce et al, 2014; Cinner, et al 2018;
<b>Equity and inclusivity</b>	A just and equitable distribution and access to resources, and respect of equal basic rights in decision- making, including and integrating all affected actors and discourses in decision- making processes (Dryzek, 2010; McDermott, et al, 2013). There is a particular focus on incorporating variety and extension of actors available (multi-actor, multi-sector, multi-level) (Aldunce et al, 2014), people and social identities.	Aldunce et al, 2014; Dryzek, 2010; McDermott, et al, 2013;
<b>Flexibility, diversity and redundancy</b>	Flexibility reflects having opportunities for switching between coping and adaptation strategies, actions, and management structures based on, for example, new information and ongoing evaluation. It captures the diversity, robustness and redundancy of alternative strategies available to ensure short and long-term adaptation, multiplicity of potential options, capabilities and responses linked to livelihoods, resources and social collaboration.	Aldunce et al, 2014; Cinner, et al 2018
<b>Assets</b>	The natural, financial, technological and service resources that people have access to in times of need (individually owned or public goods).	Cinner, et al 2018

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# Initiatives report outcomes against pledges using a validation process



## Relevant action

Initiatives assess activity relevance by assigning them to one or more of the Marrakesh or AR5 Actions

Alignment to the Marrakesh or AR5 Actions infers an evidence base that these activities will build resilience in the recipient group



## Outcome

Outcomes from relevant actions are assumed to increase resilience and will be reported as outcomes



## Validated outcome

Initiatives will be asked to report validated outcomes by validating:

1. The link to the Marrakesh or AR5 action
2. The delivery and adoption of actions, and
3. The resilience outcome of the recipient group

Note: The third step is encouraged but not a requirement for reporting results



# Initiatives validate outcomes through a variety of approaches



Validation steps	Requirement	Project example	Validation method
<b>1 Validate underpinning theory</b>	Evidence that the initiative activity(ies) align with one or more Marrakech or AR5 action, or your own theory of change	Theory of change that includes a recognised definition of climate resilience	Theory of change peer-reviewed within the campaign and/or by an independent evaluator
<b>2 Validate distribution of actions</b>	Evidence of distribution, and adoption where relevant, of goods and service	Evidence of built infrastructure	Formal certification (including contracts) and/or independent review
<b>3 Validate resilience outcome as a result of actions</b>	Evidence of perceived or actual resilience after distribution of goods and services	Baseline and end-line surveys for neighbouring community	Survey captures a perceived or actual increase in resilience



# Initiatives are required to undertake Steps 1 and 2, and develop capabilities to undertake Step 3



● Required ● Encouraged

## Validation steps



## Requirements




- 1 **Validate underpinning theory**
- 2 **Validate distribution of actions**
- 3 **Validate resilience outcome as a result of actions**

- **All initiatives will be expected to undertake Steps 1 and 2** to validate activity links to the Marrakech or AR5 Action and
- Initiatives already undertaking step 3, validating resilience outcomes, as part of existing commitments (e.g. receipt of ODA funding) will be encouraged to incorporate this into their R2R reporting
- Initiatives not yet undertaking step 3, validating resilience outcomes, will be invited to provide a **pathway to building this capability within a 2-year window**
- **The R2R campaign will support this pathway** through a learning platform and match-making with other members to build capacity



# The validation approach balances inclusivity and accuracy of reporting outcomes



	 <b>Check for relevance of initiative activity</b>	 <b>Actions reported as outcomes</b>	 <b>Outcomes validated and reported</b>
<b>Action</b>	Accepted initiative reports on activities that align against the <i>Marrakech or AR5 actions</i>	Initiatives with aligned activities report their outcomes against the R2R Metrics framework	Relevant actions are assumed to increase resilience and will be validated as outcomes through a variety of accepted approaches
<b>Example</b>	<b>Relevance check:</b> Crop insurance aligned to <i>7: Insurance and Social Protection</i>	<b>Outcome:</b> initiative provides crop insurance to 10,000 small-holders	<b>Validated outcome:</b> 10,000 small-holder farmers with increased resilience
<b>Metric reported against</b>	C1. Number of initiative projects, programmes or policy support	B1. Individuals receiving goods and services	B1. Individuals with increased resilience

*All steps will be self-reported by initiatives using the reporting template, with the campaign undertaking random spot-checks to review level of adoption*

# Contents

1. Context
2. Objectives
3. Methodology
- 4. How to report**
5. Further guidance

# The how-to-guide provides guidance for initiatives to select metrics and report pledges, outcomes and inputs



## Step 1: Select your metrics

Select metrics your initiative either already reports against or can easily report by making slight changes to your existing reporting approach



## Step 2: Report your pledges

Report your commitments against selected R2R actions, aiming to split these by hazard and geography (country/region/city/natural system)



## Step 3: Report your outcomes annually

Report your full set of selected pledge, outcome and input metrics, aiming to split these by hazard, geography, action and other classifications



***More information on following pages***



# How to select your metrics



*Our framework is designed to dock-in with your existing reporting*

Key questions	Metrics to select	Next-steps	Q&A
Can you report against individuals with increased resilience?	B1. Individuals	<p><b>If yes</b>, this will be your <b>primary pledge and outcome indicator</b></p> <p><b>If no</b>, please select an <b>alternative indicator</b> from question 2</p>	<p><b>How do you count individuals?</b></p> <p>Individuals are counted as direct beneficiaries and as households</p>
Do you track any of the secondary units?	B2. Companies B3. Cities B4. Countries B5. Natural systems	<b>If yes</b> , please consider also <b>reporting against these</b>	<p><b>What should you do if your initiative can only report 1 – 2 metrics?</b></p> <p>This is not a problem, the metrics are designed for initiatives to dock-in where they can rather than report against the full list</p>
What inputs do you currently track?	C1. Projects <sup>1</sup> C2. Funding C3. Members	Please consider <b>reporting against all inputs you currently track</b>	<p><b>What should you do if your initiative cannot report against individuals, companies, cities, countries or natural systems?</b></p> <p>In this situation it is likely your outcomes can be translated into one of these units, please reach out to the R2R for further guidance</p>

1. Includes programmes and policy support



# How to report your pledge



*Your pledges should capture the core ambition and objectives of your initiative*

## Key steps

**1 Identify selected outcome metrics** your initiative can pledge against

**2 Set high-level pledges**

Note: this can be estimated top-down or built bottom-up based on forecasted outcomes at a member or project, programme or policy support level

**3 Provide a pledge breakdown by primary hazard**  
e.g. Xm with increased resilience to Heat Stress

**4 Provide a pledge breakdown by country, region, city or natural system**  
e.g. Xm with increased resilience to Heat Stress in India / South Asia

**5 Upload pledges to the R2R reporting survey**

**Understanding initiative pledge breakdowns is critical** and allows the campaign to identify hazard and geographic gaps



## Q&A

**Will I be held accountable to my pledges?**

The campaign will not make individual pledges public or hold initiatives accountable to their pledges. However, initiatives may want to publicise their pledge to demonstrate their commitment to resilience.

**What should I do if my initiative is not able to segment pledges by hazard or geography?**

This will not exclude you from joining, pledging or reporting – however, the campaign encourages all initiatives to work towards reporting at this level



# How to report your inputs and outcomes annually



The annual survey will provide two options for reporting input and outcome results

## Two different reporting options

### Reporting options

#### 1 Report bottom-up by member project

Input data per project to build up to a complete picture of member results

#### 2 Report top-down by member

Input data per member and provide a breakdown of the data where possible

### Reporting steps

1.1 Members or initiative identifies member activities aligned to Marrakesh/AR5 actions

1.2 Report input and outcome metrics at a project level

1.2 Provide project information

1.4 Validate your outcomes through a range of approaches

2.1 Initiative identifies members undertaking activity aligned to Marrakesh/AR5 actions

2.2 Members or initiatives report input and outcome metrics at the member level

2.3 Provide data segmentation

2.4 Validate your outcomes through a range of approaches



## Which is right for you?

**Bottom-up project reporting** is the preferred option and provides the most detailed data for the campaign  
It is best undertaken by individual members reporting results from their projects to initiatives; initiatives will then input their members data into the survey directly.

**Top-down member reporting** should be used when members are unable to input data at a project level  
It is also recommended when an initiative has limited reporting capacity.

# Identify actions (1.1) or members with actions (2.1) that align to the Marrakech / AR5 actions

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*Marrakesh and AR5 actions are used to identify projects, programmes or policy support that are climate resilience focused*

## Questions

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**1.1 What should we do if one of our projects undertakes activities aligned to multiple actions?**

**2.1 What should we do if one of our initiative members is engaging in activities aligned with multiple Marrakesh actions?**

**1.1 What should we do if one of our activities does not align with an action?**

**2.1 What should we do if one of our members is not undertaking any activities aligned with the Marrakesh actions?**



## Answers

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There will be space to assign multiple outcomes to multiple actions, but for data aggregation purposes we will request to match each outcome to one action

Complementarily, you will be requested to cross check each outcome with one action in [IPCC AR5 WGII Table 14-1](#)

If indeed you feel the project, programme or policy support contributes to increase climate resilience but that it does not align with either the Marrakech or the AR5 actions, you are asked to select the action that comes closer, add a brief comment, and contact the R2R team.

# Initiative input initiative (1.2) or member (2.2) project activity information into the reporting survey



*Project information helps the campaign segment your data to generate additional insights*

## Steps to input project information

**You will be asked to input the following information per project**

- Primary climate hazard addressed
- Code(s) and name(s) of country and/or subnational region
- Primary Marrakesh action and primary AR5 action

**If reporting against companies, cities or natural systems you will be asked additional information**

- Code(s) and name(s) of focus city / cities supported
- Code(s) and name(s) of any FTSE 100, 250 or equivalent companies supported
- Code(s) and name(s) of any major natural systems supported, such as basins

**This project information will:**

- a) Support the campaign-level data segmentation
- b) Produce master lists we use to address double counting



## Q&A

**What should we do if one of our projects work to increase resilience across multiple hazards?**

The in-depth metrics reporting template allows for capturing this level of detail

**What is the R2R master list?**

The campaign will hold a master list of all initiative members, organisations, and projects involved in R2R as a way (1) to ensure consistency in reporting over the years and (2) to minimize the risk of double counting



# Report input and outcome metrics at a project level (1.3) or data segmentation per member (2.3)



*Initiative or members will report annually and results will be shared on a public dashboard by the R2R team. Project information helps the campaign segment your data to generate additional insights*

## Steps for data inputting or segmentation into the reporting survey

**Please contact us for google form to report at project or member level**

## Q&A

**Does a member project have to report on every metric and corresponding segmentation?**

No, member projects should only report against metrics that are relevant to their activities with segmentations that they *can* report against.

Member projects should report against *at least one* metric.

# Identify validation approaches appropriate for your projects (1.4) or members (2.4) to verify resilience outcomes



## Steps for validating project outcomes

TBC in 2022



## Q&A

### Do I report against pledges?

No; the reported actions will directly convert into outcomes via the survey reporting template and will be reflected on the public dashboard

# The Excel - README



## INSTRUCTIONS - MORE DETAIL IN CHECKLIST SHEETS

### Classifications (for information)

Yellow tabs include all classifications used in the Metrics Framework, please follow them as closely as possible. Please inform any departure from these classifications.

### Classifications examples (for information)

Light yellow tabs provide examples following the different classifications. Tab Admin1\_3\_Chile\_ex provides an example of Admin levels 1 to 3 of subnational territorial classification for Chile (Regions, Provinces and Municipalities).

### Concepts (for information, and optional comments)

Green tabs include concepts used for projects and for metrics. These follow closely the concepts included in the survey and in the Metrics Framework slides. Next to each concept cell, feel free to comment, ask questions or make suggestions for improvement or clarification. In that space, inform of any departure on your part.

### Dates for metrics (for action)

- Please fill out a table to show us what level of detail you can report your metrics against
- **Note:** we do not expect initiatives to be able to report against all levels of detail and are trying to work out what is feasible

### Pledge types (for action)

The purple tabs present two different templates to present the data. Fill in one only. Pledge type 1 is for those reporting per project and pledge type 2 per member or per initiative.

# The Excel - Dates for metrics (to be completed)



## METRICS - INSTRUCTIONS IN YELLOW

### 2. Please fill out this template

We do not expect initiatives to report against all of these metrics but only for those which are relevant to their work and the work of their members					A. Please fill the box by selecting the reporting status that best applies to your organisation / initiative per metric	B. Please provide a date here if applicable	C. Please add any comments
Ref	Metric	Unit (# means count indicator)	Reporting requirements according to the R2R campaign	Reporting status options:	If yes to Column F, estimate date at which you can start reporting (Month-Year pre-formatted)	Comments	
<b>EXAMPLE ENTRY</b>	B3b	Other subnational level (Admin 2 or above) receiving support from initiative projects		Suggested	1. Currently reporting against this metric 2. Ongoing work to report against this metric 3. Future plans to report against this metric 4. No plans to report against this metric <b>(Note: 4. is the default)</b>		
<b>A. Pledges</b>	A1	Individuals with increased resilience	Number of individuals	Requested	Ongoing work to report against this metric	August/2022	Will provide data
	A2	Companies with increased resilience	Count and/or list	Suggested	1. Currently reporting against this metric	August/2021	
	A3	Countries with increased resilience	Count and list	Requested	2. Ongoing work to report against this metric	August/2022	
	A3a	Regions (Admin 1) with increased resilience	Count and list	Requested	4. No plans to report against this metric		
	A4	Cities with increased resilience	Count and list	Suggested	1. Currently reporting against this metric	August/2021	
	A5	Natural systems with increased resilience	hectares	Suggested	4. No plans to report against this metric		
	B1	Individuals receiving support from initiative projects	Number of individuals	Requested	1. Currently reporting against this metric	August/2021	
	B1a	Direct beneficiaries receiving support from initiative projects	Count and list	Requested	1. Currently reporting against this metric	August/2021	
	B1b	Secondary-level beneficiaries receiving support from initiative projects	Count and list	Suggested	1. Currently reporting against this metric	August/2021	
		Disaggregation: male / female	M-F	Requested	1. Currently reporting against this metric	August/2021	
		Disaggregation: low / medium / high vulnerability	L-M-H	Requested	4. No plans to report against this metric		
	B2	Companies receiving support from initiative projects	Count and/or list	Suggested	2. Ongoing work to report against this metric	August/2022	
	B2a	Beneficiary companies receiving support from initiative projects	Count and/or list	requested if B2 is checked	3. Future plans to report against this metric	August/2023	
	B2b	Provider companies receiving support from initiative projects	Count and/or list	requested if B2 is checked	3. Future plans to report against this metric	August/2023	
		Disaggregation: company size	Number of employees	Requested	4. No plans to report against this metric		

# The Excel - Pledge\_type1\_preferred - Project detailed reporting



Dashboard	Deduplicated	4	5	6	5	6	5	6					
Human count	3,150,000												
Country count	2												
Region Admin 1	3												
City count	3												
Company count	45												
Identifier	Identifier	Identifier		List required for country count		List required for region count		List required for city count	List required for company count				
			Geography	Geography	Geography	Geography	Geography	Geography	Company	Ecosystems	Hazard	Hazard	
			Country	Country	Region (Admin 1)	Region (Admin 1)	City	City	Count	Natural systems	Hazard	Hazard	Individuals
Initiative	Member	Project	Name	Code	Name	Code	Name	Code	Count	Hectares (count)	Name	Code	Number (count)
Optional	Optional	Optional	Optional	Optional	Optional	Required	Optional	Optional	List separately	Optional	Optional	Optional	
Initiative_001	Member_001	Project_001	Chile	CHL	Metropolitana	CHLr113	Santiago	SCL	NA	NA	Water stress	I	1,000,000
Initiative_001	Member_002	Project_002	United States	USA	Florida	USAr110	Miami	MIA	30	NA	Coastal flooding	N	150,000
Initiative_001	Member_002	Project_003	United States	USA	New York	USAr133	New York City	NYC	15	1053	Coastal flooding	N	2,000,000

# The Excel - Pledge\_type2\_alternate - Member reporting



## METRICS - INSTRUCTIONS IN YELLOW

### 2. Please fill out this template

We do not expect initiatives to be able to report against all these levels of detail and are interested in the levels initiatives are currently able to, or are planning to, report against. For segmentation detail you are currently developing or planning to develop, please include an estimated data. This reporting template can be used by Initiatives with survey filled in at the project level. Details in the survey.

Category	Metric	Engagement level	Unit	Deduplicated total	Total (sum)	Member_001	Member_002	Member_003	Member_004	Member_005	Member_006
Pledge	A1	Individuals made more resilient	#	11,000,000	13,450,000	2,200,000	1,100,000	550,000	5,500,000	4,000,000	100,000
Pledge	A2	Companies made more resilient	#	27	27	10	5	12	-	-	-
Pledge	A3	Countries made more resilient	#	10	16	5	1	1	3	3	3
Pledge	A4	Cities made more resilient	#	20	23	15	1	3	4	-	-
Pledge	A5	Natural systems made more resilient	ha	3,000,000	3,000,000	-	-	-	-	2,000,000	1,000,000
		Number of Initiative Members	#	3	6	1	1	1	1	1	1
		Number of projects	#	10	8	1	1	1	1	1	3

# The Excel - Your feedback on Metrics Framework concepts



## METRICS - INSTRUCTIONS IN YELLOW

### 1. Please review definitions and additional concepts

Term	A. Please read prior to filling out template Preliminary definition + additional thoughts	B. Please provide comments or suggestions relating to definitions and notes Comments / suggestions
Project or PPPS	Project, programme or policy support (PPPS) focused on resilience or with resilience embedded and aligned with at least one of the Marrakesh actions AND one of the AR5 actions. <i>Note: A PPPS that does not target resilience, such as a development-focused PPPS that increases local incomes, reduces poverty, or improves infrastructure or services but does not explicitly target climate shocks or stresses, is not captured by the framework.</i>	
Project - Type of actor	Projects can be undertaken by a single initiative member or by multiple initiative members.	
Member-driven single actor project	Bottom-up project reporting is best undertaken by individual members reporting results from their projects to initiatives; initiatives will then input their members data into the template directly.	
Cooperative multi-actor project	Cooperative multi-actor projects should always be reported at the project level.	
Project - Type of reporting	The annual survey provides two options for reporting input and outcome results, by member project (bottom-up) or by member (top-down).	
By project	Input data per project to build up to a complete picture of member results. Bottom-up project reporting is the preferred option and provides the most detailed data for the campaign.	
By member	Input data per member and provide a breakdown of the data where possible. Top-down member reporting should be used when members are unable to input data at a project level. It is also recommended when an initiative has limited reporting capacity.	
Resilience	The capacity of social, economic and environmental systems to cope with a hazardous event or trend or disturbance, responding or reorganizing in ways that maintain their essential function, identity and structure while also maintaining the capacity for adaptation, learning and transformation. (IPCC).	
Increased resilience	An incremental increase of climate resilience which is first verified by linking the output activity to the Marrakech actions and validated by a variety of quantitative and qualitative evaluation methods.	

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# The campaign provides additional guidance to ensure data quality whilst retaining a feasible initiative reporting requirement



Aspect	Criteria	Mandatory	Advisable
<b>Initiative focus</b>	A publicly documented initiative aim is to reduce vulnerabilities by engaging in resilience-building activities	✓	
	Initiative member activities align with at least one of the 9 Marrakesh and 10 AR5 actions	✓	
	Basic process-related resilience attributes are considered: e.g. Diversity, Connectivity, Modularity, Adaptive Learning, Inclusivity, Equity	✓	
<b>Results measurement</b>	The initiative has a Theory of Change and metrics capturing resilience of individuals or one of the additional units (company, country, region, city, natural systems)	✓	
	The initiative supports members to assess climate resilience outcomes through qualitative and quantitative methods		✓
	Initiatives engage in annual reviews to validate assumptions used to convert actions to outcomes	✓	
<b>Community &amp; risk management</b>	Initiatives engage with local communities when testing their assumptions or collecting data	✓	
	The initiative or member organisation conducts an ongoing risk assessment to identify maladaptation risks		✓
	The project, programme or policy support includes adaptability/flexibility in case of a surprise of failure or contingent planning		✓

# The Race to Resilience approach docks into the Marrakech impact areas and actions



R2R impact areas	<b>Urban</b>		<b>Rural</b>		<b>Coastal &amp; Oceans</b>		
Five Marrakech impact areas	<b>Resilient cities</b>		<b>Resilient infrastructure and services</b> (Transport, energy and industry)		<b>Resilient food and agriculture systems</b>		
						<b>Resilient water and natural systems</b>	<b>Resilient coastal zones and oceans</b>
9 Marrakech actions	<ol style="list-style-type: none"> <li>1 Climate risk vulnerability assessments, disclosure &amp; monitoring</li> <li>2 Early warning systems &amp; early action</li> <li>3 Preparedness, contingency plans/ emergency response</li> </ol>		<ol style="list-style-type: none"> <li>4 Climate risk governance &amp; capacity building</li> <li>5 Nature based solutions to reduce risks</li> <li>6 Climate proofing infrastructure &amp; services</li> </ol>		<ol style="list-style-type: none"> <li>7 Risk transfer: Insurance &amp; social protection</li> <li>8 Sharing knowledge &amp; best practice on climate risk management</li> <li>9 Volume, quality and access of public and private finance</li> </ol>		

Alternatively, you can cross check if your actions align with one of those in [IPCC AR5 WGII Table 14-1](#).

# Metrics: statistical definitions of risk and related concepts



**Risk implies an assessment of the likelihood of hazards.**

**Hazards are negative shocks**, i.e. shocks with damaging impacts or negative externalities.

- Hazards can be exogenous/extrinsic (droughts, tornadoes); endogenous/intrinsic (water shortage due to a facility failing); or both (water shortage due to the structural mismanagement of water resources).
- Hazards can be acute or chronic disturbances.

**Likelihood refers to hypothesis, i.e. events that are neither exclusive nor exhaustive** (a storm, extreme heat).

- In contrast, probability refers to possible events, i.e. to events that are mutually exclusive and exhaustive (living versus dying, throwing a dice).
- Likelihood is a combination of size, frequency and intensity of hazards.

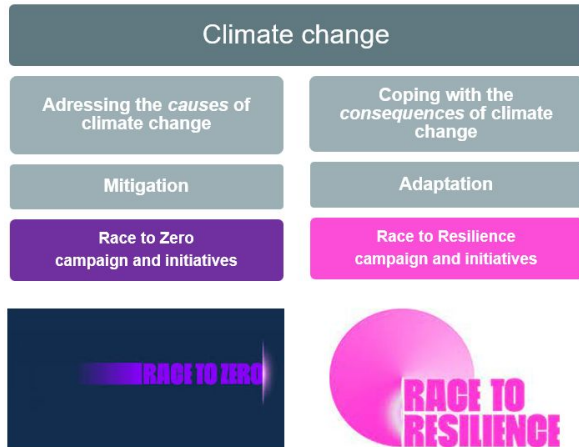
**There is no risk without exposure.** Exposure can imply **systemic** or **idiosyncratic** risks.

- Exposure to a rise of temperatures is systemic, i.e. global, even if unequal. Cf. Race to Zero.
- Exposure to the different impacts of this rise in temperature (droughts, rising sea levels) is idiosyncratic, diversified. Cf. Need Analytics.

**Vulnerability can be defined as the likelihood of not being resilient**, given the exposure to specific hazards.

- Resilience, and therefore vulnerability, are quantitative, multidimensional metrics.
- Adaptation on the other hand is the assessment of vulnerability above a certain threshold, a qualitative, ordinal or even dichotomic type of indicator.
- The Race to Resilience campaign and initiatives contribute with actions aimed at increasing the likelihood of being resilient.

# Metrics: resilience metrics in the context of adaptation



In the area of **mitigation**, which addresses the **causes** of climate change, the emissions of GHG, the impact of land use in carbon capture and storage, and the rise in global temperatures are considered to be **both extrinsic and intrinsic** to countries and agents.

On the contrary, in the area of **adaptation**, which addresses the **consequences** of climate change, hazards are often considered extrinsic/exogenous, **while resilience is considered intrinsic/endogenous**.

**Regarding vulnerability, three distinctions can be made** for the Metrics Framework purpose:

- **Structural conditions:** Autonomous, inherent, innate conditions of the system that contribute positively or negatively to the resilience of the components of the system. They are usually measured with hard data: social development indicators, GDP per capita, education, remoteness, governance.
- **Acquired conditions:** Conditions gained from the exposition to previous disturbances, such as experiential learning, social collective memory, social learning, or built due to local circumstances, such as social capital, social cohesion, social responsiveness. They can not be easily captured with hard data, but they can be proxied with soft data from surveys.
- **Responsive conditions:** Response and coping capacity to disturbances. These conditions are associated with local (coping ability) and policy responses, preparedness, and other policy conditions and outcomes (savings, emergency funds, political stability).

## Metrics: on sources of data for risk and resilience

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**“Risk” implies measurable uncertainty** (risk of droughts, floods, sea rising, etc). In contrast, unmeasurable uncertainty is simply “uncertainty” (a meteorite falling, a plant falling from a terrace). **It makes sense to prepare and alter behaviors to confront risk**; it makes less sense to prepare for plain uncertainty.

**Climate change physical, natural and social scientists** contribute to the **understanding, assessment and measurement of hazards, exposure, and vulnerability**, regarding, for example:

- The likelihood of a rise in temperatures (this relates to Race to zero).
- The likelihood of collateral hazards due to this rise in temperature (droughts, floods, tornadoes, rising sea levels).
- The idiosyncratic (country/city/natural system/individual) exposure to any of these hazards (Risk Analytics of Race to Resilience).

**Sectoral experts and agents in the field** have the theoretical, empirical and technical tools to **pledge and implement actions leading to increased resilience**, defined as the capacity/ability of a system to confront/face/alter/react to hazards in order to reduce exposure or vulnerability, maintain basic functions and adapt to new contexts.