



**Updated Submission by the Food and Agriculture Organization of the United Nations (FAO)
To the United Nations Framework Convention on Climate Change (UNFCCC)
In relation to the First Global Stocktake**

In response to the call for submissions by the Chairs of the Subsidiary Bodies under the UNFCCC, FAO is pleased to share its updated contribution to the first Global Stocktake (GST) pursuant to decision 19/CMA.1, paragraphs 19, 36 and 37¹. The submission is responding to the guiding questions by the Chairs of the Subsidiary Bodies.

Noting that the [previous submission made on 13 April 2022](#)² still represents views by FAO, the following specific sections provide complementary inputs building upon the first submission. According to the latest IPCC report (2022), more than 3.3 billion people – half of the world's population – are considered “highly vulnerable” to the impacts of the climate crisis. The IPCC report also warns that even a temporary breach of 1.5 °C would be fatal for millions. Climate change results in increasing temperatures, changing precipitation patterns, and greater frequency and intensity of some extreme events such as droughts and floods. These impacts constitute a threat for all sectors, but especially for agrifood systems and the livelihoods of those who depend on them. Five hundred million small farms that depend on functioning ecosystems for their livelihoods produce over 80 percent of the food consumed in a large part of the developing world. It is estimated that each degree-Celsius increase in global mean temperature could reduce global wheat yields by about 6 per cent, and maize by about 7 per cent. Also, there is a need to produce about 50 per cent more food by 2050 to feed the increasing global population. Further, heat stress will speed up the development of annual fruits and vegetables, potentially resulting in yield losses, impaired product quality, and increasing food loss and waste.

To address these challenges, FAO works relentlessly to collect data, information, and knowledge on the impacts of climate change on agrifood systems, and to inform Members globally about the latest science. Building on the recent outcomes from the 58th session of the Subsidiary Bodies (SB 58) and the 27th session of the Conference of Parties (COP27), FAO acknowledges this urgency to act by supporting and contributing to the UNFCCC processes and relevant initiatives, particularly the Food and Agriculture for Sustainable Transformation (FAST), the Initiative on Climate Action and Nutrition (ICAN) and the Action on Water, Adaptation and Resilience (AWARE) that will help FAO to deliver on the Programme Priority Area on climate change, as well as the Strategy on Climate Change and other related strategies, including the Science and Innovation strategy.

FAO Strategy on Climate Change 2022-2031

To ensure alignment of its contribution to the implementation of the Paris Agreement, FAO has developed a new [Strategy on Climate Change](#) (SCC) 2022-2031, which was endorsed by the FAO Council in June 2022. The strategy drives the implementation of the FAO's Strategic Framework 2022-2031 and guides FAO in providing strengthened support to Members in their ambition to address climate change in agrifood systems. The strategy aims to address a broad range of interlinked challenges, including the loss of biodiversity, desertification, land and environmental degradation, the need for accessible, renewable energy, and food and water security. Its guiding principles include empowering and engaging farmers, livestock keepers,

¹ <https://unfccc.int/documents/193408>

² <https://unfccc.int/documents/461859>

fishers, aquaculturists, Indigenous Peoples and forest-dependent people, embracing both traditional good practices and innovations, and building on science-based evidence.

While implementing the SCC, FAO aims to contribute, to the extent possible, in a harmonized manner, to the implementation of the Paris Agreement, the 2030 Agenda and the Sendai Framework on Disaster Risk Reduction. For that, monitoring and evaluation of the SCC implementation will include specific targets and indicators that are disaggregated to capture: i) overall progress in achieving the Global Goal on Adaptation, ii) actions taken to increase adaptation capacity and foster climate resilience, and iii) support to needs-based adaptation efforts and interventions implemented by FAO and its partners in developing countries.

FAO Strategy on Science and Innovation

Along with SCC, the FAO's first ever strategy on Science and Innovation was also adopted in June 2022. This Strategy promotes a holistic approach to minimize trade-offs using science, technologies and innovation, and enabling policies for low- and middle-income countries, small-scale producers, women, youth and Indigenous Peoples.

Adaptation

1. *What is the collective progress made towards achieving Article 2.1(b) of the Paris Agreement, in the light of equity and the best available science?*
 2. *What is the overall progress in achieving the global goal on adaptation, in the context of climate impacts, risks and vulnerabilities (Article 7.14 (d) Paris Agreement)?*
 3. *What actions have been taken to increase the ability to adapt to the adverse impacts of climate change and foster the climate resilience of people, livelihoods, and ecosystem? To what extent have national adaptation plans and related efforts contributed to these actions (Decision 19/CMA.1, paragraph 36(c))?*
 4. *What adaptation efforts have developing countries undertaken to address their adaptation needs (Article 7.14 (a) Paris Agreement, Decision 11/CMA.1, paragraph 9)?*
 5. *How adequate and effective are current adaptation efforts and support provided for adaptation (Article 7.14 (c) Paris Agreement)?*
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FAO confirms its commitment to contribute to the global discussion on metrics and approaches to review and aggregate information on the progress towards the Global Goal on Adaptation (GGA) as well as provide country guidance for reporting on adaptation in the agriculture and land use sectors under the Modalities, Procedures and Guidelines for the Transparency Framework for Action and Support³. In line with this commitment, FAO is drawing on its multidisciplinary knowledge and experience to propose a coherent indicator framework that can be used to effectively monitor progress towards the targets that countries have set in their Nationally Determined Contribution (NDCs) and National Adaptation Plans (NAPs).

FAO recognizes that in order to contribute to the Global Stocktake and assess collective progress on adaptation, the approach to monitoring and evaluation (M&E) of adaptation efforts would need to shift from assessing the progress in terms of outputs and outcomes to a deeper substantive analysis of the impact on adaptive capacity, resilience and vulnerability reduction. While countries play a key role in monitoring and assessing the achievements of their national adaptation goals, and communicate this information through their policies, plans and strategies, including NDCs, NAPs, Adaptation Communications (ACs), National Communications (NCs) and the upcoming Biennial Transparency Reports (BTRs), the Global Stocktake offers a compelling opportunity to build on the country level strengths, and reinforce the use of high quality data to provide valuable information on the global progress towards GGA.

³ https://unfccc.int/sites/default/files/resource/CMA2018_03a02E.pdf#page=18

FAO has supported over 40 countries working on NAPs in agriculture and agrifood systems.⁴ Through this support, countries launched the NAP processes, which contributed to the integration of adaptation considerations into national, sub-national and local development plans. The support entailed the establishment of new or enhancement of existing institutional arrangements for NAPs, engagement of multiple stakeholders (including Indigenous Peoples, women, youth, private sector), stocktake of activities (through the synthesis of available adaptation information, identification of existing capacities, policies, strategies and plans), exploring complementarities and formulating NAPs and updating NDCs. It is worth noting that several countries have worked on identification of opportunities and needs for ‘climate proofing’ of key investments, relating to adaptation options, for instance, through cost-benefit analysis or multi-criteria assessments and capacity building in applying adaptation technologies and practices. Furthermore, supported countries have increasingly recognized the importance of mapping of technical, institutional and financial needs and gaps, in order to expedite access to finance, and ensure coherence between adaptation planning and relevant global frameworks. NAPs and related efforts on reporting, monitoring and review as well as monitoring of public expenditure on adaptation are critical to improve the appreciation of country’s progress in achieving GGA.

To improve adaptation capacity, FAO advocates for performing climate risk screenings to allow for better and more targeted decision-making. To this end, in 2022, FAO launched a Climate Risk Toolbox (CRTB)⁵— an online tool to support climate-sensitive project design. The CRTB can be used to identify climate risk hotspots, and analyze major climate hazards and interlinkages with socio-economic variables and agro-ecological systems. The CRTB is based on climate risk indicators, which reveal interlinkages between climate hazards, geographical, and socio-economic indicators of exposure, vulnerability, and adaptive capacity. The indicators are based on the most up-to-date information available at national and sub-national levels. The CRTB users can conduct climate risk screenings in a few steps and obtain a comprehensive report that includes climate-resilient measures and tailored recommendations to prevent, reduce and mitigate climate risk. This tool supports climate change policies and disaster risk reduction, a key feature of the FAO’s new Framework for Environmental and Social Management.

Lastly, FAO also recognizes the role of migration as an adaptation solution in the context of rural agricultural livelihoods affected by adverse impacts of climate change. This should include evaluating the impact of climate change adaptation initiatives on human wellbeing and mobility, with reference to the vulnerability of the poorest and most marginalized, such as youth, women, and Indigenous Peoples and recognition that the costs and benefits of climate change initiatives are not borne equally by different groups of society, with implications for mobility and future adaptive capacity. Well managed, safe and orderly migration in the context of rural agricultural livelihoods has the potential to contribute to meeting global targets on adaptation and mitigation under the Paris Agreement. While some progress has been made towards integrating migration and mobility considerations into NAPs and, to a lesser extent, NDCs, FAO advocates for the specific consideration of migration from a rural livelihood perspective. To this effect, FAO and the United Nations University - Institute for Environment and Human Security developed a Global Guide and Toolkit on Integrating Migration from a Rural Livelihoods Perspective into NAPs and NDCs (publication forthcoming).

Additional information is available in the publications listed below:

- FAO. 2017. Addressing Agriculture, Forestry and Fisheries in National Adaptation Plans. Rome. Available at: <https://www.fao.org/3/i6714e/i6714e.pdf>.
- FAO. 2021. Final evaluation of the project “Integrating Agriculture into National Adaptation Plans (NAP-Ag)”. Project Evaluation Series, 06/2021. Rome. Available at: <https://www.fao.org/documents/card/en/c/CB5225EN>.

⁴ <https://www.fao.org/documents/card/en/c/CB5225EN>

⁵ FAO, 2023. Climate Risk Toolbox, Guiding material for climate risk screening: <https://www.fao.org/documents/card/en/c/cc2909en>

- Chiriaco, M.V., Perugini, L. Bellotta, M., Bernoux, M. & Kaugure, L. 2019. Koronivia Joint Work on Agriculture: analysis of submissions on topics 2(b) and 2(c). Environment and Natural Resources Management Working Paper no. 79. Rome. Available at: <https://www.fao.org/documents/card/en/c/ca7026en/>.
- Drieux, E., Van Uffelen, A., Bottigliero, F., Kaugure, L. & Bernoux, M. 2021. *Understanding the future of Koronivia Joint Work on Agriculture. Boosting Koronivia*. Rome, FAO. Available at: <https://www.fao.org/3/cb6810en/cb6810en.pdf>.
- Upcoming report: “Using Sustainable Development Goals metrics to assess progress towards the Paris Agreement global goal on adaptation: Transparency in adaptation in the Agriculture sectors”.

Finance flows and means of implementation

9. What is the state of current global climate finance flow and the overall progress made towards making the financial flows consistent with the pathways towards low GHG emissions and climate-resilient development, in the light of equity and the best available science (Article 2.1(c) Paris Agreement)?

FAO has increased its efforts to contribute to mobilization of international climate finance and support to global climate initiatives to sustainably transform agrifood systems. Overall, while climate finance flows have increased over the past decade, the share of finance targeting agriculture has been steadily decreasing, representing 26 percent of the global climate finance flows to all sectors, which is equivalent to USD 122 billion between 2000 and 2018 (FAO, 2023)⁶.

In order to step up quality and quantity of climate finance to transform agrifood systems, FAO, together with COP27 presidency and other relevant partners, has set up the FAST Initiative⁷. FAST is a multi-stakeholder programme that aims to enhance adaptation efforts, while pursuing the Paris Agreement’s 1.5°C global warming limit. The initiative also aims to ensure the effective delivery of agreed outputs, with initial principles identified through a series of multi-stakeholder consultations and in partnership with the High-Level Champions under the Marrakech Partnership.

FAO’s Programme Implementation Report 2020-2021 (FAO 2022), published in June 2022, illustrates that FAO has successfully supported countries in accessing climate finance. During 2020-2021, FAO supported over 130 countries mobilizing more than USD 2.7 billion of national and international funds to enhance climate resilience, adaptation and mitigation in the agrifood systems. A total of 108 new FAO programmes and projects on climate change became operational, including through the Global Environment Facility (GEF), Green Climate Fund (GCF) and Adaptation Fund portfolio, as well as the Technical Cooperation Programme. The Organization also secured over 15 percent of GEF cumulative programming funds across the GEF-7 work programmes, becoming the fourth largest GEF accredited Agency. FAO mobilized USD 112 million from the Least Developed Countries Fund (LDCF) to support climate change adaptation in GEF-7.

As of May 2023, the total value of FAO’s GCF portfolio reached USD 1.1 billion, of which 20 are FAO-led projects, eight approved with FAO as a partner with other accredited entities projects, and 80 readiness projects. The latest portfolio includes a total of USD 145.3 million climate-resilience projects in Bolivia, Cambodia and the Philippines, which have been approved in March 2023 by the GCF Board^{8 9}.

FAO also became accredited to the Adaptation Fund in 2020 as 13th multilateral implementing entity. It has since supported 11 countries across all five regions in developing a portfolio worth USD 75 million, currently at varying pipeline stages.

⁶ <https://www.fao.org/3/cb8040en/cb8040en.pdf>

⁷ <https://www.fao.org/documents/card/es/c/cc2186en/>

⁸ <https://www.fao.org/3/cb3673en/cb3673en.pdf>

⁹ <https://www.fao.org/newsroom/detail/green-climate-fund-approves-new-projects-in-benin-and-the-gambia/en>
<https://www.fao.org/newsroom/detail/green-climate-fund-approves-new-projects-worth-151.3-million-for-climate-action-in-bolivia-cambodia-and-the-philippines/en>

In addition to supporting countries in accessing global environmental funds, FAO is working as part of its longstanding partnerships with international financing institutions (IFIs), such as the World Bank, EBRD and IFAD as well as regional IFIs to enhance both quantity and quality of financing for the transformation of agrifood systems. FAO is bringing its technical expertise to bear on specific IFI investments at country level as well as on strategy development in light of increasing urgency and priority to address climate change and on knowledge to inform investments.¹⁰

Additional information is available in the following publication:

- FAO. 2022. FAO's Programme Implementation Report 2020-2021. Available at: <https://www.fao.org/3/ni547en/ni547en.pdf>
- FAO. 2022. FAO and the Green Climate Fund: Building resilience with National Adaptation Plans. Available at: <https://www.fao.org/3/cc1180en/cc1180en.pdf>

11. *What are the barriers and challenges, including finance, technology development and transfer and capacity-building gaps, faced by developing countries?*

12. *What is the collective progress made towards achieving the long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce greenhouse gas emissions referred in Article 10.1 of the Paris Agreement? What is the state of cooperative action on technology development and transfer?*

FAO recognizes the importance of achieving lasting long-term progress in advancing technology development and transfer, in particular in agriculture and agrifood systems.

Technology, innovation, data and complements (governance, human capital, and institutions) are embraced in the FAO's Strategic Framework for 2022-2031. FAO places "scaling up technology and innovation" as one of corporate priorities to ensure food security and nutrition while sustainably managing natural resources and tackling climate change. The innovative interventions are key to ensure inclusive are inclusive human rights-based approach that benefit all, leaving no one behind. FAO further steps up its corporate efforts by endorsing two new strategies to address climate change, food security and nutrition through innovative and technology development, namely, the FAO Strategy on Climate Change and the FAO Science and Innovation Strategy.

Avert, minimize and address loss and damage associated with the adverse effects of climate change:

15. *Pursuant to Article 8 of the Paris Agreement and Decision 19/CMA.1 paragraph 6(b)(ii), what is the collective progress of efforts made to enhance understanding, action and support towards averting, minimizing and addressing loss and damage associated with the adverse effects of climate change, in the light of equity and the best available science?*

We would like to share the information about two relevant publications. The FAO's **Methodology for Damage and Loss Assessment in Agriculture** supports countries to generate precise and holistic data for the agricultural sector and can be used for national disaster risk reduction/management, resilience and to help monitor the achievement of global targets (Conforti *et al.*, 2020). In addition, FAO has been supporting countries to enhance data availability on disaster impacts in crop and livestock production and for the first time ever introducing the systematic monitoring of disaster impacts in forestry, fisheries and aquaculture subsectors.

The Impact of Disaster and Crises on Agriculture and Food Security (FAO, 2021)¹¹ provides a powerful case for investing in disaster risk reduction and resilience to ensure agriculture's crucial role in building inclusive and resilient agrifood systems. A new edition will be published in October 2023 with a dedicated chapter on

¹⁰ <https://www.fao.org/documents/card/en/c/cb1067en>, <https://www.fao.org/documents/card/en/c/cc0011en>

¹¹ <https://www.fao.org/documents/card/en?details=cb3673en>

climate change and attribution. FAO has been advancing knowledge on impacts of climate change on agriculture and works in collaboration with the Potsdam Institute for Climate Impact Research and the University of Kassel, to develop a loss and damage methodology to quantify losses on crop yield attributed to climate change.

20. How are Parties recognizing the importance of ensuring the integrity of all ecosystems, including oceans, and the protection of biodiversity, in order to achieve the purpose and long-term goals of the Paris Agreement?

Agriculture, forestry, and other land use (AFOLU) sector is critical for the implementation of NDCs and NAPs given its potential for large-scale mitigation and adaptation, including through reduced deforestation, improved forest management, and forest restoration. Many countries highlight the potential of forests in their NDCs and NAPs. However, a significant number of country targets are conditional on international climate finance, highlighting the need for continued support to enhance forest-related components. Also, AFOLU sector, in particular forests and trees, offer multiple opportunities in building mitigation and adaptation synergies, with clear co-benefits for helping achieve the SDGs and biodiversity targets.

Since many countries include adaptation goals in their NDCs (94 percent of new or updated NDCs mention adaptation components), formulating and implementing NAPs can have a reinforcing effect on NDC targets. The intersectoral approach of the NAP is fundamental for creating a comprehensive approach to adaptation, including the linkages between forests and other sectors. Following a new publication launched at COP27 (Libert-Amico et al. 2022), FAO has been working with partners to highlight the contributions of forests and trees to fulfilling country commitments for climate change adaptation and resilience building. This promotion of “forest-based adaptation” (an ensemble of climate actions including sustainable forest management, forest conservation and restoration, reforestation, urban forests and agroforestry) builds upon the work of the IPCC Sixth Assessment Report Working Group II and its call for upscaling and disseminating tried and tested adaptation measures that are recognized for their high feasibility and synergies with mitigation and the SDGs, while also helping address the biodiversity crisis.

Additional information is available in the following publication:

- Libert-Amico, A., Duchelle, A.E., Cobb, A., Peccoud, V. & Djoudi, H. 2022. Forest-based adaptation: transformational adaptation through forests and trees. Rome, FAO. Available at: <https://doi.org/10.4060/cc2886en>.