

## Repurposing Policies and Public Support for Sustainable Agriculture: “Success Criteria” and Milestones

Discussion Paper April 2022

### Context

At COP26, over 140 countries [pledged](#) to strengthen shared efforts to “implement and, if necessary, redesign agricultural policies and programmes to incentivize sustainable agriculture, promote food security and benefit the environment”. The Glasgow Leaders’ Declaration acknowledges both the vital role that agriculture plays in providing nutritious, affordable food for a growing global population and the growing challenges that agricultural production and land-use change pose for climate change, soil degradation, water pollution and biodiversity loss. Indeed, in many cases public policies and public support exacerbate these risks, undermining the long-term sustainability of agricultural production, food and nutrition security and the rural economy.

The [Policy Action Agenda for Transition to Sustainable Food and Agriculture](#) – endorsed by 17 governments – identifies a range of actions that both state and non-state actors can take to repurpose public support to agriculture to incentivize and accelerate a shift to sustainable agrifood systems through a just rural transition, delivering triple wins for people, nature and climate (i.e., maximizing synergies across one or more of these domains while doing no harm). The Policy Action Agenda proposes a framework for how national governments can support food and agriculture to ensure that the world stays within planetary boundaries and meets minimum thresholds for socioeconomic development to provide a “safe and just space” for agriculture (Raworth 2017).

### Towards a Definition of Sustainable Agriculture

The Policy Action Agenda suggests principles to guide repurposing agriculture policies; it does not propose an exclusive definition of what ‘sustainable agriculture’ should look like. Definitions and interpretations of sustainable agriculture vary, but most converge around three pillars of sustainability: environmental soundness, economic viability, and social equity or inclusion across generations and geographies (FAO 2018, SARE 2021, Zhang 2021). The Policy Action Agenda’s focus on people, climate and nature broadly aligns with these three areas.

Each country will place emphasis on different aspects of sustainable agriculture, given their different biophysical, socioeconomic and political contexts, and precise indicators need to be developed for each context. Ultimately, however, building consensus around high-level criteria and translating these into quantifiable indicators that can be applied nationally and compared globally will be key to identify opportunities to share best practices, take domestic action and mobilize international support. In the short term, such indicators will rely on the data available to measure progress at the national level. In the longer term, indicators can become more aspirational as data gaps are filled.

## Purpose of this Discussion Paper

This discussion paper provides an initial framework to build consensus on criteria and milestones that can be used to measure progress in the transition to sustainable agriculture in a globally comparative way. While recognizing that a broader food systems approach can provide additional levers for promoting sustainability, this paper focuses on production and land-use change, which together contribute over 70 per cent of food systems' emissions (Crippa et al., 2021).

## Draft “Success Criteria” for a Transition to Sustainable Agriculture

*Caveat: These are not an exclusive set of standards, but indicators of what good outcomes may look like to mobilize action. These will continue to evolve and develop in light of discussions and increasing data availability.*

The starting point for identifying relevant criteria are existing international agreements and frameworks, which reflect a wealth of scientific expertise and knowledge, collective ambition and political agreement between signatories.<sup>1</sup> The Policy Action Agenda aims to contribute towards accelerating collective global momentum to implement these agreements. The main agreements include the SDGs (UNEP 2017, UN 2022), the FAO's principles for sustainable food and agriculture (FAO 2014), and the three Rio Environmental Conventions and their special reports.<sup>2</sup>

This paper proposes three high-level criteria for success organized around the categories of people, climate and nature and focuses on performance and outcomes rather than activities.<sup>3</sup> Each category contains three sub-criteria, indicating the core measures of sustainability. Proposed indicators for measuring progress are based (as far as possible) on two principles: indicators **already agreed** at global level through **international agreements** (particularly the SDGs and Rio Conventions) and indicators for which **globally comparative data exists** for reporting. While these criteria do not exhaustively reflect all aspects of sustainable agriculture, they provide a starting point for action at national and global level.

Actions that affect success in one category can also affect success in another category – both positively and negatively.<sup>4</sup> There may also be trade-offs between desired outcomes at a farm level and those at a landscape level, or even at a global level.

At a minimum, the Policy Action Agenda would want policies and programmes for ‘sustainable agriculture’ to show progress against indicators for two of the success criteria and ‘do no harm’ against indicators for the other. Issues of gender, IPLC rights and inequality more generally need to be measured within proposed indicators.

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<sup>1</sup> Other points of reference include non-State frameworks developed, e.g., the Race to Resilience Metrics Framework, the Global Farm Metric and the Sustainable Agriculture Matrix (Zheng et al., 2021).

<sup>2</sup> The UNFCCC, UNCCD and the CBD, and related documents, such as the Global Biodiversity Framework.

<sup>3</sup> In line with FAO's Sustainability Assessment of Food and Agriculture Systems (SAFA) and SDG indicators.

<sup>4</sup> For example, actions to optimise fertilizer application will help to reduce GHG emissions (Climate) and simultaneously improve water and air quality (Nature). Conversely, actions to improve productivity (People) may lead to trade-offs with success in climate and nature. There may be non-linear relationships, feedback loops, rebound effects, delayed responses and cumulative effects within and between agri-food and agricultural production systems that need to be taken into account (TEEB 2018).

## **Success Criteria 1: Agricultural production drives inclusive economic growth: reducing poverty, providing people with resilient livelihoods, and increasing food and nutrition security.**

Sustainable agriculture improves the **economic viability** of the agricultural sector by enhancing agricultural productivity and profitability, improving farmers' ability to manage risk, and **benefiting all of society** with enhanced food supply system resilience, improved nutrition and health and inclusive economic growth.

### **1.1 Support to agriculture enhances food supply system resilience.**

Sustainable agriculture is fundamental for the resilience of agricultural systems, i.e., the capacity of agricultural systems to adapt to external disruptions and to provide a stable, affordable food supply and income from farming.

Possible indicators<sup>5</sup> to measure progress include the **crop production diversity H index**<sup>6</sup> and **variation in crop yields and animal productivity**.<sup>7</sup> The Race to Resilience Metrics Framework (Race to Resilience 2021) uses the number of hectares of land restored or protected as a metric for non-state actors.

### **1.2 Support to agriculture improves populations' health and nutrition, particularly for low-income people (including farmers themselves).**

While domestic agricultural production is not the only determinant of people's health and nutrition, the availability of healthy, nutritious food for consumption in national markets that is affordable by low-income population is key to reducing food and nutrition insecurity.

Multiple indicators exist to measure progress in health and nutrition. We propose two SDG indicators for which data exist: the **prevalence of under-nourishment** (SDG indicator 2.1.1 – a measure of the first condition for achieving food and nutrition security) and the **prevalence of moderate or severe food insecurity in the population** (indicator 2.1.2) based on the Food Insecurity Experience Scale (also in indicator 2.4.1).

### **1.3 Support to agriculture boosts agricultural productivity and incomes.**

Adopting technologies and production practices that result in more output from the same – or fewer – inputs, such as land, pesticides or fertilizers, gives producers the best chance of meeting current and

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<sup>5</sup> SDG indicators for resilience tend to be related to disasters (e.g., indicators 1.5.1/11.5.1/13.1.1 and 1.5.2/11.5.3) or measure activities, such as risk mitigation measures (see sub-indicators for SDG Indicator 2.4.1).

<sup>6</sup> An indicator of crop diversity, which has the potential to improve resilience through, e.g., increasing the ability to suppress pest outbreaks and reducing pathogen transmission; buffering impacts on crop production due to increased climate variability and/or extreme events. While this is not listed as an SDG indicator, it contributes to SDG indicator 2.4.1's sub-indicator on resilience.

<sup>7</sup> For example, calving rates.

future food and non-food needs while improving economic welfare, strengthening food security and conserving environmental resources.

The most comprehensive indicator of agricultural productivity is Total Factor Productivity, which measures the efficiency with which resources – land, labour, machinery, feed, fertilizers and livestock – are used to produce outputs. However, the main indicator used in the SDGs and other frameworks is **agricultural labour productivity** (indicator 2.3.1), measured as volume of production per labour unit,<sup>8</sup> or the **wage rate in agriculture** (sub-indicator in indicator 2.4.1). Other possible indicators include **average income of small-scale food producers, by sex and indigenous status** (indicator 2.3.2), and **proportion of rural population living below the international and national poverty line** (SDG indicators 1.1.1 and 1.2.1).

## **Success Criteria 2: Agricultural production contributes to putting the planet on the pathway to 1.5 degrees**

Agriculture and food systems need to play their full role in keeping the Paris Agreement’s 1.5°C goal in sight and meeting SDG 13 on climate action, reducing emissions of greenhouse gases that disrupt the global climate. A pathway to 1.5°C, with a low risk of overshoot, requires eliminating CO<sub>2</sub> emissions and sequestering 2.3 GtCO<sub>2</sub> annually, cutting methane emissions by 50-60 per cent, and reducing nitrous oxide emissions by 20-30 per cent (Ahmed 2020). To this end, sustainable agriculture needs to **adopt climate-smart and regenerative agricultural approaches** to production and livestock management, **minimize land-use change** and **store carbon** in farm and rangelands.

### **2.1 Support to agriculture substantially reduces greenhouse gas (GHG) emissions from agricultural production.**

Agricultural production accounts for 14 per cent of total GHG emissions (Searchinger 2019). The Koronivia Joint Work on Agriculture at COP26 agreed that improved nutrient use, manure management and livestock management systems “lie at the core of climate-resilient, sustainable food production systems” (FAO 2021). In croplands, the main driver of nitrous oxide emissions is over-fertilization, and approximately 50 per cent of nitrogen applied to agricultural land is not taken up by the crop (Zhang 2017 in IPCC 2019). Livestock production has been responsible for 33 per cent of total global methane emissions and 66 per cent of agricultural methane emissions since 2000. Flooded rice paddies emit around 20 per cent of total man-made emissions of methane (ibid.).

Possible indicators to measure progress include **total greenhouse gas emissions** from agriculture activities **overall** (SDG indicator 13.2.2) **and per harvested area**, and **total greenhouse gas emissions** from livestock production **overall**, and **per hectare of managed pastures and grazing lands**. More specific indicators could include surplus fertilizer application/nutrient efficiency (a sub-indicator of SDG indicator of 2.4.1 is fertilizer pollution risk, represented by excess nitrogen and phosphorus) and feed and input efficiency for livestock. National inventories under the UNFCCC could be used as a source of data on emissions and removals.

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<sup>8</sup> An alternative measure is agricultural GDP per agricultural worker.

## 2.2 Support to agriculture significantly reduces GHG emissions from land-use change.

The agriculture sector generates GHG emissions through land-use change that, combined with land-use change from other sources, accounts for 10 per cent of global GHG emissions; in 2001-15, agricultural expansion resulted in 123 million hectares of forest loss (Curtis 2018). Sustainable agriculture requires minimizing the depletion of existing carbon stocks by avoiding deforestation and forest degradation and loss and degeneration of grasslands, wetlands and peatlands.

A possible indicator to track progress on this is lost forested area due to agricultural activities (ha deforested/ha cropland area/year).<sup>9</sup> Wetland or peatland loss can be measured by tracking the percentage loss of the number of wetlands/peatlands and wetland/peatland area against a baseline.<sup>10</sup>

## 2.3 Support to agriculture increases the amount of carbon stored in farm and rangeland.

Carbon dioxide removal and storage are gaining increased attention as a tool in climate mitigation. Methods include afforestation or reforestation, bioenergy with carbon capture and storage, and agricultural techniques that increase soil carbon storage, which contribute to SDG targets 2.4 and 15.3. Soil carbon sequestration in croplands and grasslands is one of the options with highest potential for removing GHG emissions from the atmosphere (IPCC 2019).

Possible indicators include **rates of reforestation, afforestation or natural forest regeneration**, measured **per hectare of deforested or degraded land**. However, such indicators would need to be combined with biodiversity indicators to prevent skewing incentives towards monoculture plantations. **Soil organic carbon** would provide a measure of carbon sequestration, while also providing an indicator of broader soil health. However, there are challenges with data availability and methodologies: global soil organic carbon stocks estimates do exist, but there is high variability in reported values among authors, caused by the diversity of data sources and methodologies (FAO 2019).<sup>11</sup>

## Success Criteria 3: Farming is done in a way that protects and enhances natural resources/ecosystems.

Sustainable agriculture avoids inefficient use of water resources, further loss of biodiversity from converting natural habitat to agricultural land, and losses in soil health and fertility. It also offers opportunities to enhance existing ecosystems to restore watersheds, improve soil health and enrich biodiversity, balancing conservation, sustainable use, and the fair and equitable sharing of benefits from the utilization of genetic resources (IPBES 2019).

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<sup>9</sup> Suggested by the Sustainable Agriculture Matrix to report against SDG indicator 2.4.1.

<sup>10</sup> Reliable estimates of wetland loss require robust wetland inventories and effective monitoring programmes; data availability can be enhanced using Earth Observation data but will need to be assessed in more detail for each country.

<sup>11</sup> Funding may be needed to better and more accurately monitor or estimate additional soil carbon sequestration with non-contact methods or soil models, since traditional methods involve direct soil sampling and may be cumbersome and expensive (Ecofys, 2017).

### 3.1 Support to agriculture enhances soil health.

Soil health is critical to the resilience of agriculture. Healthy soil provides essential nutrients, water, oxygen and support to plants, hosting a diverse community of organisms that improve the structure of the soil, recycle essential nutrients and help to control weeds, plant pests and diseases, and contributes to mitigating climate change by maintaining or increasing soil organic carbon.

One possible indicator of soil health is the **rate of soil erosion**.<sup>12</sup> Soil erosion from agricultural fields is estimated to be 10 to 20 times (no tillage) to more than 100 times (conventional tillage) higher than the soil formation rate (IPCC 2019). While this indicator does not reflect all concerns in soil health, it is currently the only indicator with at least basic estimates available with global coverage, by country and for multiple years. As more data become available that is possible to aggregate at national level, other indicators, such as **soil structure and biodiversity** and broader indicators of soil degradation under SDG indicator 2.4.1 could be introduced (see also [Global Farm Metric](#)).

### 3.2 Support to agriculture improves water use and quality.

The use of – and competition for – increasingly scarce water resources has intensified dramatically over the past decades, reaching a point where water shortages, water quality degradation and aquatic ecosystem destruction threaten prospects for livelihoods and growth. Climate change will lead to more frequent and intense weather extreme events like droughts and floods, with devastating impacts on food production systems. Sound water management is essential for building societal resilience against such increased risks; agriculture – as the single largest user of fresh water globally – is pivotal.

SDG 6 aims to improve water quality, increase the efficiency of water use, and protect and restore water-related ecosystems. Possible indicators to monitor progress in these areas include the **proportion of bodies of water with good ambient water quality** (indicator 6.3.2), change in gross domestic product (GDP) divided by total fresh water withdrawals to measure **water-use efficiency** over time (indicator 6.4.1), and **percentage of total land area which is defined as wetland** (indicator 6.6.1). Simple indicators include the total volume of water used and the annual irrigation water/total volume of water used.

### 3.3 Support to agriculture increases biodiversity of farms and rangelands.

Sustainable agriculture both promotes and is enhanced by biodiversity. Maintaining this biodiversity is essential for the sustainable production of food and other agricultural products and the benefits these provide to humanity, including food security, nutrition and livelihoods. Biodiversity directly supports agriculture systems by helping to ensure soil fertility, pollination and pest control. The ecologically unsustainable consumption of water, use, and run-off of pesticides and excess fertilizers, and the conversion of natural habitats to uniform monocultures have major negative impacts on biodiversity.

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<sup>12</sup> Article 1 of the UN Convention to Combat Desertification (UNCCD), ratified in March 2020 by 197 countries, identifies soil erosion as a primary cause of land degradation. The IPCC Special Report on Land Use (2019) identifies soil erosion control as a key land management option.

The **Post-2020 Global Biodiversity Framework** (Biodiversity Indicator Partnership 2022) and other initiatives, such as GEO-Bon's **Essential Biodiversity Variables** (EBVs)<sup>13</sup> or the **multidimensional biodiversity index for national application**,<sup>14</sup> aim to derive coordinated measurements critical for detecting and reporting biodiversity change and assessing progress towards the SDGs and Aichi Biodiversity Targets as well as National Biodiversity Strategies and Action Plans (NBSAPs). These are focused on both species and ecosystems. Since EBVs were first defined, there have been significant advances in consensus around the framework to help report against progress.

Possible indicators include: the **Biodiversity Habitat Index** and the **Red List Index (pollinating species)**, both applied to agricultural production areas.

However, gaps remain around globally comparable data to allow that reporting to take place (Perino 2021). The Policy Action Agenda could identify priority data gaps to be filled so that biodiversity indicators can take their place alongside other measures of sustainable agriculture.

## **Process and milestones to Repurpose policies and public support for sustainable agriculture and food systems**

*Caveat: Countries are at different stages within policy reform processes linked to international, regional and national frameworks (SDGs, CAADP, NDCs, National Agricultural Development Strategies, etc.) and are undertaking a wide range of policy efforts concurrently. Phases in the repurposing process – Agenda Setting, Design, Adoption, Implementation, Evaluation & Reform – are shown in sequence but not meant to imply the process is always linear.*

This Discussion Paper outlines a proposed approach to redirecting policies and support to agriculture in the Policy Dialogue. It suggests steps that governments can take – in consultation with different stakeholders – to:

- **Agree on a common framework** for measuring progress and extending commitments, selecting indicators and sub-indicators that are most relevant for each national context.
- **Design national-level approaches** for repurposing support to agricultural production, identifying sequencing of reforms and mechanisms for compensation.
- **Adjust national policies and processes** to integrate repurposing priorities.
- **Implement adapted policies and processes**, piloting proposed changes in lead regions and scaling up policies nationally based on lessons learned.
- **Evaluate policies** to assess progress against agreed indicators and commitments.

This process needs to be underpinned by a clear strategy for communicating the nature, scale and timing of reforms to different stakeholders, and an adaptive process that allows policies and processes to be recalibrated to consider new evidence and developments.

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<sup>13</sup> Developed by the Group on Earth Observations Biodiversity Observation Network (GEO BON).

<sup>14</sup> UNEP-WCMC initiative.

Table 1 presents a proposed timeline and milestones for each of these steps. The process is predicted to start in the run-up to COP27, with the first phase lasting 12 months; subsequent milestones are aligned with future COP (United Nations Framework Convention on Climate Change Conference of the Parties) negotiations to embed the Policy Action Agenda within formal international processes. The overall process aims to initiate scaled-up policy reform after five years to allow countries to stay within the short window available to meet 2030 targets for the SDGs and Environmental Conventions.



**Table 1: Indicative Process and Milestones for Repurposing Public Support to Food and Agriculture**

	After 12 months (COP28) 	After 24 months (COP29) 	After 36 months (COP30) 	After 5 years (COP32)
<b>Agenda Setting</b>	<ul style="list-style-type: none"> <li>Identify the support already provided and estimate its impact.</li> <li>Hold multi-stakeholder consultations that identify priorities, trade-offs and barriers to reform, and adapt global indicators to national contexts, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Establish repurposing priorities that deliver progress on existing policy commitments (NDCs, SDGs, etc.)</li> <li>Identify key indicators and sub-indicators for each country to measure progress against success criteria</li> <li>Identify agreed trade-offs</li> </ul>		
<b>Design</b>		<ul style="list-style-type: none"> <li>Draw on feedback from the multi-stakeholder consultations to design the approach for repurposing agricultural producer support – including sequencing and mechanism for compensation – and estimate its future impact</li> <li>Establish whole-of-government working group that iteratively refines – and buys into – repurposing priorities</li> <li>Assess institutional and technical capacity for policy changes</li> </ul>		
<b>Adoption</b>		<ul style="list-style-type: none"> <li>Relevant legal authorities review, refine and approve repurposing policies</li> <li>Integrate repurposing priorities into existing policy frameworks and processes</li> </ul>		
<b>Implementation</b>			<ul style="list-style-type: none"> <li>Pilot policy changes with key stakeholders (e.g., traders, producer unions)</li> <li>Identify 'lead' regions who helped drive early progress at regional scale</li> </ul>	<ul style="list-style-type: none"> <li>Scale policies nationally using a stepwise approach</li> <li>Communicate early progress to stakeholders first consulted during Agenda Setting period</li> <li>Recalibrate policies based on evaluation of pilot phases</li> </ul>
<b>Evaluation</b>	<ul style="list-style-type: none"> <li>Agree and establish evaluation framework in line with criteria for success</li> </ul>		<ul style="list-style-type: none"> <li>Test evaluation framework</li> </ul>	<ul style="list-style-type: none"> <li>Quantify contribution of policy changes to existing policy commitments</li> </ul>
<p>Note: See annex D for technical guidance on estimating, identifying and designing public agricultural support</p>				

Design, implementation, adaptation of *strategic communications strategy* (informing stakeholders, correcting negative biases in media, etc.) 

## Bibliography

Ahmed, J., E. Almeida, D. Aminetzah, N. Denis, K. Henderson, J. Katz, H. Kitchel, and P. Mannion. 2020. *Agriculture and Climate Change. Reducing Emissions*. McKinsey and Company.

Biodiversity Indicator Partnership. 2022. "www.bipindicators.net." Accessed April 13, 2022. [https://www.bipindicators.net/system/resources/files/000/002/291/original/Cross\\_mapping\\_4pp\\_A3\\_WEB.pdf?1527060479](https://www.bipindicators.net/system/resources/files/000/002/291/original/Cross_mapping_4pp_A3_WEB.pdf?1527060479)

Curtis, P.G., Slay, C.M., Harris, N., Tyukavina, A. and Hansen, M.C. 2018. "Classifying drivers of global forest loss." *Science Vol 361, Issue 6407* (Science) 1108-1111.

FAO. 2021. "Agreed conclusions on the six topics of the Koronivia Joint Work on Agriculture roadmap." Accessed April 13, 2022. <https://www.fao.org/3/cb7923en/cb7923en.pdf>

FAO. 2014. "Building a common vision for sustainable food and agriculture: principles and approaches." <https://www.fao.org/3/i3940e/i3940e.pdf>

FAO. 2019. Measuring and modelling soil carbon stocks and stock changes in livestock production systems: Guidelines for assessment (Version 1). Rome: Livestock Environmental Assessment and Performance (LEAP) Partnership.

FAO. 2018. Transforming Food and Agriculture to Achieve the SDGs: 20 interconnected actions to guide decision-makers. Rome: FAO.

IPBES. 2019. Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. Bonn: IPBES secretariat.

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. IPCC. <https://www.ipcc.ch/site/assets/uploads/2019/11/SRCCL-Full-Report-Compiled-191128.pdf>

Perino, et al. 2021. "Biodiversity post-2020: Closing the gap between global targets and national-level implementation." *Conservation Letters*.

Race to Resilience. 2021. *Race to Resilience Metrics Framework*. Center for Climate and Resilience Research.

Raworth, Kate. 2017. *Doughnut Economics: Seven Ways to Think Like a 21<sup>st</sup>-Century Economist*. Random House Business.

SARE. 2021. "What is Sustainable Agriculture? A SARE Sampler of Sustainable Practices." <https://www.sare.org/wp-content/uploads/What-is-Sustainable-Agriculture.pdf>

Searchinger, T. Waite, R., Hanson, C., Ranganathan, J. and Matthews, E. 2019. *World Resources Report: Creating a Sustainable Food Future*. WRI.

TEEB. 2018. Measuring what matters in agriculture and food systems: a synthesis of the results and recommendations of TEEB for Agriculture and Food's Scientific and Economic Foundations report. Geneva: UN Environment.

UN. 2022. <https://sdgs.un.org/goals>

UNEP. 2017. "SUSTAINABLE DEVELOPMENT GOALS (SDGS) IN RELATION TO ENVIRONMENTAL ISSUES." <https://wedocs.unep.org/bitstream/handle/20.500.11822/27284/SDGs%20related%20to%20Environment%2024.01.17.pdf?sequence=2&isAllowed=y>

Zhang, B et al. 2017. "Global manure nitrogen production and application in cropland during 1860-2014: a 5 arcmin gridded global dataset for Earth system modeling." *Earth System Science Data*, 9(2) 667-678.

Zhang, X. Yao, G. Vishwakarma, S. ..., Musumba, M., Heyman, A. and Davidson, E. 2021. "Quantitative assessment of agricultural sustainability reveals divergent priorities among nations." *One Earth* 1262-1277.

## **Annex A: Policy Action Agenda**

Please see [here](#).

## Annex B: Country Case Studies

**Brazil's Low-Carbon Agriculture Plan**, together with other plans, helped **reduce deforestation by 44 per cent over a 15-year period (2005-2020)**. The Plan includes a fund that provided low-interest loans for farmers who implement sustainable agricultural practices such as no-till farming, restoration of degraded pastures, integration of crops, livestock and forests, planting of commercial forest and treatment of animal wastes.<sup>15</sup>

**Costa Rica has pioneered an incentives-based conservation approach referred to as Payments for Ecosystems Services**. The payment transfers to farmers are conditioned on improvements in ecosystem services (such as clean water, healthy soils or increased biodiversity). The scheme has been credited with reducing the rate of deforestation from one of the world's highest to net negative deforestation by the start of the 2000s.<sup>16</sup>

**Malawi improved the efficiency of its input subsidy programmes**, freeing up public resources for public goods such as irrigation, agricultural research and technology transfer, and social protection programmes. Efficiency-enhancing reforms include fixed prices for delivering subsidized fertilizers, increased farmer contribution and the involvement of the private sector in importing and selling subsidized fertilizers.

**India is improving fertilizer efficiency for GHG mitigation and water quality improvement**. Fertilizers account for 20 per cent of agricultural emissions in India and their subsidization have reached as much as US\$15 billion per annum. In 2015, to mitigate these emissions and realize fiscal savings, the Indian government began requiring 75 per cent of urea (a nitrogen fertilizer) to be sold with a coating of neem oil, which has the potential to improve nitrogen use efficiency and potentially boost crop yields. Although evaluation of the effect of this policy on GHG emissions and water quality is ongoing, it is a promising initiative, given its cost-effectiveness and its support by Prime Minister Narendra Modi.<sup>17</sup>

**Switzerland phased out direct payments for livestock and phased in direct payments for biodiversity**. 60 per cent of the country's habitats are considered to have 'threatened' or 'near threatened' status, and 36 per cent of its wild species are endangered. Research indicates the transition from livestock payments to biodiversity payments – which included transition support for livestock farmers – policy successfully expanded biodiversity, as measured by acreage.<sup>18</sup>

**Vietnam leveraged a credit scheme to raise coffee farmer incomes and encourage more sustainable farming practices**. To access the credit, coffee farmers, who needed the credit to finance the replanting of ageing coffee plants, were required to participate in training sessions on environmentally friendly

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<sup>15</sup> Ibid.

<sup>16</sup> Ibid.

<sup>17</sup> The Case for Repurposing Public Support to Agriculture" (Just Rural Transition, 2021). Accessible at: [https://justruraltransition.org/wp-content/uploads/sites/12/2021/05/JRT-Repurposing\\_Policy\\_Brief.pdf](https://justruraltransition.org/wp-content/uploads/sites/12/2021/05/JRT-Repurposing_Policy_Brief.pdf).

<sup>18</sup> Ibid.

production methods.<sup>19</sup> Participating farmers saw their incomes increase by 23 per cent compared to earlier years.

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<sup>19</sup> Ibid.

## Annex C: Summary of Recent Evidence

Repurposing Agricultural Policies and Support: Options to Transform Agriculture and Food Systems to Better Serve the Health of People, Economies, and the Planet.<sup>20</sup>

- Current support for agriculture delivers low value for money as a way of helping farmers; for every dollar of public support, the return to farmers is just 35 cents. Domestic support to producers costs around 14 per cent of agricultural value added but yields an increase in real value added of only 5 per cent.
- Policy conditionality tying support to the adoption of climate-friendly but lower-yielding farm practices could potentially reduce emissions, but would entail trade-offs for people, nature and economic prosperity with lower agricultural production, higher poverty, higher agricultural land use and an increase in the cost of healthy diets.
- Recent simulations suggest investment in green innovations designed to lower emissions and raise productivity respectively by 30 per cent could produce enormous gains for people, the planet and the global economy. These gains would reduce emissions from agricultural and land use by 40 per cent, return 105 million hectares of agricultural land to natural habitats, and substantially increase nutrition, poverty reduction and agriculture-led economic transformation.

A Multi-Billion-Dollar Opportunity: Repurposing Agricultural Support to Transform Food Systems.<sup>21</sup>

- Emission-intensive and unhealthy commodities receive the most support from governments. Unhealthy products like sugar and emission-intensive commodities (e.g., beef, milk and rice) receive the most support worldwide, despite the potentially negative impacts on health as well as on climate change adaptation and mitigation, and the (relative) disincentives this support creates towards producing healthier and more nutritious foods, such as fruits and vegetables
- Recent models demonstrate a clear need to repurpose rather than eliminate public support to agriculture. Even though eliminating agricultural fiscal subsidies would cut CO<sub>2</sub> emissions by an estimated 11.3 million tonnes by 2030, agricultural production would be reduced, shrinking farm incomes and raising food prices, thereby increasing the prevalence of under-nourishment.
- A transparent, multi-stakeholder approach is integral to the repurposing process. To best judge how negative short-term impacts and trade-offs arising from repurposing processes can be mitigated (especially for vulnerable groups), policymakers need to understand the perspectives, needs and desires of stakeholders across the agrifood value chain. Further, it is crucial to communicate that reforming agricultural policies is not about taking away support from farmers,

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<sup>20</sup> World Bank, IFPRI (2022):

<https://openknowledge.worldbank.org/bitstream/handle/10986/36875/P17064300a6dea0db09c8b0cf6a1dfe8b8a.pdf?sequence=1&isAllowed=y>

<sup>21</sup> FAO, UNDP, UNEP (2021): <https://www.unep.org/resources/repurposing-agricultural-support-transform-food-systems>

but about repurposing it so that it rewards good practices rather than perpetuating practices that threaten food systems stability, farmers' welfare, and the environment.

*Financing Nature: Closing the Global Biodiversity Financing Gap*<sup>22</sup>

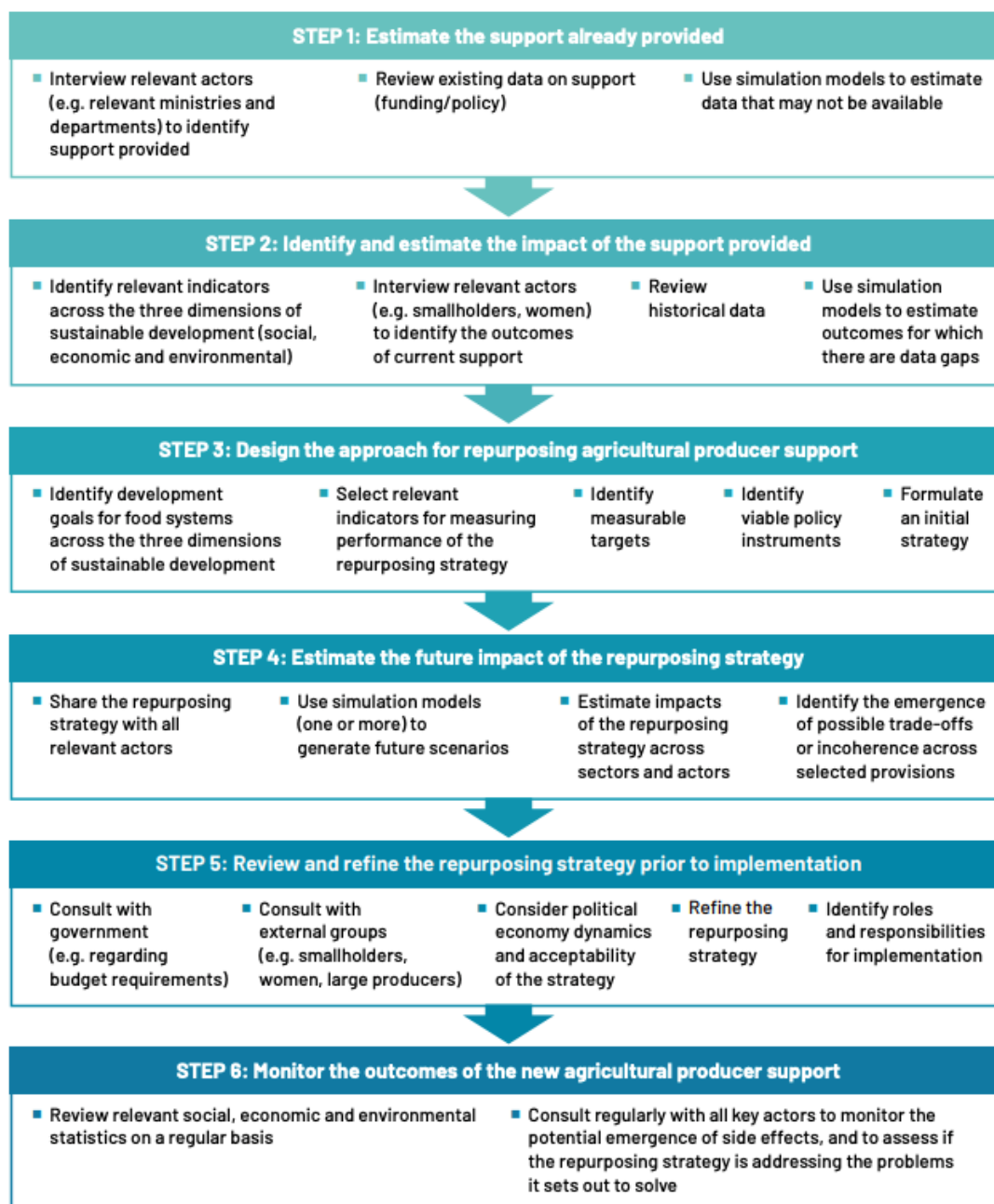
- The scale of agriculture, forestry and fishery subsidies that negatively affect biodiversity conservation is enormous, totalling US\$542 billion per year. This figure does not even include fossil fuel subsidies.
- The biodiversity financing gap – the difference between the amount currently provided and the amount needed – is between US\$598 billion and US\$824 billion per year. Both the public and private sectors have a role to play in closing this gap.

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<sup>22</sup> Paulson Institute, The Nature Conservancy, Cornell Atkinson Center for Sustainability (2020): [https://www.paulsoninstitute.org/wp-content/uploads/2020/10/Updated-10.23.20-FINANCING-NATURE\\_Exec.-Summary\\_Final-with-endorsements\\_101420.pdf](https://www.paulsoninstitute.org/wp-content/uploads/2020/10/Updated-10.23.20-FINANCING-NATURE_Exec.-Summary_Final-with-endorsements_101420.pdf)



## Annex D: Six Steps for Repurposing and Reforming Agricultural Producer Support



Source: A Multi-Billion-Dollar Opportunity: Repurposing Agricultural Support to Transform Food Systems.<sup>23</sup>

<sup>23</sup> FAO, UNDP, UNEP (2021): <https://www.unep.org/resources/repurposing-agricultural-support-transform-food-systems>