GATES AG-ONE
AND THE RECOLONISATION OF AGRICULTURE

Navdanya

Bill Gates having become a billionaire through the deregulation of corporate globalisation is now leading the recolonization of Asian, Latin American and African Agriculture. Gates has taken the failed Green Revolution to Africa as AGRA (the Alliance for the Green Revolution in Africa) and now has launched the same initiative under the new name AgOne[1]. This time pushing the new technologically updated Green Revolution to shape the future of Agriculture.

What is AgOne and what is its aim?

In January 2020, a new initiative announced by the Gates foundation called "The Bill & Melinda Gates Agricultural Innovations LLC", or "Gates Ag One" in short was launched. Gates Ag One was formulated to be a subsidiary of the Gates Foundation and is to be led by Joe Cornelius, the previous director of the BMGF Global Growth & Opportunity Division. It is interesting to note that Cornelius came from being the former food, nutrition and technology development executive at Bayer Crop Science, following his previous position, in the 1990s, as Director for International Development at Monsanto.[2]

It is being hailed as a new non-profit to "bring scientific breakthroughs to smallholder farmers whose yields are threatened by the effects of climate change" and shrink the supposed 'productivity gaps' present in Africa, Asia, and Latin America.[3] It will work with the Gates Foundation's Agricultural Development Team and other partners across sectors to "accelerate the development of innovations" that are "needed to improve crop productivity and help smallholder farmers, the majority of whom are women, adapt to climate change".[4]

The goal of Gates Ag One is claimed to be "to empower smallholder farmers with the affordable, high-quality tools, technologies, and resources they need to lift themselves out of poverty." According to the creation document, "yields on farms in these regions are already far below what farmers elsewhere in the world achieve, and climate change will make their crops even less productive."[5]

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[1] See also: Shiva, V., Anilkumar, P., Ahluwalia, U., "Ag One: Recolonisation of Agriculture", Navdanya/RFSTE, 2020, http://navdanya.org/site/latest-news-at-navdanya/703-ag-one-recolonoisation-of-agriculture

[2] Gray, Bryce. "Gates Foundation Plans Crop Research Center in St. Louis." *Online Research Library: Questia | St Louis Post-Dispatch (MO)*, January 30, 2020. https://www.questia.com/newspaper/1P4-2348219385/gates-foundation-plans-crop-research-center-in-st

[3] "Overview: Bill & Melinda Gates Agricultural Innovations." Bill & Melinda Gates Foundation, January 2020. https://docs.gatesfoundation.org/Documents/GatesAgOne_OverviewandFAQ.pdf

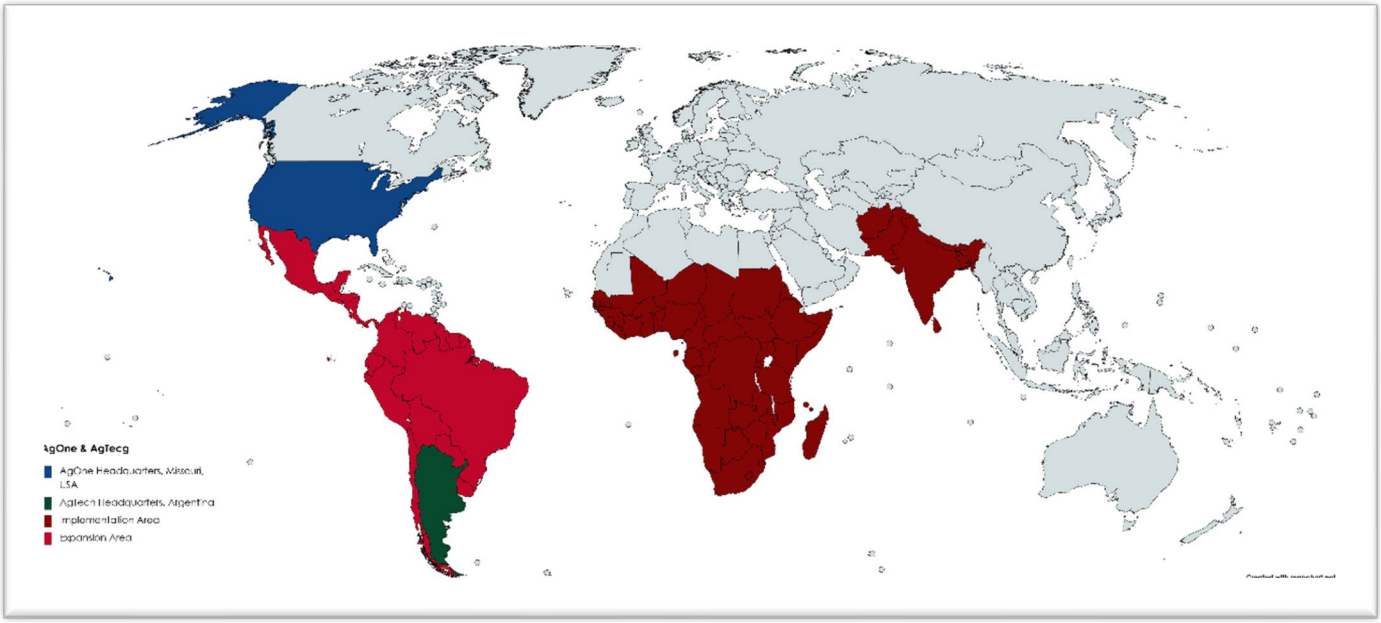
[4] Ibid.

[5] "Gates Foundation on Intention to Create Nonprofit Agricultural Research Institute." *Bill & Melinda Gates Foundation | Press Releases*, January 21, 2020. https://www.gatesfoundation.org/Media-

Rodger Voorhies, president of the Foundation's Global Growth & Opportunity division, has said that Gates Ag One plans to work with partners from the *public and private sector to commercialize* "resilient, yield-enhancing seeds and traits". He adds, "We needed to accelerate the access to the kinds of products and services that low income people and smallholder farmers need," due to the long time it takes for these new discoveries to move from invention, to development, to lab testing and then once commercially viable for the field, to move through regulation. [6] Voorhies explains, "We didn't think that research was flowing down to the crops that matter most to smallholder farmers in a timeframe that could reach them...But ultimately the Gates Foundation did not see another way to ensure that early-stage discoveries, such as water use efficiency for crops that will face extremes of droughts and floods, are made accessible and affordable to smallholder farmers as quickly as possible."[7] In short they are hoping to artificially accelerate the process of introducing 'new technologies' to farmers through increased investment and public and private partnerships while having total freedom in their business model as a separate entity to the Bill and Melinda Gates Foundation.

Where will it work?

In a document released by the Gates foundation itself, it is claimed that Ag One will work in "South Asia - with a population of about 1.8 billion - and Sub-Saharan Africa- home to around 1 billion people."[8]



Center/Press-Releases/2020/01/Gates-Foundation-Statement-on-Creation-of-Nonprofit-Agricultural-Research-Institute

[6] Cheney, Catherine. "Exclusive: Gates Foundation Launches New Agriculture-Focused Nonprofit." *Devex*. Last modified January 21, 2020. https://www.devex.com/news/sponsored/exclusive-gates-foundation-launches-new-agriculture-focused-nonprofit-96384

[7] Ibid.

[8] Ibid.

What is not mentioned in their creation statement is the implementation of the AgOne programme in Latin America, called 'AgTech', through a partnership with Inter-American Institute for Cooperation on Agriculture (IICA).[9] The programme's initiation point is planned to be in Argentina, to then subsequently be implemented throughout the rest of Latin America.

Ag One, Gates Global Commission on Adaptation and the takeover of the CGIAR system

Overlapping behind several of the initiatives launched by Bill and Melinda Gates, is a characteristic urgency that all new technologies and mitigation efforts must be pushed, adopted and quickly implemented in the name of stopping climate change. This rhetoric stands to mask a wide section of the Gates' initiatives, organizations, and funding schemes whose real purpose actually runs counter to any type of true climate change alleviation.

The same is true for AgOne, as the foundation is tied indirectly to another Gates initiative called the Gates Global Commission on Adaptation[10] focused exactly on only pushing technological solutions to climate change adaptation and mitigation, through such things as filling in the 'data gap' of the global south, green smart cities, and increased development (and return investment) opportunities through these efforts. AgOne was, therefore, launched as part of its 2019 year of Climate action.[11]

The Global Commission on Adaptation hosts as its co-chairs, along with Gates, some international organization heavyweights such as the previous 8th secretary general of the UN, Ban-Ki Moon who serves as the head of the organization's board, and Kristalina Georgieva, the current managing director at the International Monetary Fund (IMF).

Forming part of AgOne's strategy will be the doubling of funding to CGIAR, an organization Gates has had his eye on for quite some time. Hence, in September of 2019 at the UN Climate Summit, and as part of the Gates Global Commission on Adaptation's year of climate action, CGIAR announced the gift of more than $79 million dollars of an investment coalition headed by Bill Gates, and made up of the World Bank, the UK, the Netherlands, the European Commission, Switzerland, Sweden and Germany. [12] According to the CGIAR announcement, *"US $310 million [is to be given by] the Bill & Melinda Gates Foundation over the next three years to support CGIAR's shared agenda to tackle climate change and make food production in the developing world more productive, resilient and sustainable. The foundation is the second largest donor to CGIAR after the US Agency for International Development (USAID), with investments contributing to*

[9] "Microsoft y El IICA Definieron Hoja de Ruta Para La Transformación Digital Del Agro de Las Américas." *Instituto Interamericano de Cooperación Para La Agricultura (IICA)*. https://www.iica.int/en/node/16190
[10] "About." *Global Center on Adaptation*. https://gca.org/about
[11] "Global Coalition Promises More than $650 Million to Accelerate CGIAR Efforts to Help 300 Million Smallholder Farmers Adapt to Climate Change." *CGIAR*, September 23, 2019. https://www.cgiar.org/news-events/news/uncas-global-coalition-funds-cgiar/
[12] Ibid.

work in crop breeding, seed systems, gender equity, livestock, nutrition, and policy."[13] Therefore, aligning the vision of CGIAR with that of AgOne.

A move made even more significant as, the recently released ETC report states, a new System Reference Group (SRG) struck in 2018, has delivered its recommendations in July 2019 calling for the formal consolidation of the 15 Centers of the (CGIAR) into one. The meeting of the 15 Center Chairs was convened at Bioversity International (BI) headquarters outside Rome in December 2019 to discuss the "mega-merger". The consolidation would involve one international board which would be responsible for all 15 Centers.[14] The dangers seem imminent when one looks deeper and sees that the SRG is co-chaired by Tony Cavalieri, Senior Program Officer of the Bill & Melinda Gates Foundation, and Marco Ferroni, Chair of the System Management Board and recently retired as head of the Syngenta Foundation. The unification is being pushed by Gates and Syngenta Foundations, USAID, UK, Canada, Australia and Germany. Unification will mean an even stronger blurring of lines between the private and public sectors. Private agendas of making profits will be clothed as the public agenda. Now to be even further blurred through the launching of AgOne. This also provides unprecedented leverage in individual country policy and mass access to genetic seed resources. This hunger for influencing global food policy comes as no surprise as the Gates' foundation website itself states, "a key trigger of agricultural transformation is a conducive policy environment."[15]

When one reads the agenda of the newly launched AgOne, one can also not help but think of the rhetoric of 2008 launched Alliance for the Green Revolution in Africa or AGRA, which essentially served to revamp the ghost of the already dead and failed Green Revolution of the 1960s. Considering the multiple alliances to Agrochem companies, one can only assume AgOne is meant to pick up AGRA's baton with a new tech twist, and run to the rest of the global south.

Poison Cartel and Gates Foundation:

The fact that Ag One will be based in St. Louis, Missouri USA, home of Monsanto and other GMO and pesticide giants, is not a coincidence. AgOne claims to "empower smallholder farmers" by providing more accessible technology to help them face climate change. This sounds eerily like Bayer who also claims to "empower 100 million smallholder farmers around the world by providing more access to sustainable farming solutions – all by the year 2030." Through looking at examples of current and past co-investments, one can start to see what 'private-partnerships' will most likely emerge in AgOne's quest to "empower smallholder farmers to lift themselves out of poverty." In 2010, a US financial website published the Gates foundation's annual investment portfolio,

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[13] Ibid.
[14] "The Next Agribusiness Takeover: Multilateral Food Agencies." *ETC Group*. Last modified February 12, 2020. https://www.etcgroup.org/content/next-agribusiness-takeover-multilateral-food-agencies
[15] "Agricultural Development." *Bill & Melinda Gates Foundation*. https://www.gatesfoundation.org/What-We-Do/Global-Growth-and-Opportunity/Agricultural-Development

Poison Cartel. Toxic Capital.

The Vanguard Group, Inc.
Norges Bank Investment Management
Northern Cross LLC
Jupiter Asset Management Ltd.
Fidelity Management & Research Co.
UBS AG (Investment Management)
Artisan Partners LP
Credit Suisse AG
Capital Research & Management Co. (World Investors)
Syngenta AG

The Vanguard Group, Inc.
Norges Bank Investment Management
Northern Cross LLC
Fidelity Management & Research Co.
Capital Research & Management Co. (Global Investors)
Jupiter Asset Management Ltd.
UBS AG (Investment Management)
Artisan Partners LP
Credit Suisse AG
Capital Research & Management Co. (World Investors)
as of 31 Dec 2015

Capital Research & Management Co. (World Investors)
The Vanguard Group, Inc.
SSgA Funds Management, Inc.
BlackRock Fund Advisors
Trian Fund Management LP
T. Rowe Price Associates, Inc.
Fidelity Management & Research Co.
Highfields Capital Management LP
Northern Trust Investments, Inc.
DuPont Capital Management Corp.

Capital Research & Management Co. (World Investors)
The Vanguard Group, Inc.
Lyxor International Asset Management SAS
Norges Bank Investment Management
State Street Global Advisors Ltd.
BlackRock Fund Advisors
Massachusetts Financial Services Co.
BlackRock Asset Management Deutschland AG
Amundi Asset Management SA (Investment Management)
Dodge & Cox

The Vanguard Group, Inc.
SSgA Funds Management, Inc.
BlackRock Fund Advisors
Capital Research & Management Co. (World Investors)
Third Point LLC
Capital Research & Management Co. (Global Investors)
Wellington Management Co. LLP
Northern Trust Investments, Inc.
Capital Research & Management Co. (International Investors)
Franklin Advisers, Inc.

Capital Research & Management Co. (Global Investors)
The Vanguard Group, Inc.
SSgA Funds Management, Inc.
BlackRock Fund Advisors
Massachusetts Financial Services Co.
Glenview Capital Management LLC
Fidelity Management & Research Co.
Sands Capital Management LLC
PRIMECAP Management Co.
Davis Selected Advisers LP

MONOPOLY

NAVDANYA

Graphic: Navdanya

which showed it had bought 500,000 Monsanto shares around $23m.[16] More recently, publications of Gates' Annual investment portfolio, or "strategic investment fund" which is stated to allow the foundation to advance its 'philanthropic goals' through investments in for-profit companies, showed a $7 million equity stake in AgBiome, a biotech start-up focused on developing synthetic biological products through CRISPR technology for the agricultural sector.[17] A start-up who also holds investments from agrochem companies Monsanto and Syngenta and who the Gates foundation gave a $20 million grant to develop pesticides for Africa. [18]

This shows just one of the numerous ventures where Bill and Melinda Gates Foundation and Monsanto have invested together with a false narrative of "helping the poor in South Africa". Pivot Bio, a biotech startup that focuses on making nitrogen fixing microbes, being another example. Pivot Bio also being another Gates Foundation funded startup who later received another $70 million dollars, and who holds investments from Monsanto Growth Ventures and the US's Defense Advanced Research Projects Agency or DARPA. [19]

More explicitly, with its launch of the Latin American AgOne, 'AgTech', IICA has announced partnerships for its implementation with Microsoft[20], Bayer[21], Corteva[22], and Syngenta[23], all along with the Bill and Melinda Gates Foundation.

By looking to the outcomes of AGRA we can start to see what pattern wishes to be repeated with all of these strategic alliances in the launching of AgOne. Through the Gates foundation's promotion of chemical and genetically modified inputs, they have worked to essentially open up previously isolated or hard to reach markets in Africa, South Asia and Latin America for the benefit of private corporations, as these patented 'high-yield' seeds are not owned by no one and investments are very clearly made for for-profit companies. The commercialization mentioned by Voorhies means private company profit.

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[16] Vidal, John. "Why Is the Gates Foundation Investing in GM Giant Monsanto?". *The Guardian*, September 29, 2010. http://www.theguardian.com/global-development/poverty-matters/2010/sep/29/gates-foundation-gm-monsanto

[17] Schwab, Tim. "Bill Gates's Charity Paradox." *The Nation*, March 17, 2020. https://www.thenation.com/article/society/bill-gates-foundation-philanthropy/
"Platform | AgBiome." https://www.agbiome.com/platform/
Burwood-Taylor, Louisa. "Bill & Melinda Gates Foundation Makes First Agtech Investment in AgBiome's $34.5m Series B." *AgFunderNews*, August 20, 2015. https://agfundernews.com/bill-melinda-gates-foundation-first-agtech-investment-agbiome-011.html

[18] Ibid.

[19] Vinluan, Frank. "Pivot Bio Gets $70M, Led by Bill Gates's Fund, to Replace Fertilizer - Page 2 of 2." *Xconomy*. Last modified October 2, 2018. https://xconomy.com/san-francisco/2018/10/02/pivot-bio-gets-70m-led-by-bill-gatess-fund-to-replace-fertilizer/

[20] "Microsoft e IICA Firmaron Un Acuerdo Para Potenciar El Uso de Tecnología En El Agro | Solo Campo." Last modified December 24, 2018. http://solocampo.com.ar/index/microsoft-e-iica-firmaron-un-acuerdo-para-potenciar-el-uso-de-tecnologia-en-el-agro/

[21] "El IICA y Bayer firman acuerdo para promover seguridad alimentaria en América." *Nuevos Papeles*, February 7, 2019. https://www.nuevospapeles.com/nota/17625-el-iica-y-bayer-firman-acuerdo-para-promover-seguridad-alimentaria-en-america

[22] "Acuerdo entre Corteva Agriscience y el IICA fortalecerá producción de alimentos de calidad en las Américas." *Instituto Interamericano de Cooperación Para La Agricultura (IICA)*, October 31, 2019. https://iica.int/es/prensa/noticias/acuerdo-entre-corteva-agriscience-y-el-iica-fortalecera-produccion-de-alimentos-de

[23] "Syngenta y el IICA se unen para impulsar la innovación en la agricultura de las Américas." *Instituto Interamericano de Cooperación Para La Agricultura (IICA)*, July 7, 2020. https://iica.int/es/prensa/noticias/syngenta-y-el-iica-se-unen-para-impulsar-la-innovacion-en-la-agricultura-de-las

Source: https://agra.org/ar-2019/#2019-highlights

To be specific, in 2008, the year AGRA was launched, South Africa was the only African country that had approved the use of GM seeds. Subsequently, GM seeds were expanded to the previously GM-free Egypt, Burkina Faso, and Sudan. While other countries such as Ghana, Kenya, Tanzania, Uganda, Malawi, Mali, Zimbabwe, and Nigeria began conducting research into GM crops. By 2017, some countries had even moved into implementing field trials.[24] This huge expansion of GM crop use, particularly maize, is a consequence of large-scale promotion directly aimed at increasing market share to the large agribusiness companies that own the patented seed. Those patented GM seeds also go along with their accoutrements of chemical inputs, all promoted through alliances with agrochemical companies through the guises of AGRA. In sum, roughly ten years after the revival of the Green Revolution through AGRA, industrial agriculture expanded in some form or another, from one country to eleven, showcasing a huge expansion in BigAg business. As explained by Tim Wise in his report on AGRA, in 10 years, productivity rates in these countries only increased due to these inputs being highly subsidized, and were nowhere near enough to alleviate poverty and hunger.[25] Meaning only big agrochemical companies directly benefited from Gates' push for 'agricultural development'.

This comes as no surprise, as in a video shot by the Gates Foundation to explain the necessity of development of agricultural innovation, Gates exposes the Green Revolution as being, "the most significant advancement in human

[24] Curtis, M. 2016. Gated Development: Is the Gates Foundation Always a Force for Good? Second Ed., Global Justice Now. June 2016. Pg. 31. https://www.globaljustice.org.uk/sites/default/files/files/resources/gjn_gates_report_june_2016_web_final_version_2.pdf

[25] Wise, Timothy A. "AGRA at Ten Years: Searching for Evidence of a Green Revolution in Africa," November 2017. https://afsafrica.org/wp-content/uploads/2019/10/agrawiseprelimfindings2017.pdf

history behind modern medicine, due to its ability to drastically increase yields."[26] With just this one statement, which shows his full scale support of industrial agriculture, we can almost guarantee this pattern will be repeated with the implementation of AgOne.

Unveiling the rhetoric of Ag One

Once one begins to look closely at the AgOne concept note, one can quickly start to pick apart how its rhetoric is completely disconnected from any true lived experience of the impacts of the first Green Revolution, as well as its unprecedented global ecological, social, economic and cultural impacts. Contrary to what Bill Gates might think, agroecological food systems are overall more productive, more resilient to climate change, and provide greater livelihood security.

Rhetoric 1: "*Yields on farms in regions like Sub-Saharan Africa and South Asia are already far below what farmers elsewhere in the world achieve and in the future the crop production will further worsen because of climate change*" and so we need Ag One to "*accelerate the development of innovations*" *that are "needed to improve crop productivity*".

Counter: Contrary to the myth that small farmers and their agroecological systems are unproductive, and we should leave the future of our food in the hands of the Poison Cartel, small farmers are providing 80% of global food using just 25% of the land that goes into agriculture.[27] There have also been countless studies that have proven that agroecological, organic agriculture, especially those based on biodiversity, are all around more resilient to climate change, more economically viable and lead to increases in crop productivity. [28] For example, biodiversity helps reduce diseases in agroecosystems, improving the resilience of the plant and inevitably leading to higher yields.

The diversity of knowledge embedded in agroecological and traditional farming systems also provides a greater safety net for confronting extreme weather patterns and ecological shifts. As stated by Altieri et. Al in the study over the climate resiliencies of agroecological systems, "Observations of agricultural

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[26] *Slideshow: Bill Gates on Agricultural Innovations - YouTube*, 2009. https://www.youtube.com/watch?v=xXcB8k7Ysk4

[27] "Hungry for Land: Small Farmers Feed the World with Less than a Quarter of All Farmland." *Grain*, May 28, 2014. https://www.grain.org/article/entries/4929-hungry-for-land-small-farmers-feed-the-world-with-less-than-a-quarter-of-all-farmland

[28] HLPE. 2019. Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome. http://www.fao.org/3/ca5602en/ca5602en.pdf

Shefali , Sharma. "Agroecology: Key to Agricultural Resilience and Ecosystem Recovery." *Institute for Agriculture & Trade Policy (IATP)*, June 16, 2019. https://www.iatp.org/agroecology-key-agricultural-resilience-and-ecosystem-recovery

De Schutter Olivier, Report of the Special Rapporteur for the Right to Food, A/HRC/16/49, United Nations - Human Rights Council, 2010 https://www2.ohchr.org/english/issues/food/docs/a-hrc-16-49.pdf

Mcintyre, Beverly & Herren, Hans & Wakhungu, Judi & Watson, Robert. (2009). Agriculture at a Crossroads: The Global Report. https://www.researchgate.net/publication/258099731_Agriculture_at_a_Crossroads_The_Global_Report

performance after extreme climatic events (hurricanes and droughts) in the last two decades have revealed that resiliency to climate disasters is closely linked to farms with increased levels of biodiversity."[29]

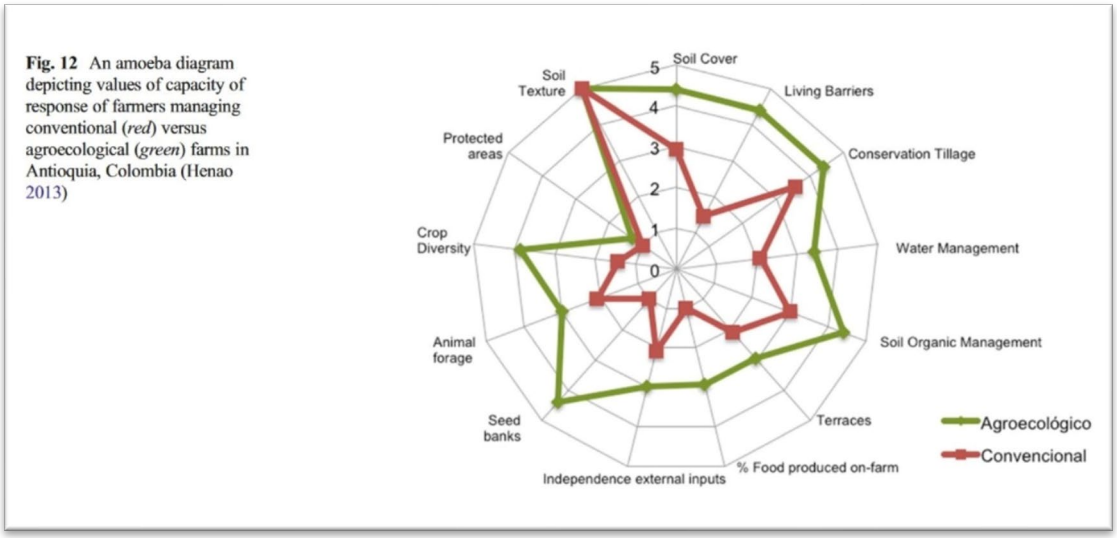
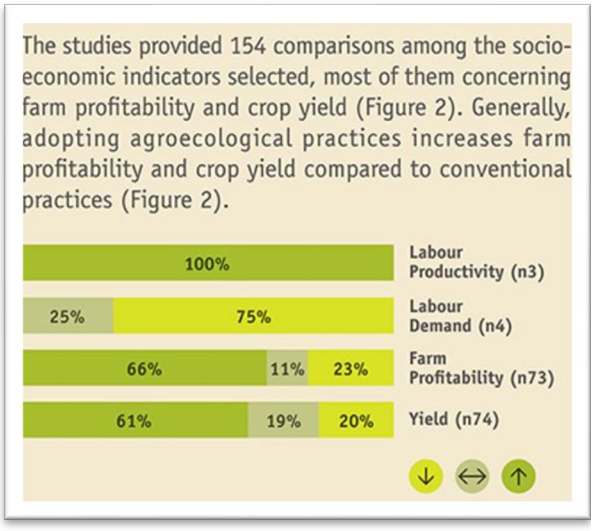


Fig. 12 An amoeba diagram depicting values of capacity of response of farmers managing conventional (*red*) versus agroecological (*green*) farms in Antioquia, Colombia (Henao 2013)

Source: https://link.springer.com/article/10.1007/s13593-015-0285-2

Rhetoric 2**:** Ag One will "*empower smallholder farmers with the affordable, high-quality tools, technologies, and resources they need to lift themselves out of poverty.*"



Source: https://www.researchgate.net/publication/283721240_Social_and_economic_performance_of_Agroecology

Counter**:** Reliance on internal inputs and recycling of resources leads to less cash strain for costly chemical inputs. Coupled with increased productivity, this means farmers are better able to meet their monetary needs and overall livelihoods. This fact was corroborated in a study presented at the 2nd International Conference on Global Food Security, through looking at global comparative data. The study found that adopting agroecological farming practices, generally led to increased crop yield and profitability in comparison to conventional practices. [30]

[29] Altieri M.A., Nicholls C., Henao A., Lana M., Agroecology and the design of climate change-resilient farming systems, 869 – 890, 35 (3), SN 1773-0155, Springer, Agronomy for Sustainable Development, 2015, https://link.springer.com/article/10.1007/s13593-015-0285-2

[30] D'Annolfo, Raffaele & Gemmill-Herren, Barbara & Graeub, Benjamin & Garibaldi, Lucas. (2015). Social and economic performance of Agroecology. https://www.researchgate.net/publication/283721240_Social_and_economic_performance_of_Agr

So, this begs the question, does being lifted out of poverty mean being folded into the commodity market? Considering Gates' longstanding alliance with giant industrial agriculture companies, this is most likely the objective. While farmers have bred hundreds of thousands of varieties, of thousands of species, the Green Revolution has reduced the agriculture and food base to a handful of globally traded commodities, with only 30 plants supplying 95% of global food demand.[31] Genetic Engineering has further narrowed the commercially planted crops to four - Corn, Soya, Cotton, Canola and 2 traits - Bt and HT (herbicide tolerant). This reduction of marketable crops also creates a flooding of commodity crops which keep prices low, making it all the more difficult for small-scale nonorganic farmers to make a living.

Regardless, such a simplistic view of simply solving poverty with technological innovation reduces the multidimensionality of why certain populations remain poor.

Through this and similar rhetorics, Gates pushes the philanthropist ethic where the rich give to the poor, painting the rich as providing favors to the poor they exploited to gain their wealth, in the end making the poor evermore dependent on the rich. Coupled with his development agenda, a chimera of charity development' emerges which reinforces the power structures of inequality in the areas where they work, reiterating the trope of white saviorism.

For example, Gates chief scientist at Microsoft Azure Global, Ranveer Chandra who is in charge of developing sensors for data gathering on farms through the FarmBeats project, has himself, as well as Gates, readily admit they have no expertise in agronomy, biology, farming or related fields, but still believe that through computer and data science, they can solve complex, multidimensional ecological and social problems, such as poverty.[32] Reiterating the trope of the technical expert who comes to bestow the poor with their knowledge, never leading to empowerment but only to dependence. In the end this reductionist way of implementing top-down technologies, works to deepen global poverty through creating further dependence on centralized high-cost inputs.

Rhetoric 3: "*Smallholder farmers are involved in unsustainable practices like grazing into forests which affects fragile ecosystems and will cause further damage to the environment and exacerbate the effects of climate change.***"**

Counter: Commodity based, fossil fuel intensive, monocultural industrial agriculture is, by far, more responsible for the effects of climate change and ecosystem destruction.[33] Chemical pesticides are directly responsible for the mass killing of

oecology

[31] FAO 2010. The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture. Rome. http://www.fao.org/3/i1500e/i1500e.pdf

[32] *How Data-Driven Farming Could Transform Agriculture | Ranveer Chandra | TEDxUniversityofRochester - YouTube*. TEDx TALKS, 2018. https://youtu.be/dpVylFjT-Cw

[33] IPBES (2019): Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. E. S. Brondizio, J. Settele, S. Díaz, and H. T. Ngo (editors). IPBES secretariat, Bonn, Germany. https://ipbes.net/global-assessment

birds and insects.[34] Fossil fuels are used in almost every step of the industrial food system from, in the field through nitrogen fertilizers, diesel fuel for the myriad of industrial agricultural equipment, to transportation of commodities in the international supply chain, their storage, and eventually their disposal.[35] Nitrogen fertilizers also pollute water sources, dry out land and destroy soil.[36] Leading to, overall, more water being necessary in industrial agriculture leading to furthering the global water strain.[37]

The true culprits of large-scale deforestation has been the industrial agriculture sector, who' search for the perpetual amplification of the agricultural frontier is responsible for 70-90% of global deforestation.[38] The land cleared is then used for the production of chemically intensive monocultures of commodity crops like maize, soy, sugarcane, cotton, palm oil and so on. These crops are then used in industrial food making processes, biofuels, or animal feed - creating a vicious cycle of GHG emissions with the other areas of the industrialized food system.[39] Gates seems to completely disregard this, as in 2016, he invested $14 million into biofuel conversion company Renmatix. A company who produces a technology to aid in the conversion of biomass to cellulose sugars for biofuels.[40] Biofuels have been responsible for the clearance of rainforests all around the world, especially in the Amazon in Brazil, not small farmers.[41]

IPCC, 2019: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press. https://www.ipcc.ch/report/srccl/

FAO. 2019. The State of the World's Biodiversity for Food and Agriculture, J. Bélanger & D. Pilling (eds.). FAO Commission on Genetic Resources for Food and Agriculture Assessments. Rome. 572 pp. (http://www.fao.org/3/CA3129EN/CA3129EN.pdf) Licence: CC BY-NC-SA 3.0 IGO.

[34] Sánchez-Bayo, F., & Wyckhuys, K. A. G. (2019). Worldwide decline of the entomofauna: A review of its drivers. *Biological Conservation*, *232*, 8–27. https://doi.org/10.1016/j.biocon.2019.01.020

Goulson, D., Insect decline and why they matter, Wildlife Trusts, 2019, https://www.somersetwildlife.org/sites/default/files/2019-11/FULL%20AFI%20REPORT%20WEB1_1.pdf

Brain RA, Anderson JC. The agro-enabled urban revolution, pesticides, politics, and popular culture: a case study of land use, birds, and insecticides in the USA. *Environ Sci Pollut Res Int*. 2019;26(21):21717-21735. doi:10.1007/s11356-019-05305-9, https://pubmed.ncbi.nlm.nih.gov/31129901/

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[35] La Vía Campesina and GRAIN. "Food Sovereignty: Five Steps to Cool the Planet and Feed Its People." *Grain*, December 15, 2014. https://www.grain.org/article/entries/5102-food-sovereignty-five-steps-to-cool-the-planet-and-feed-its-people

[36] Mateo-Sagasta, J., Marjani Zadeh, S., & Turral, H. (2018). *More people, more food… worse water? - Water Pollution from Agriculture: a global review*. FAO. http://www.fao.org/documents/card/en/c/CA0146EN

Rodríguez-Eugenio, N., McLaughlin, M. and Pennock, D. 2018. Soil Pollution: a hidden reality. Rome, FAO. 142 pp. http://www.fao.org/3/I9183EN/i9183en.pdf

[37] "Organic vs Conventional." *Rodale Institute*. https://rodaleinstitute.org/why-organic/organic-basics/organic-vs-conventional/

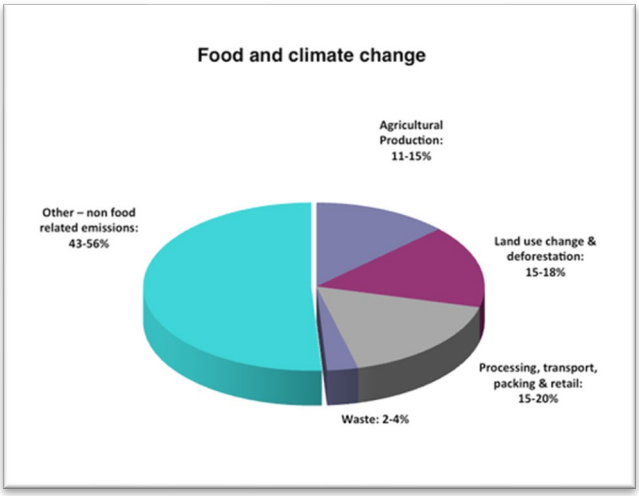
[38] "Food and Climate Change: The Forgotten Link." *Grain*, September 28, 2011. https://www.grain.org/e/4357

[39] Ibid.

[40] Renmatix. "Renmatix Secures $14M Investment from Bill Gates and Total, the Global Energy Major, In Concert with Signing of 1 Million Ton Cellulosic Sugar License," September 15, 2016. https://renmatix.com/uploads/renmatix-bulletin-gates-press-release.pdf

[41] "Sugar Cane, Palm Oil, and Biofuels in the Amazon." *Yale School of the Environment | Global Forest Atlas*, n.d. https://globalforestatlas.yale.edu/amazon/land-use-and-agriculture/biofuels

By framing the narrative in a way that pins the responsibility of climate change on "smallholder farmers who are involved in unsustainable practices" the Gates foundation evades responsibility for the destruction it has been instrumental in causing. We cannot address climate change, and its very real consequences, without recognising the central role of the industrial and globalised food system, actively supported by the Gates Foundation. The globalised food system contributes from 44% to 57% of all greenhouse gas emissions through deforestation, industrial inputs (such as chemical fertilizers, petrol, fertilizer, irrigation and so on), animals in concentrated animal feeding operations (CAFOs), plastics and aluminium packaging, long distance transport and food waste.[42]



Source: https://www.grain.org/e/4357

We cannot solve climate change without small-scale, ecological agriculture, based on biodiversity through living seeds, living soils, living and local food systems. A proven way to decrease CO2 emissions is exactly through local food economies which eliminate fossil fuel intensive methods, and global supply chains, in favor of resource recycling, low intensity inputs to heal the soil, and biodiversity. Slow, whole, organic diets increase nutrition and lessen climate impact in a multidimensional fashion. [43]

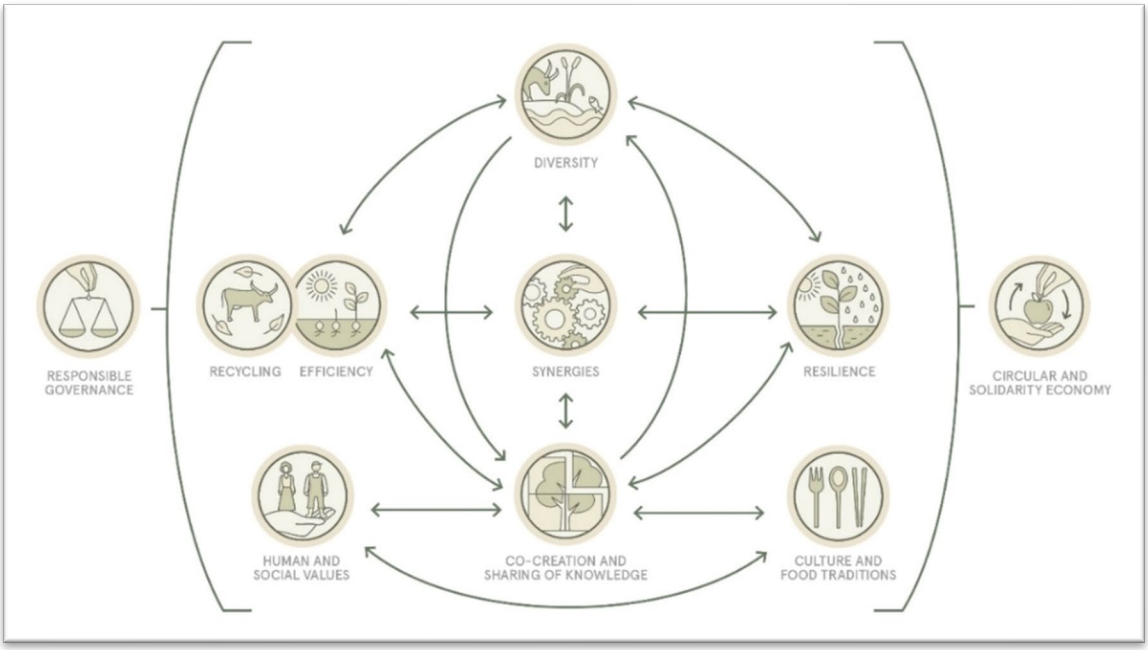
Rhetoric 4: *"we believe that everyone has the right to live a healthy, productive life. But many of the world's poorest people—those who make their living through agriculture—will not have that opportunity unless they can access the innovations needed to adapt to the challenges caused by climate change" and we will "help smallholder farmers, the majority of whom are women, adapt to climate change".*

Counter: They make it sound like farmers cannot live a healthy and productive life without technology. They also make it sound like the only way to face climate change is with the help of their "innovations" when they will profit massively from them. Through this elevation of technological means to human ends, the corporate agenda is made the human agenda, imposition is defined as "inclusion" and "Democratization". Corporations endow their tools with inevitability and rob societies of thinking of options and alternatives. However, there is no inevitability in the tools humanity uses. Chemicals and the Green Revolution were not inevitable. They were imposed through conditionalities[44]. The failures of the Green Revolution and its 'innovations' do not provide a solid base

[42] Ibid.
[43] Ibid.
[44] Ibid.

for the argument of new technological innovations[45]. Technology itself also greatly impacts climate change through its whole chain of its material extraction, production, distribution and waste processing[46]. A new technological fundamentalism makes corporate tools a measure and indicator of human progress, immune to social and democratic assessments.

With the ecological emergency, climate emergency and the food emergency, the technologies that are needed are participatory and evolutionary, breeding for climate resilience, for increasing nutrition, and making agriculture poison free.



"Interaction of the 10 Elements of Agroecology". Source: FAO, http://www.fao.org/agroecology/knowledge/10-elements/en/

The urgency implied around the need for technological solutions to climate change provides the mask through which they can push the universal adoption of a new series of data-reliant technologies. Since climate change is 'new' there must also be a 'new, innovative' solution to solve it, leading to a new wave of epistemic colonization. "One Agriculture One Science"[47] essentially means "one research and one knowledge". In a world of diversity, claiming to be the "One" is a design for Imperialism. It is a design for epistemic colonisation. It is a denial of the richness of agroecological knowledges and practices that are resurging around the world.

[45] Shiva, V. (1991). *The Violence of the Green Revolution: Third World Agriculture, Ecology, and Politics*. Other India Press. https://books.google.it/books?id=jPNRPgAACAAJ.
[46] ICTworks. "Digital Technologies Are Part of the Climate Change Problem." *ICTworks*, February 20, 2020. https://www.ictworks.org/digital-technologies-climate-change-problem/
[47] Akbar, Syed. "One Agriculture-One Science: Partnership to Revitalize Global Farm Education | India News - Times of India." *The Times of India*, July 22, 2014. https://timesofindia.indiatimes.com/india/One-agriculture-one-science-Partnership-to-revitalize-global-farm-education/articleshow/38867896.cms

CONSTRUCTIONS AND TECHNOLOGICAL MYTHS TO COLONISE OUR FOOD AND FARMING SYSTEMS

- Corporations turn a blind eye to farmers' innovations and the knowledge and tools farmers have evolved over millennia to breed seeds, renew soil fertility, manage pests and weeds ecologically and produce good food.
- They elevate corporate tools to a new religion and new civilizing mission which has to be imposed to civilize the ecological, independent, knowledge sovereign farmers who are seen as the new barbarians. A new technological fundamentalism makes corporate tools a measure and indicator of human progress, immune to social and democratic assessments. Farmers have a fundamental democratic right to compare their agroecological tools with what the Poison Cartel has to offer and with full knowledge and information make a democratic choice. Through this elevation of technological means to human ends, the corporate agenda is made the human agenda, imposition is defined as "inclusion" and "democratization".
- Corporations endow their tools with inevitability and rob societies of thinking of options and alternatives. However, there is no inevitability in the tools humanity uses. Chemicals and the Green Revolution were not inevitable. They were imposed through conditionalities. GMOs are not inevitable and are failing as tools of pest control and weed control, leading instead to emergence of superpests and superweeds. There is multiple and diverse intelligence in nature and society. Artificial Intelligence or machine learning is not inevitable. It is being imposed through forced digitalization, making us forget the intelligence in nature and her diverse living beings, the intelligence in the soil food web, the ecological intelligence of farmers and women, the intelligence of the microbes in our gut and the enteric nervous system: our second brain.

When society develops and chooses technologies democratically the questions we ask are:

What does the technology do?

What is the tool for? Who controls the tools?

Do we have technological alternatives to address the same problem?

Do we need them for improving human wellbeing and the wellbeing of all species?

What are the ecological impacts of the tools on life on earth and human health?

What are the social impacts of the tools?

The Gates Agenda: Subverting our International Treaties and Biodiversity

Undermining the Protection of Biodiversity

Convention on Biological Diversity

In 1992, the international community adopted this convention at Rio De Janeiro at the Earth Summit.

The objectives of the convention were:

- Conserving biological diversity
- Sustainable use of resources
- Fair and equitable sharing of benefits that arise out of commercial use

Nagoya Protocol

Under CBD, there are multiple protocols created. One of them is the Nagoya protocol on access and benefit sharing, 2010.

The objective was to establish a legally binding framework for the implementation of the concept of access and benefit sharing as birthed in the convention on biological diversity. The protocol creates duties and obligations on the parties engaging with indigenous communities for the use of genetic resources and knowledge.

International Treaty on Plant Genetic Resources Treaty for Food and Agriculture (ITPGRFA)

Also known as the International Seed Treaty, the objective is: conservation and sustainable use of all plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use, in harmony with the Convention on Biological Diversity, for sustainable agriculture and food security.

Digital Mapping: Subverting these Regulations on Access to Biodiversity

These international frameworks made to protect our biodiversity are being completely subverted through digital mapping of the genome. Biopiracy is being carried out through the convergence of information technology and biotechnology by taking patents through "mapping" genomes and genome sequences. While living seed needs to evolve "in situ", patents on genomes can be taken through access to seed "ex situ". This undermines farmers' rights as you don't need the permission from the farmers anymore once the genome has been digitally mapped.

New GMOs: CRISPR and Gene Editing

Gates has been pushing for it several years now, with a huge investment of $ 120 Million dollars (along with his capitalist friends). Gates used to fund others to get this done, but impatient with lack of progress, he now wants to do it himself.

Source : https://www.cd-genomics.com/blog/120-million-investment-for-crispr-technology-from-bill-gates-and-other-13-investors /

Gene editing is a failed technology.

Gene editing has been proven to be a failure because of how inexact and unpredictable it is. It was found that CRISPR introduced more than 1,500 single-nucleotide unintended mutations, more than 100 larger deletions and insertions into the genome of mice.

Source: Shiva, V and Shiva, K. 2018. The Future of our daily bread: Regeneration or Collapse. Navdanya International / Research foundation for science, technology and ecology

Ag One: Sowing the Seeds of Surveillance

Although we have seen how the new AgOne initiative will line up with previous iterations of Gates' attempt to expand the classic, failed methods of the Green Revolution, AgOne also sees the unveiling of a new generation of external input technologies. The focus of AgOne is to transition small farmers to use 'new digital tools and technologies'. Principally referenced are the 'yield-enhancing' or drought tolerant seeds which include old and new types of GMOs, as well as CRISPR technologies adopted on seeds and living plants.

Gates has been pushing for CRISPR and gene editing several years now. In 2016 an investment firm called bngo headed by former science advisor to Gates, Boris Nikolic, and of whom Gates is a backer, provided a huge seed investment of $120 million dollars to fund Cambridge's Editas Medicine- one of the first to research and develop CRISPR technology. [48] Since then he has publicly expressed his full fledged support of CRISPR for its use in agriculture and medicine.

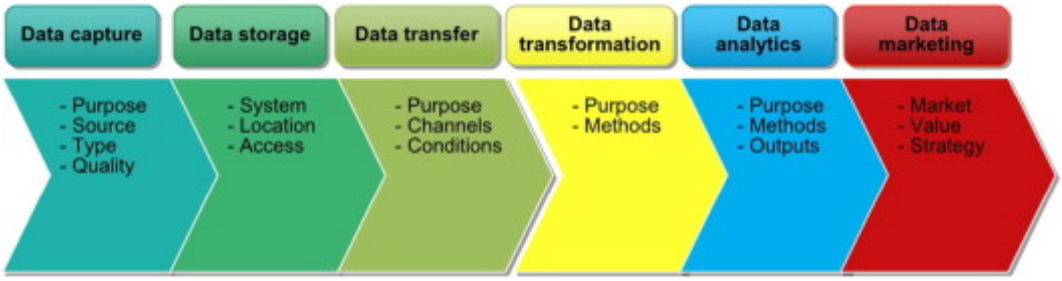
The other most important aspect is the use of digital agricultural extension through sensors to gather data points on everything from mapping soil moisture, weather patterns, soil nutrient levels, individual plant health and so on. The end purpose for the use of such sensors is to fill the 'data-gap' of the global south and provide data as a resource in order to build maps and predictive models of agricultural systems. Big data, data analytics and machine learning are, hence, being incorporated into agriculture through electronic tracing systems, electronic weather data, smartphone mapping and other remote sensing applications, all in order for AI and machine learning to be able to model such things as, when to plant the next season of crops, when to water, when to fertilize or predicting pest outbreaks.

[48] "$120 Million-Investment for CRISPR Technology From Bill Gates and Other 13 Investors." *CD Genomics*, October 16, 2018. https://www.cd-genomics.com/blog/120-million-investment-for-crispr-technology-from-bill-gates-and-other-13-investors/

This new type of data-reliant agriculture is oriented toward the implementation of precision agriculture, which is essentially a "data-generating agriculture" as it is based on observing and measuring crops, environment variables using sensors and satellites, to supposedly lower the use of chemical inputs. But in the end precision agriculture is a double edge sword, on the one hand it is just a way to placate critiques of the high costs of using chemical inputs, while on the other providing the means to reduce farmers to possible data sets to generate their artificial models. This in turn reduces the world's diversity to only an environment to improve predictive models through the complete disregard for (even the concept of) living systems.

Data mining from Farmers

Such experiments with data mapping are already underway. For example, in India, Digital Green, an initiative of the Gates Foundation is described as "a global development organization that empowers smallholder farmers to lift themselves out of poverty by harnessing the collective power of technology and grassroots-level partnerships."[49] It is an NGO that focuses on "training farmers to make and show short videos where they record their problems and share solutions". It was first conceived as a project in Microsoft Research India's Technology for Emerging Markets. It has received a funding of $1.3 million dollars from the Walmart foundation. South Asia Food and Nutrition Security Initiative (SAFANSI), a project of the NGO is funded by the World Bank. It received Rs 3 crore or $400,600 dollars from Global Impact Award from Google in 2013. The Bill and Melinda Gates Foundation has funded more than $10 million into this initiative.



Source: https://www.sciencedirect.com/science/article/pii/S0308521X16303754

This "data" from the farms and farmers is being collected without their knowledge or prior consent. Problematically, this "data" is also closely connected to farmers' personal information like the location of the farms, their yields and other sensitive information. Farmers also have little say as to what even happens to the data being collected. Bringing in questions of data sovereignty as the data being collected is more than likely to be developed into products that are then sold back to farmers as essential products for successful digital farming. In turn, the very institutions that are pushing for this new data-ag and its regulation are indirectly or directly in the hands of Gates Foundation. The most blatant example being the World Economic Forum's World Food Systems Summit (WFSS), to be hosted in 2021,

[49] "About Us." *Digital Green*. https://www.digitalgreen.org/about-us/

which is to be headed by former Rwandan Minister of Agriculture and president of Gates-funded AGRA (Alliance for a Green Revolution in Africa). In the concept paper of the summit there was no mention of agroecology, indigenous peoples or civil society, while it does specifically mention precision agriculture and genetic engineering as important for addressing future food security, while also expressing vocal support for the fourth industrial revolution around data.

For the countries where AgOne is looking to operate there is very little legislation, regulation or concrete trade agreements around digital data transfers, leaving countries in the global south with little capacity to handle this new influx of 'data resources' leaving them even more vulnerable to further predation by large corporations. Gates' digital agenda with AgOne will also serve to exacerbate this already stark power inequality through a centralization of all farming data out of the hands of farmers. This centralization also then leaves the door open for further biopiracy, centrally managing data that can only be accessed through paywalls, surveillance and further policing by big corporations of their product use and so on.

The pivotal example of these consequences being the biopiracy being carried out through the convergence of information technology and biotechnology by taking patents through "mapping" genomes and genome sequences[50]. While living seed needs to evolve "in situ", patents on genomes can be taken through access to seed "ex situ". This undermines farmers' rights as you don't need the permission from the farmers anymore once the genome has been digitally mapped.[51]

Making time an enemy: A Push for Deregulation

All of this is only possible through an active agenda of deregulation. Using the rhetoric of climate change as the cause for extreme urgency, according to Rodger Voorhies, president of Global Growth & Opportunity division, "Research and development takes years to get from the lab to the field, and while the Agricultural Development team funds the development of new tools and technologies designed to meet the needs of smallholder farmers, there were delays in translating these discoveries to affordable products". He added, "we didn't think that research was flowing down to the crops that matter most to smallholder farmers in a timeframe that could reach them."[52] But the only way this rush is possible for AgOne is through the agenda of Deregulation of Biosafety. As the initiative announcement states, its objective is to "get the products from the labs into the fields, faster and more massive than before". The objective of AgOne seems to be to fund these new innovative scientific discoveries with hopes of getting them through as quickly as possible to the point of commercialisation with as little testing, assessment and regulation as possible. One such example is of

[50] Lucchi, N. (2013). Understanding genetic information as a commons: From bioprospecting to personalized medicine. *International Journal of the Commons*, *7*(2), 313–338. DOI: http://doi.org/10.18352/ijc.399

[51] Masucci M., Un accordo per tutelare la biodiversità agricola, Terra Nuova, 16 February 2020, https://www.terranuova.it/Il-Mensile/Un-accordo-per-tutelare-la-biodiversita-agricola/

[52] Cheney, Catherine. "Exclusive: Gates Foundation Launches New Agriculture-Focused Nonprofit." *Devex*, January 21, 2020. https://www.devex.com/news/sponsored/exclusive-gates-foundation-launches-new-agriculture-focused-nonprofit-96384

CRISPR and gene editing where they tried to bypass regulation all together by claiming that gene editing is a non-GMO technology and is different from transgenic.

Building on Thousands of Years of Evolution of Thousands of Diverse Agroecological Knowledges and Cultures

There is an illusion that running faster on the chemical and poison cartel treadmill, now equipped with Artificial Intelligence and Robots will be more effective in producing more food and feeding the hungry. On the contrary, the tools and technologies of the poison cartel have brought the planet and the lives of farmers to the brink with climate havoc, species extinction, water crisis, farmer incomes collapsing to zero and food related diseases killing larger numbers of people.

In the end it appears that Gates' new AgOne initiative is the same wolf in different clothing, where he is attempting to push faster and harder for the whole world to adopt his version of the already failed Green Revolution with a new tech twist. A worldview which is completely disconnected from the realities of small farmers and their need for food system sovereignty.

As shown, the future of agriculture is based on biodiversity, seed sovereignty and agroecology, not on "Ag tech" or "Ag One". We need to rise up and look past the corporate narrative and look towards time tested indigenous knowledge and Agroecology to shape the future of Agriculture based on Biodiversity and Cultural Diversity. We need a rejuvenation of small farms, the real farms with real people who care for the land, who care for life, who care for the future and who produce diverse, healthy, fresh, ecological and real food for all.

THE CASE STUDY OF THE ICRISAT DIGITAL FARMING TOOLS

One such example of digitalization of agriculture comes through a collaboration between ICRISAT and Microsoft in India. Used as a case study by Feed the Future and USAID, ICRISAT is looking to develop four tech initiatives:

Figure 1 Summary of ICRISAT Digital Agriculture Interventions

DIGITAL AGRICULTURE INVESTMENT	PURPOSE OF THE TOOL	VALUE CHAIN STAGE
Sowing App and Intelligent Agricultural Systems Advisory Tool (ISAT)	To deliver targeted and timely SMS messages to farmers about sowing and other farm management practices	On-farm production
iHub	An incubator program and platform to catalyze technology innovations that can change the lives of farmers	Cross-cutting
Plantix	To provide extension officers with automated and targeted responses about diseases and pests through a mobile app	On-farm production
LeasyScan	To rapidly measure leaf surface area characteristics and water stress and accelerate the identification of promising new varieties	Planning
HarvestMaster	To record highly accurate measurements of grain weight and moisture characteristics for development of new varieties	Planning

Source: Manfre, Cristina, and Wesley Laytham. "Digitzing the Science of Discovery and the Science of Delivery: A Case Study of ICRISAT." India: USAID, 2018.

https://www.usaid.gov/sites/default/files/documents/15396/ICRISAT_Case_Study.pdf

The ICRISAT case study on Digital Agriculture shows what Gates Ag One has been preparing for. But one flawed assumption made by such initiatives and in particular Gates, is the continued use of 'yield', a failed measure which hides more than it reveals.

Navdanya's research has shown that industrial agriculture is inefficient, unproductive, creates dependency on corporations for eternal inputs, and dependency on global supply chains which impose uniformity on farms. We have shown that "yield" is an unscientific measure which does not reflect true biological productivity. It is a manipulated measure which promotes monocultures, and commodification.[1]

To highlight one , the Sowing App and the Intelligent Agricultural Systems Advisory Tool (ISAT) use predictive analytics, Cortana artificial intelligence, and machine learning from multiple weather, soil and crop data points to predict sowing times for farmers and provide them with a series of possible decisions. These programs are reliant on mining farmers data, while then portraying farmers as lacking in intelligence or skill. Farmers of forty centuries did not need an SMS through Microsoft software to know how to sow and farm. Not only is this denial of farmers knowledge and intelligence, it is creating a new dependency on an external input –data. The objective is clearly to undermine food sovereignty and food self-reliance and lock farmers into digital dependency. The ICISAT case study is a good example of how Gates is attempting to centralize the knowledge wealth and value created by farmers through turning all aspects of an agricultural environment into a data point. Especially since all the business generated by this digitalization partnership is diverted to Microsoft.

[1] Shiva, V and Shiva, K. 2018. The Future of our daily bread: Regeneration or Collapse. Navdanya International / Research foundation for science, technology and ecology, https://navdanyainternational.org/publications/the-future-of-our-daily-bread-regeneration-or-collapse/