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FAO STRATEGY

ON CLIMATE CHANGE

2022–2031



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FOREWORD

At a time when the number of hungry people is on the rise, the world is still reeling from COVID-19, our ecosystems are degrading and inequalities widening, the presentation of the new FAO Strategy on Climate Change 2022–2031 is timely. Setting our agenda and guiding our work for the next ten years, the Strategy rests on our vision of climate-resilient agriculture to transform agrifood systems to be more efficient, more inclusive, more resilient and more sustainable, accelerating the achievement of the 2030 Agenda for Sustainable Development.

This new fit-for-purpose FAO Strategy on Climate Change responds to the worldwide challenge of tackling the impacts of the climate crisis, while aiming to address a broad range of interlinked challenges, including biodiversity loss, desertification, land and environmental degradation, the need for accessible, affordable renewable energy, and food and water security. Building on the momentum from recent achievements, pledges and initiatives reached at UN Climate Conferences and in other global events and fora, the Strategy reflects FAO's strengthened support to Members in their ambitions to implement the Paris Agreement and other relevant frameworks.

Sustainable and resilient agrifood systems provide a variety of solutions that respond to the climate crisis challenges and contribute to restoring degraded natural and managed ecosystems. I believe that holistic, integrated actions, springing from coordinated and collective efforts, will make our agrifood systems a central part of the global climate solution, and our planet a better place to live, ensuring food security and a more equitable future for all. The new Strategy on Climate Change looks beyond only food production by considering crops and livestock, forests, fisheries and aquaculture and related value chains, livelihoods, biodiversity and ecosystems in a holistic manner, as well as embracing the indispensable role of women, youth and Indigenous Peoples, as essential agents of change.

Endorsed by the 170th Session of the FAO Council, this Strategy is also key to delivering the FAO Strategic Framework 2022–2031 and accelerating agrifood system-related climate actions at global, regional, country and local levels and across sectors. It aims to help countries implement their country-driven commitments and plans, including Nationally Determined Contributions (NDCs) and National Adaptation Plans (NAPs), ensuring that all actors, especially small-scale producers, are fully enabled, empowered and involved in decision-making processes.

I wish to thank all FAO Members, Chairs and Vice-Chairs of the Regional Groups, the Chairs of the Council Committees and the Independent Chair of the Council, for their support in the professional, transparent and inclusive consultative process to develop the Strategy.

Together we can deliver the new Strategy on Climate Change through game-changing, innovative and science-based solutions, through effective collaboration and strong partnerships working collectively towards the achievement of the Sustainable Development Goals (SDGs). Let us join forces to turn the ambitions set out in the Strategy for Climate Change into tangible actions and real change to achieve our collective goal of the 4 Betters: better production, better nutrition, a better environment and a better life for all, leaving no one behind.

Qu Dongyu
FAO Director-General



ABBREVIATIONS AND ACRONYMS

AF	Adaptation Fund
CBD	Convention on Biological Diversity
CC	climate change
CFS	Committee on World Food Security
COP	Conference of the Parties
COP26	26th session of the Conference of the Parties to the UNFCCC
GCF	Green Climate Fund
GEF	Global Environment Facility
GIS	geographic information system
HLPE	high level panel of experts
IFAD	International Fund for Agricultural Development
IPCC	Intergovernmental Panel on Climate Change
LULUCF	land use, land-use change and forestry
NAPs	national adaptation plans
NDCs	nationally determined contributions
PPAs	programme priority areas
RBA	Rome-based agencies
REDD+	Reducing Emissions from Deforestation and Forest Degradation
SDGs	Sustainable Development Goals
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGA	United Nations General Assembly

UNICEF	United Nations Children's Fund
UNIN	UN Innovation Network
UNISDR	United Nations International Strategy for Disaster Reduction
UNSDG	United Nations Sustainable Development Group
WFP	World Food Programme
WHO	World Health Organization

Chemical symbols

CH ₄	methane
CO ₂	carbon dioxide
N ₂ O	nitrous oxide

EXECUTIVE SUMMARY



Climate change is a global challenge that requires comprehensive and cross-sectoral action, including across agrifood systems. Such action needs to be taken in full consideration of international goals and agreements, such as the 2030 Agenda for Sustainable Development and its universally agreed Sustainable Development Goals, the Rio Declaration on Environment and Development and the Paris Agreement. It also needs to be rooted in the economic, social and environmental dimensions of sustainable development. To accelerate its contribution towards the 2030 Agenda, FAO has, within its mandate and comparative advantages, developed a new Strategy on Climate Change for the next ten years. The Strategy on Climate Change echoes the recognition of the Paris Agreement of the fundamental priority of safeguarding food security and ending hunger. It presents the role of agrifood systems as part of the solution to climate change and seeks complementarities with the missions of other organizations and related agreements.

The urgency to act on climate change impacts on agrifood systems has never been clearer, as indicated by the latest reports of the Intergovernmental Panel on Climate Change. Agrifood systems must become more resilient to the current and future impacts of climate change, learning from good practices to promote transformative adaptation policies, plans and actions. The Paris Agreement calls for holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels. This necessitates rapid, deep and sustained reductions in global greenhouse gas emissions, including from agrifood systems. Climate action in a coherent manner, as appropriate, in accordance with and dependent on national contexts and capacities through agrifood systems offers considerable potential to maximise co-benefits of adaptation and mitigation, while achieving other Sustainable Development Goals.

FAO seeks to enhance its support to Members in their efforts with respect to climate change adaptation and mitigation, working towards climate-resilient and low-emission agrifood systems while striving to achieve the Sustainable Development Goals, in particular eradicating hunger and malnutrition. Climate action at global, regional, national and local levels across agrifood systems is fundamental to their transformation in a coherent manner according to, and dependent on, national contexts and capacities, including for the pursuit of other environmental, social and economic objectives.

Based on the FAO Members' request at the 166th Session of the Council for "inclusive consultations ahead of the 168th Session of the Council to start the development of

the new FAO Strategy on Climate Change” and the support expressed by Members at the 168th Session of the Council for the outline and roadmap of the Strategy, FAO has developed the new Strategy on Climate Change through an inclusive and consultative process engaging FAO Members, FAO experts at headquarters and regional, subregional and country offices, and external partners.

The Strategy on Climate Change builds on the FAO Strategy on Climate Change published in 2017, is aligned with and contributes to the implementation of the FAO Strategic Framework 2022–31, reflecting FAO’s vision of a world free from hunger and malnutrition where food and agriculture contribute to improving the living standards of all, especially the poorest, in an economically, socially and environmentally sustainable manner. The principles guiding the Strategy on Climate Change and FAO’s climate action emphasize inclusiveness, innovation, partnerships, science and evidence as well as the “no-one-size-fits-all” and system-oriented approaches, with farmers, livestock keepers, fishers, aquaculturists, forest-dependent people, food value chain workers, Indigenous Peoples, youth, women and their groups, and people in vulnerable situations placed at the centre.

FAO’s vision for the Strategy on Climate Change

Agri-food systems are sustainable, inclusive, resilient and adaptive to climate change and its impacts and contribute to low-emission economies while providing sufficient, safe and nutritious foods for healthy diets, as well as other agricultural products and services,¹ for present and future generations, leaving no one behind.



¹ Agricultural products and services are from crop-based farming system and livestock systems, forestry, fisheries and aquaculture, including related ecosystems.



The Strategy on Climate Change action is organized under three Pillars focusing on action at:

- **GLOBAL AND REGIONAL LEVELS:**
Strengthening global and regional climate policy and governance;
- **COUNTRY LEVEL:**
Developing countries' capacities for climate action; and
- **LOCAL LEVEL:**
Scaling up climate action on the ground.

The Strategy on Climate Change is operationalized through a regularly reviewed Action Plan with targets, indicators, timelines, responsibilities and a tracking process, including plans for capacity development, resource mobilization and communication. The implementation of the Strategy on Climate Change will seek multi-stakeholder partnerships, including with Rome-based Agencies and other United Nations agencies, financial institutions and the private sector, as well as by means of instruments such as South-South and Triangular Cooperation.



INTRODUCTION



1. With the estimated number of people facing hunger rising to 720-811 million in 2020² and the already tangible impacts of climate change and extreme weather events on food security, nutrition and poverty, the urgency to address climate change has significantly increased. The food security and nutrition challenges have further grown due to the COVID-19 pandemic and related containment measures.³ Current analyses indicate that hunger and all forms of malnutrition⁴ will not be eradicated by 2030 unless bold actions are taken to accelerate progress, especially to sustainably increase agricultural productivity and incomes and address inequality in access to safe and nutritious food for healthy diets while accelerating climate action⁵.
2. The 2030 Agenda for Sustainable Development⁶ set universally agreed Sustainable Development Goals (SDGs). The Decade of Action to deliver the SDGs called for accelerated solutions to the world's biggest and often intertwined challenges, which include poverty and hunger, inequality, climate change, loss of biodiversity, ecosystem degradation and desertification. The United Nations Secretary-General's report "Our Common Agenda"⁷ outlined the transformation of agrifood systems⁸ as a key action area recalling that transforming agrifood systems should be made in a coherent manner, as appropriate, in accordance with and dependent on national contexts and capacities.

² FAO, International Fund for Agricultural Development, United Nations Children's Fund, World Food Programme and World Health Organization. 2021. The State of Food Security and Nutrition in the World 2021: Transforming Food Systems for Food Security, Improved Nutrition and Affordable Healthy Diets for All. Rome, FAO. www.fao.org/3/cb4474en/cb4474en.pdf

³ As footnote 2 above.

⁴ FAO. 2021. Vision and strategy for FAO's Work in Nutrition (in press). Adopted by the 166th Session of the Council as per paragraph 24(b).

⁵ Climate action means stepped-up efforts to reduce greenhouse gas emissions and strengthen resilience and adaptive capacity to climate-induced impacts. <https://sdghelpdesk.unescap.org/learn-more-about-climate-action>

⁶ United Nations. 2015. Transforming Our World: The 2030 Agenda for Sustainable Development. Adopted: United Nations General Assembly, 25 September 2015. UNGA A/RES/70/1.

⁷ United Nations. 2021. Our Common Agenda: Report of the Secretary-General. New York, United Nations. www.un.org/en/content/common-agenda-report/assets/pdf/Common_Agenda_Report_English.pdf

⁸ The agrifood system covers the journey of food from farm to table – including when it is grown, fished, harvested, processed, packaged, transported, distributed, traded, bought, prepared, eaten and disposed of. It also encompasses non-food products that also constitute livelihoods and all of the people as well as the activities, investments and choices that play a part in getting us these food and agricultural products. In the FAO Constitution, the term "agriculture" and its derivatives include fisheries, marine products, forestry and primary forestry products. www.fao.org/3/nf693en/nf693en.pdf

3. The multiple and complex causes of the food crises that occur in different regions of the world, affecting developing countries, especially net food importers, and their consequences for food security and nutrition require a comprehensive and coordinated response in the short, medium and long term by national Governments, civil society, the private sector and the international community, reiterating that the root causes of food insecurity and malnutrition are poverty, growing inequality, inequity and lack of access to resources and income – earning opportunities, the effects of climate change and disasters, and conflicts, and remaining concerned that excessively volatile food prices can pose a serious challenge to the fight against poverty and hunger and to the efforts of developing countries to attain food security and improved nutrition and to achieve internationally agreed development goals, including the Sustainable Development Goals, particularly those related to ending hunger and malnutrition.
4. Noted the 2021 Food Systems Summit, convened by the Secretary-General on 23 and 24 September 2021, as well as its pre-Summit, held from 26 to 28 July 2021 in Rome, recalling that the Chair’s Summary and Statement of Action on the United Nations Food Systems Summit, issued by the Secretary-General, does not constitute a negotiated document.
5. Following its mandate⁹, FAO is working for the world to get back on track to achieve the goal of eradicating hunger and all forms of malnutrition (SDG 2), ending poverty (SDG 1) and reducing inequalities (SDG 10) by 2030, while ensuring clean water (SDG 6), sustainable production and consumption (SDG 12), sustainable management of natural resources (SDGs 14 and 15) and leveraging partnerships (SDG 17). In view of the high reliance of agrifood systems on climate and environmental conditions, climate action (SDG 13) is essential to achieving these goals and the long-term sustainability of agrifood systems. As part of its efforts towards the 2030 Agenda, FAO has developed a new Strategy on Climate Change (Strategy on Climate Change) for the next ten years.
6. The Strategy on Climate Change aligns with the SDGs based on the three dimensions of sustainable development and shared goals and cooperation towards the 2030 Agenda for Sustainable Development, the Addis Ababa Action Agenda, and the Rio Declaration on Environment and Development, including their principles, as relevant¹⁰, the Paris Agreement on Climate Change, including Article 2.1 and 2.2¹¹, and the relevant paragraphs of the Glasgow Climate Pact and notes in this regard 1/CP.26 paragraphs 5 and 6 and 1/CMA.3 paragraphs 6 and 7 of the Glasgow Climate Pact decisions, and 1/CP.26 paragraphs 17 and 18 and 1/CMA.3 paragraphs 22 and 23 from the Glasgow Climate Pact CMA decisions.

⁹ The preamble of the FAO constitution defines FAO’s purpose as follows: raising levels of nutrition and standards of living of the peoples under their respective jurisdictions; securing improvements in the efficiency of the production and distribution of all food and agricultural products; bettering the condition of rural populations; and thus contributing towards an expanding world economy and ensuring humanity’s freedom from hunger.

¹⁰ In particular, those principles related to the paragraph on Adaptation.

¹¹ Article 2 of the Paris Agreement: 2.1 This Agreement, in enhancing the implementation of the Convention including its objective, aims to strengthen the global response to the threat of climate change, in the context of sustainable development and efforts to eradicate poverty, including by: (a) Holding the increase in the global average temperature to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would significantly reduce the risks and impacts of climate change; (b) Increasing the ability to adapt to the adverse impacts of climate change and foster climate resilience and low greenhouse gas emissions development, in a manner that does not threaten food production; and (c) Making finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development. 2.2 This Agreement will be implemented to reflect equity and the principle of common but differentiated responsibilities and respective capabilities, in the light of different national circumstances.



7. Through the Strategy on Climate Change, FAO aims to support the implementation of the Paris Agreement, as referred to in paragraph 6 in a coherent manner taking into account national contexts and capacities. The Strategy on Climate Change responds to the need to support all Members, particularly developing countries in formulating and implementing their climate commitments, as appropriate, in coordination with other existing initiatives and mechanisms, focusing on FAO's added value on land-related mitigation and adaptation options, including through the voluntary sharing of knowledge and practices, research and technology transfer on mutually agreed terms and improve equitable access to research results and technologies on mutually agreed terms at the national, regional and international levels, such as through South-South and Triangular Cooperation and improve access to investments and financial resources.
8. To respond to the growing short- and long-term climate, food security, nutrition and poverty challenges while considering major environmental concerns, the Strategy on Climate Change aims at scaling up FAO's climate action to support Member nations if so required at global, regional, country and local levels. Owing to the many interconnections of its impacts, climate change needs to be dealt with in a holistic and integrative way to maximize co-benefits and address trade-offs of climate action with other key environmental areas and sustainable socioeconomic development.
9. Building on the 2017 FAO Strategy on Climate Change¹² and the recommendations of the Evaluation of FAO's Support to Climate Action (SDG 13) and the Implementation of the FAO Strategy on Climate Change,¹³ the Strategy on Climate Change emphasizes the relevance of efficient, inclusive, resilient and sustainable agrifood systems as part of the solutions to climate change. The Strategy on Climate Change enhances FAO's efforts towards achieving SDG 13 and other related goals, and better aligns with the 2030 Agenda. It aims to address a broad range of interlinked challenges, including the loss of biodiversity, desertification, environmental degradation, the need for accessible, renewable energy, and food and water security. The Strategy on Climate Change looks at agrifood systems, taking into consideration all agricultural sectors, related value chains and ecosystems in a holistic way and recognizing the importance of a balance between the economic, social and environmental dimensions of sustainable development. It is rooted in the principles of best available science and innovation and

¹² FAO. 2017. FAO Strategy on Climate Change. Rome, FAO. www.fao.org/3/i7175e/i7175e.pdf

¹³ FAO. 2021. Evaluation of FAO's Support to Climate Action (SDG 13) and the Implementation of the FAO Strategy on Climate Change (2017). Thematic Evaluation Series 03/2021. Rome, FAO. www.fao.org/3/cb3738en/cb3738en.pdf

recognizes the importance of scaling up finance and responsible investment¹⁴ for the transformation of agrifood systems in a coherent manner according to, and dependent on, national contexts and capacities. Furthermore, the Strategy on Climate Change aims to empower and engage women, youth, Indigenous Peoples and people in vulnerable situations in climate action.

10. The Strategy on Climate Change emphasizes tailoring FAO's climate action to different contexts and realities, including rural, peri-urban and urban areas, and supporting countries, as appropriate, in designing, revising and implementing agrifood systems related parts of their country-driven commitments and plans, including nationally determined contributions (NDCs), national adaptation plans (NAPs), nationally appropriate mitigation actions, long-term low greenhouse gas emission development strategies, disaster risk reduction plans and other related targets and commitments. Moreover, it considers different dimensions of risk, including the risk of non-acting, systemic risks, climate and environmental risk reduction, the specific needs and capacities of people and communities in vulnerable situations and integrating climate risk management¹⁵ in FAO's areas of work.
11. The Strategy on Climate Change also considers countries' new and updated NDCs,¹⁶ noting that 95 percent of the adaptation elements include adaptation in the agricultural sectors and most of them reference ecosystems and natural resources, including land and water, as well as livelihoods as priority areas for adaptation. In addition, 95 percent of updated NDCs include mitigation in the agricultural and/or land use, land-use change and forestry (LULUCF) sectors and 70 percent include disaster risk reduction and management. The Strategy on Climate Change takes into account the diversity of national circumstances, needs and priorities, giving a solid ground for FAO's consideration of regional, national and local specificities.

¹⁴ Committee on World Food Security. 2014. Principles for Responsible Investment in Agriculture and Food Systems. Rome, Committee on World Food Security. www.fao.org/3/au866e/au866e.pdf

¹⁵ FAO's work on climate risk management focuses on mainstreaming climate risk considerations into its programming and on supporting evidence-based interventions and decision-making.

¹⁶ Crumpler, K., Abi Khalil, R., Tanganelli, E., Rai, N., Roffredi, L., Meybeck, A., Umulisa, V., Wolf, J. and Bernoux, M. 2021. 2021 (Interim) Global update report – Agriculture, Forestry and Fisheries in the Nationally Determined Contributions. Environment and Natural Resources Management Working Paper No. 91. Rome, FAO. <https://doi.org/10.4060/cb7442en>

CLIMATE CHANGE: A GLOBAL THREAT TO FOOD SECURITY AND NUTRITION

A. The latest scientific evidence

12. The contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC), *Climate Change 2021: The Physical Science Basis*¹⁷ confirms the unequivocal and unprecedented climate risks the planet is facing now and in coming decades from the intensifying heatwaves, heavy precipitation and droughts, fires and tropical cyclones that are expected to affect all regions of the world.
13. Furthermore, longer-term slow onset changes in climate will affect agrifood systems, food production and people's livelihoods in many ways and require accelerated adaptation action. IPCC reports^{18 19} mention longer-term changes in climate, such as an increasing mean temperature, altered seasonality, combined heat and drought stress, heavy rain events, water stress, changes in the occurrence of pests and diseases, sea level rise and ocean acidification. Moreover, the global water cycle will continue to intensify as global temperatures rise, with precipitation and surface water flows projected to become more variable over most land regions within seasons and from year to year. These will all have impacts on the agricultural sectors and related value chains, livelihoods and ecosystems.
14. The IPCC report on climate change 2022²⁰ states that increasing weather and climate extreme events have already exposed millions of people to acute food

¹⁷ IPCC. 2021. *Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. V. Masson-Delmotte, P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou, (eds.). Cambridge, Cambridge University Press. www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf

¹⁸ See footnote 17 above.

¹⁹ IPCC. 2019. Summary for Policymakers. In: *IPCC Special Report on the Ocean and Cryosphere in a Changing Climate*. H.-O. Pörtner, D.C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska, K. Mintenbeck, A. Alegría, M. Nicolai, A. Okem, J. Petzold, B. Rama, N.M. Weyer (eds.). www.ipcc.ch/site/assets/uploads/sites/3/2019/11/03_SROCC_SPM_FINAL.pdf

²⁰ IPCC. 2022. Summary for Policymakers. In: *Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.). Cambridge, Cambridge University Press. https://report.ipcc.ch/ar6wg2/pdf/IPCC_AR6_WGII_SummaryForPolicymakers.pdf

insecurity and reduced water security. Economic damages from climate change have been detected in climate-exposed sectors, with regional effects to agriculture, forestry and fisheries. Global hotspots of high human vulnerability are found particularly in West, Central and East Africa, South Asia, Central and South America, Small Island Developing States and the Arctic. Vulnerability is more critical in locations with poverty, governance challenges and limited access to basic services and resources, violent conflicts and high levels of climate-sensitive livelihoods, including agriculture, forestry and fisheries. There are feasible and effective adaptation options that can reduce risks to people and nature. Comprehensive, effective and innovative responses can use synergies and reduce trade-offs between adaptation and mitigation to advance sustainable development. Safeguarding biodiversity and ecosystems is fundamental to climate resilient development, given the threats posed by climate change to them and their role in adaptation and mitigation.

15. According to the IPCC special report on climate change and land,²¹ forests play an important role in relation to climate resilience, adaptation and mitigation, including serving as carbon sinks and storage and housing biodiversity, as well as buffering risks caused by climate change impacts. Changes in forest cover from afforestation, reforestation and deforestation directly affect regional surface temperature through exchanges of water and energy. Moreover, forests protect coastal areas, and wood products are sources of renewable materials and energy that can substitute non-renewable and polluting ones.
16. The IPCC Special Report on Climate Change and Land also reveals that 21–37 percent of total greenhouse gas emissions could be attributed to the global food system. These arise from production, land-use change, processing, packaging, distribution, preparation and consumption of food, including food loss and waste. Given the diversity of agrifood systems, there are large local, national and regional differences in how the different steps contribute to total emissions. Carbon sinks need to be enhanced and greenhouse gas emissions and emissions intensity reduced across agrifood systems, in addition to a drastic reduction in emissions from all other sources, to reach the goal of holding the increase in the global average temperature to well below 2 °C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5 °C above pre-industrial levels in accordance with the Paris Agreement.
17. As indicated in the IPCC special report on the ocean and cryosphere,²² the ocean has warmed since 1970 and has taken up more than 90 percent of the excess heat in the climate system. Human communities in close connection with coastal environments, small islands (including Small Island Developing States), polar areas and high mountains are particularly exposed to ocean and cryosphere change and related impacts, such as ocean acidification, sea level rise, extreme sea level events,

²¹ 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 and J. Malley (eds.).

²² As footnote 19 above.



marine heatwaves, shrinking cryosphere and permafrost thaw. Many marine species have already undergone shifts in geographical range and seasonal variations in their biological cycle in response to ocean warming, sea ice change and biogeochemical changes to their habitats. This has resulted in shifts in species composition, abundance and biomass production of marine ecosystems from the equator to the poles. In many tropical regions, declines in fish and shellfish stocks due to direct and indirect effects of global warming and biogeochemical changes have already contributed to reduced fisheries catches.

B. Agrifood systems and climate change

18. Agrifood systems already face the challenge of sustainably providing sufficient, accessible, affordable, safe and nutritious foods that contribute to healthy diets, as well as other raw materials, bioenergy, processed products and services, to a growing and urbanizing global population. Climate change, along with other drivers, is already undermining the recent progress made in promoting sustainable rural livelihoods and fighting against hunger and all forms of malnutrition. At the same time, agrifood systems and related livelihoods are affected in the short and longer term by the intertwined impact of biodiversity loss (including degradation of ecosystems, loss of species and genetic resources erosion²³) and competition over access to natural resources, which requires an ambitious and coordinated response.
19. Climate variability and the increasing frequency and intensity of weather extremes due to climate change pose multiple challenges: they aggravate risk and impacts, affect all dimensions of food security and nutrition (availability, access, utilization and stability), disproportionately impact the social groups in the most vulnerable situations and add pressure on land and water resources and fragile agrifood systems and ecosystems.²⁴ Urgent actions are needed to reduce climate risk through developing capacities in the areas of prevention, anticipation, absorption, adaptation and

²³ The Strategy on Climate Change recognizes the objectives of the International Treaty on Plant Genetic Resources for Food and Agriculture: "the conservation and sustainable use of 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."

²⁴ FAO. 2015. Climate change and food security: risks and responses. Rome, FAO. www.fao.org/3/a-i5188e.pdf

transformation²⁵ for driving all decision-making, policies and climate actions such as climate risk, impact and vulnerability assessments; multi-hazard early warning systems; and climate-proofing infrastructure and risk transfer systems, including insurance and social protection, anticipatory action, and emergency preparedness and response for climate change adaptation and resilience across agrifood systems.

20. Allowing agrifood systems actors to continue producing, processing, marketing and consuming safe and nutritious foods and other products and services thus requires a range of efficient climate resilience and adaptation actions built on healthy ecosystems, and the sustainable use and conservation of natural resources. At the same time, agrifood systems are called to address concerns related to greenhouse gas emissions, particularly carbon dioxide (CO₂), methane (CH₄) and nitrous oxide (N₂O), including through reduced ecosystem conversion, on-farm energy use and food loss and waste.
21. The shift and disruptions in production potential induced by climate change may lead to changes in the trade of agricultural commodities. In the short term, by moving food from surplus to deficit areas, trade can play an important role in addressing production shortfalls due to increased weather variability and extreme events. Conducive trade policies in accordance with World Trade Organization rules can be part of climate change adaptation strategies, as the volume and flow of trade can stabilize regional changes in productivity and food price volatility caused by the changing climate.²⁶
22. Some actions across agrifood systems already contribute to climate change adaptation, mitigation and sustainable development. These actions include but are not limited to sustainable production of food and bioenergy, sustainable forest management, landscape restoration, reduced deforestation and forest degradation, agroforestry, sustainable management and restoration of high-carbon ecosystems, such as peatlands, wetlands, rangelands, mangroves and forests, reclamation of degraded soils and reduced food loss and waste.

²⁵ United Nations Sustainable Development Group. 2021. UN Common Guidance on Helping Build Resilient Societies. Executive Summary. <https://unsdg.un.org/sites/default/files/2021-09/UN-Resilience-Guidance-Exec-Summ-Sept.pdf>

²⁶ FAO. 2018. The State of Agricultural Commodity Markets 2018: Agricultural Trade, Climate Change and Food Security. Rome, FAO. www.fao.org/3/I9542EN/I9542en.pdf



C. Harnessing good practices and innovative solutions

23. To respond to climate challenges, good practices and innovative solutions should be harnessed, tailored and piloted in the diverse range of regional, country and community contexts within which FAO works, ensuring protection of intellectual property rights. Moreover, developing partnerships and capacities for country- and local level agrifood innovation systems and their actors is key to co-creating, adapting, disseminating, accessing and adopting innovations.
24. Science- and evidence-based innovations focusing on climate action – technological, financial, policy, legislative, social and institutional – are needed across agrifood systems. These solutions often come as packages; for example, scaling up a new technology may require conducive policy and legal frameworks, targeted financing, closing of the digital divide, social acceptance, and sound governance and institutions. Exploring and learning from Indigenous Peoples' food systems and integrating local and indigenous knowledge and practices with science-based solutions and innovations is also vital.
25. To transform agrifood systems, policies supported by good governance and appropriate legal and institutional frameworks should stimulate and lower barriers to public and private investments and the adoption of good practices, technologies and innovations and within its mandate, contribute to the multilateral trading system in line with the rules of the World Trade Organization. A critical look at current policies and legislation may be needed, including at how incentives might undermine climate and other environmental concerns²⁷ or unintentionally exacerbate vulnerability to climate change.
26. Accelerating agrifood systems transformation in a coherent manner according to, and dependent on, national contexts and capacities also calls for innovative and inclusive financing mechanisms and seizing evolving financing options. This requires, for example, assessing investment-related risks and applying appropriate risk

²⁷ FAO, United Nations Development Programme and United Nations Environment Programme. 2021. A Multi-Billion-Dollar Opportunity. Repurposing Agricultural Support to Transform Food Systems. Rome, FAO.

-mitigation mechanisms.²⁸ Innovative ways of financing climate action are emerging, including approaches for carbon markets, public–private efforts and new modalities for paying for ecosystems services. These will also require measurement, reporting and verification systems, baseline setting and capacity development on the ground, on which FAO can already offer significant expertise at the request of Members. Furthermore, opportunities for blending different types of financing, including grants and credits from public and private origins, insurance and microfinancing, are increasingly arising. In this context, it is important to encourage all parties to fully implement the Paris Agreement, including their financial commitments.

27. Recently, building on the analyses of policy and project results and social studies, more emphasis has been put on behavioural sciences that provide new insights on lowering the barriers to take necessary climate action.²⁹ Engaging diverse agrifood systems actors, including youth and women, from the outset in the planning and implementation of climate change interventions is needed to better understand the values, motivations, limitations and competing pressures of each.
28. The FAO Strategic Framework 2022–31³⁰ identifies science, technology and innovation as having substantial transformative potential, while recognizing the potential risks; for example, as technologies reshape, the risks of unequal access and exclusion may emerge. Therefore, as well as policies and regulations minimizing such risks, investments in human capital and capacity development for innovation systems are required, as highlighted in the new FAO Science and innovation strategy.³¹

²⁸ Limketkai, B., Guarnaschelli, S. and Millan, A. 2020. Financing the Transformation of Food Systems Under a Changing Climate. Research Program on Climate Change, Agriculture and Food Security and KOIS Caring Finance. <https://cgspace.cgiar.org/bitstream/handle/10568/101132/CCAFS%20KOIS%20Financing%20the%20Transformation%20of%20Food%20Systems%20Under%20a%20Changing%20Climate.pdf>

²⁹ Barrett, C.B., Benton, T., Fanzo, J., Herrero, M., Nelson, R.J., Bageant, E., Buckler, E., Cooper, K., Culotta, I., Fan, S., Gandhi, R., James, S., Kahn, M., Lawson-Lartego, L., Liu, J., Marshall, Q., Mason-D’Croze, D., Mathys, A., Mathys, C., Mazariegos-Anastassiou, V., Miller, A., Misra, K., Mude, A.G., Shen, J., Majele Sibanda, L., Song, C., Steiner, R., Thornton, P. and Wood, S. 2020. Socio-Technical Innovation Bundles for Agri-food Systems Transformation. Report of the International Expert Panel on Innovations to Build Sustainable, Equitable, Inclusive Food Value Chains. Ithaca, New York, and London, Cornell Atkinson Center for Sustainability and Springer Nature. www.nature.com/documents/Bundles_agrifood_transformation.pdf

³⁰ FAO. 2021. Strategic Framework 2022–31. Rome, FAO. www.fao.org/3/cb7099en/cb7099en.pdf

³¹ FAO. 2021. The outline and roadmap of the “FAO Science and Innovation strategy”. The 168th Session of the Council. Rome, FAO.

SCOPE OF THE FAO STRATEGY ON CLIMATE CHANGE

A. Climate change in the FAO Strategic Framework

29. The Strategy on Climate Change will be implemented in the context of the FAO Strategic Framework 2022–31, which aims to “support the 2030 Agenda through the transformation to MORE efficient, inclusive, resilient and sustainable agrifood systems for *better production, better nutrition, a better environment and a better life*, leaving no one behind.” Due to the cross-cutting nature of FAO’s climate change work, the Strategy on Climate Change is closely linked to these “four betters” and thus contributes to their achievement. Four triggers for transforming agrifood systems are recognized as priorities: institutions and governance; consumer awareness; income and wealth distribution; and innovative technologies and approaches.
30. The four betters reflect the interconnected economic, social and environmental dimensions of agrifood systems and as such, encourage a strategic and system-oriented approach within all FAO interventions, which are articulated in 20 Programme Priority Areas (PPAs), one of which focuses on climate change: “Climate change mitigating and adapted agrifood systems”. Furthermore, climate change is directly reflected in 11 other PPAs³² and indirectly embedded in all PPAs.
31. The effectiveness and coherence of FAO’s climate change interventions are highly dependent on building on the four cross-cutting/cross-sectional “accelerators”: technology, innovation, data and complements (governance, human capital and institutions); and the cross-cutting themes of gender, youth and inclusion of the FAO Strategic Framework 2022–31.

³² BP1: Innovation for sustainable agriculture production; BP2: Blue Transformation; BP4: Small-scale producers’ equitable access to resources; BN2: Nutrition for the most vulnerable; BN3: Safe food for everyone; BE2: Bioeconomy for sustainable food and agriculture; BL1: Gender equality and rural women’s empowerment; BL2: Inclusive rural transformation; BL3: Agriculture and food emergencies; BL4: Resilient agrifood systems; and BL5: Hand-in-Hand initiative.

32. The seven FAO core functions³³ also shape the delivery of climate action, which will be further elaborated in the Action Plan of the Strategy on Climate Change. FAO has recently developed mutually reinforcing strategies on themes including nutrition, private sector engagement, gender equality, mainstreaming biodiversity across agricultural sectors, corporate environmental responsibility, and science and innovation. The Strategy on Climate Change and its Action Plan seek connections, synergies and complementarities with all of these.

B. Vision and guiding principles

33. The vision and guiding principles of the Strategy on Climate Change provide a lens through which FAO's climate actions will be implemented at global, regional, country and local levels.
34. **VISION.** FAO envisions the future state brought about by its climate action: **Agrifood systems are sustainable, inclusive, resilient and adaptive to climate change and its impacts and contribute to low-emission economies while providing sufficient, safe and nutritious foods for healthy diets, as well as other agricultural products and services, for present and future generations, leaving no one behind.**
35. **GUIDING PRINCIPLES.** The Strategy on Climate Change aims to facilitate and scale up FAO's contribution to transforming agrifood systems and dependent livelihoods to become more climate resilient, adaptive and low emission. The Strategy on Climate Change is founded on the following principles, which are directly linked to the FAO Strategic Framework 2022–31:
- i. **Take an agrifood systems approach.** Complex problems call for climate action in synergy with action on biodiversity and other environmental and development goals that relate to agrifood systems. A system-oriented approach includes value chains and their actors from the natural resources base to production, processing and marketing, food environment³⁴ and consumption, consumer behaviour, food quality and safety, food loss and waste, renewable energy generation, energy efficiency and use, and the complex interactions between all these. To achieve SDGs 1 and 2, a system-oriented approach is required in addressing food security and nutrition concerns that are further exacerbated by

³³ FAO core functions: 1. Assemble, analyse, monitor and improve access to data and information; 2. Facilitate and support countries and other partners in the development and implementation of normative and standard setting instruments; 3. Facilitate, promote and support agrifood systems policy dialogue at global, regional and country levels; 4. Support institutions at all levels, including through capacity development, to prepare, implement, monitor and evaluate evidence-based policies and programmes, and leverage investments; 5. Facilitate partnerships and coalitions for more efficient, inclusive, resilient and sustainable agrifood systems; 6. Advise and support activities that assemble, disseminate and improve the uptake of knowledge, technologies and good practices; and 7. Advocate and communicate at national, regional and global levels.

³⁴ Food environments comprise foods available and accessible to people in their surroundings and the nutritional quality, safety, price, convenience, labelling and promotion of these foods. These environments should ensure that people have equal and equitable access to sufficient, affordable, safe and nutritious foods that meet dietary needs and food preferences for an active and healthy life, considering the various physical, social, economic, cultural, and political factors that influence that access.
[CFS 2021/49/INF/14 - The CFS Voluntary Guidelines on Food Systems and Nutrition \(VGFSyN\) \(fao.org\)](https://www.fao.org/cfs/2021/49/INF/14/)

climate change. Addressing the food-water-energy nexus and One Health³⁵ are examples of such approaches.

- ii. **Put farmers, livestock keepers, fishers, aquaculturists and forest-dependent people at the centre**, in particular small-scale producers, Indigenous Peoples, women, youth, local and marginalized communities, and people in vulnerable situations. Empowering people and supporting local-level climate action, targeting and engaging the rural and urban populations who are most at risk of the climate change impacts, such as Small Island Developing States and coastal communities and who manage much of the world's ecosystem resources needs to be at the frontline of FAO's climate work.
- iii. **Embrace good practices and innovations.** Core actions of the Strategy on Climate Change include supporting the stocktaking of existing good practices and local, traditional and indigenous knowledge and the emergence, exploration and promotion of innovative, proactive, sustainable and context-specific climate resilience, adaptation and mitigation solutions, and strengthening countries' agrifood innovation capacity and systems.
- iv. **Build on science-based evidence, including open science and data.** Solving climate change challenges requires the generation, sharing and efficient utilization, in a multidisciplinary manner, of the most reliable gender and age disaggregated data on global, regional and local scales, including on climate, natural resources, environment and socio-economy, and information on prevalent agrifood systems in different regions. FAO is one of the leading custodian agencies for the SDG indicators (under SDGs 2, 5, 6, 12, 14 and 15) and the most comprehensive source of agriculture, forestry, fisheries, aquaculture, food, soils, water and socioeconomic statistics. Therefore, FAO is uniquely placed to support science- and evidence-based decision-making and the use of local and indigenous knowledge, while complying with FAO policies on data, including the forthcoming data protection policy, paying close attention to the protection of privacy rights and intellectual property rights.
- v. **Promote country-driven climate action for sustainable results.** The strategy aligns with the principles of effectiveness anchored in country ownership, leadership, commitment and mutual accountability for results, with countries in the driving seat supported by FAO on their demand through a system-wide capacity development approach³⁶ to effectively strengthen countries' institutional and technical capacities for climate resilience, adaptation and mitigation. The Strategy on Climate Change should be implemented through priorities set by the Governing Bodies of FAO.
- vi. **Deliver through strategic partnerships.** Through wide engagement with partners, FAO and its Members can increase the extent and impact of climate action. This involves actors interested and engaged across agrifood systems, including government institutions, international, regional and national climate and other financing institutions, Rome-based Agencies (RBAs) and other United Nations organizations, regional and subregional organizations and economic communities, private companies, research and academia, media, foundations, farmers' and

³⁵ One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems. It recognizes that the health of humans, domestic and wild animals, plants and the wider environment (including ecosystems) are closely linked and interdependent.
www.who.int/news/item/01-12-2021-tripartite-and-unep-support-ohhlep-s-definition-of-one-health

³⁶ FAO. 2019. Sustainable Food and Agriculture: An Integrated Approach. Rome, FAO and Elsevier.
www.sciencedirect.com/book/9780128121344/sustainable-food-and-agriculture

other civil society organizations and non-governmental organizations. In addition to fostering existing partnerships, such as the Global Soil Partnership and the Collaborative Partnership on Forests, FAO seeks engagement with new partners, including private sector actors of different types and sizes for collaboration in capacity development, technical cooperation, knowledge and research, financing and investment, sustainable innovation and data sharing and dissemination,³⁷ as well as the South–South and Triangular Cooperation partners to catalyse resources, solutions, techniques and knowledge from the global South.³⁸

- vii. Mainstream gender equality, youth engagement, Indigenous People’s participation and social inclusiveness.** The Strategy on Climate Change promotes planning and implementation of gender-transformative,³⁹ youth-engaging, participatory and socially inclusive climate action, including strengthening of knowledge, technologies, practices and efforts of local communities and Indigenous Peoples in responding to climate change. Moreover, FAO emphasizes ensuring equal opportunities and sharing of benefits of climate action, engagement of women, youth and Indigenous Peoples in climate debates and providing support to countries to reduce social exclusion, including through legal, regulatory and institutional frameworks.
- viii. Support inclusive multi-stakeholder approaches.** In line with good practices on multi-stakeholder approaches⁴¹ the engagement of all stakeholders of the agrifood system, national and international entities, the public and private sectors and civil society in a complementary manner in planning and decision-making processes across national and subnational levels helps to ensure that no one is left behind in FAO’s climate action. Such an approach comprises improved coordination, joint problem analyses, co-creation of solutions, co-development of methods and metrics, planning and action and innovative multi-stakeholder governance mechanisms.
- ix. Scale up support.** There is an urgent need to scale up action to strengthen resilience, improve adaptive capacity and reduce risk and vulnerability to climate change across agrifood systems. Climate action through agrifood systems offers some of the most cost-effective options to maximise co-benefits of adaptation and mitigation on the ground. FAO will build on lessons learned to scale up good practices and accelerate climate action to support its Members, as appropriate, in relation to climate resilience, adaptation, mitigation and finance across agrifood systems and in addressing gaps in the implementation of the goals of the Paris Agreement.
- x. Adopt a “no-one-size-fits-all” approach.** FAO’s climate action considers national circumstances, diversity of contexts, specificities, priorities, synergies and capabilities across regions and countries and at the local level in terms of environmental, economic and social development and with regard to peace and stability. This means a context-specific approach, refraining from providing uniform types of assistance to problems that have different origins and causes and may require different means to achieve the common goals.

³⁷ FAO. 2021. FAO Strategy for Private Sector Engagement 2021–2025. Rome, FAO.

³⁸ FAO. 2021. South-South and Triangular Cooperation Guidelines for Action (2022–2025). Rome, FAO.

³⁹ FAO. 2020. FAO Policy on Gender Equality 2020–2030. Rome, FAO.

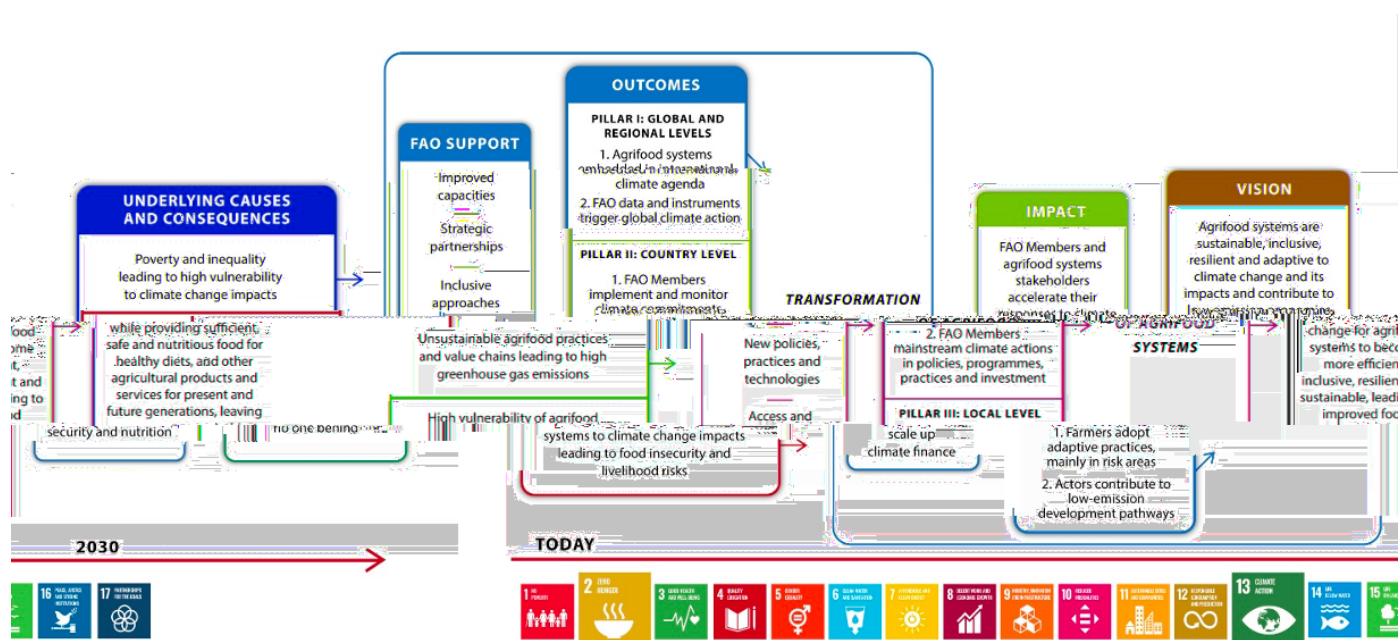
⁴⁰ UNFCCC decision 3/CP.25 (Enhanced Lima work programme on gender and its gender action plan).

⁴¹ High-Level Panel of Experts on Food Security and Nutrition. 2018. Multi-stakeholder Partnerships to Finance and Improve Food Security and Nutrition in the Framework of the 2030 Agenda. A report by the High-Level Panel of Experts on Food Security and Nutrition. Rome, Committee on World Food Security.

C. Theory of Change of the Strategy on Climate Change

36. The logic underlying the Strategy on Climate Change is underpinned by an analysis of the interaction between a set of **Challenges**, the **Impact** and the three **Pillars** of action and their expected **Outcomes**, as well as a set of assumptions and prerequisites for FAO's climate action.

FIGURE 1 - Theory of Change



37. The **CHALLENGES** that are described as underlying causes and consequences illustrate the problems that FAO addresses in the Strategy on Climate Change: Climate change is severely affecting agrifood systems and related ecosystems and livelihoods with negative impacts on poverty, food security and nutrition, while agrifood systems also contribute to climate change. FAO Members still require support in their efforts to adopt good practices and innovative solutions to address climate resilience, adaptation and mitigation for sustainable agrifood systems that are key for meeting the growing demand for nutritious and safe food and other agricultural products and services. Without urgent action to transform agrifood systems, climate change will keep disrupting food production, food security and nutrition and accelerating the loss of biodiversity, ecosystem degradation, poverty and inequality as well as potentially exacerbate conflicts and displacement, particularly in countries and regions that are already highly food insecure, and unsustainable practices across agrifood systems will continue contributing to climate change.

38. **FAO support** as illustrated in Figure 1 consists of elements aligned with the core functions of the FAO Strategic Framework 2022–31, including capacity development, strategic partnerships, inclusive approaches, new policies, practices and technologies and improved access to financing. These are further elaborated under each of the Pillars in Section IV below.
39. The **PILLARS**, which constitute three mutually reinforcing lines of action at global, regional, country and local levels, are based on the understanding that moving towards the expected Outcomes, Impact and Vision requires simultaneous work at all three levels. The three Pillars contain elements of intertwined climate-resilient and low-emission development pathways:
- **Global and regional levels:** Strengthening global and regional climate policy and governance;
 - **Country level:** Developing countries' capacities for climate action; and
 - **Local level:** Scaling up climate action on the ground.
40. Six **OUTCOMES** at global and regional, country and local levels materialize through a combined effort of climate action by FAO and other stakeholders, including climate risk anticipatory and preventive measures, adaptation and mitigation (see the Figure). The Outcomes together can induce and accelerate the anticipated transformation across agrifood systems in a coherent manner according to, and dependent on, national contexts and capacities and along countries' own development pathways. FAO strives to ensure that all parts of agrifood systems, related livelihoods and ecosystems are mutually reinforcing, and climate vulnerability and risk analyses are conducted for the natural resources base, production, processing, marketing and consumption as well as for other sectors whose vulnerability can be reduced through actions towards sustainable agrifood systems.
41. The **IMPACT** refers to a milestone in a transformational process across agrifood systems that FAO can influence with its knowledge and other forms of support, but that is beyond FAO's exclusive control. The Strategy on Climate Change aims to achieve the following impact: **FAO Members and agrifood system stakeholders accelerate their climate action for agrifood systems to become MORE efficient, inclusive, resilient, low-emission and sustainable, leading to improved food security and nutrition.**
42. The **MAIN ASSUMPTIONS** underlying the Strategy on Climate Change and its implementation are as follows:
- Climate change remains a global priority despite uncertainties and delays in action and is to be tackled hand-in-hand with the COVID-19 pandemic and socioeconomic challenges.
 - Agrifood systems become widely recognized and adopted as an integral part of the solution to climate change.
 - Political will to prioritize and scale up climate action in general and across agrifood systems in particular is strong.
 - Climate financing, including for agrifood systems, is increased through vertical funds and other public and private sources in recognition of the scale and urgency of the action needed.

4.3. **PREREQUISITES FOR SUCCESSFUL CLIMATE ACTION** include the following:

- i. **FAO delivers efficiently.** FAO needs adequate human and financial resources in its headquarters and decentralized offices and to expand its in-house coordination, external collaboration and partnerships in order to efficiently respond to the increasing needs at global, regional, country and local levels. This will include, for example, investment in in-house capacity and human resources development, enhanced collaboration, coordination and communication of climate work and knowledge management, new initiatives as well as innovative public and private partnerships, strengthened climate finance mobilization and mainstreaming climate change in FAO areas of work. Coherence and collaboration need to be ensured between the Strategy on Climate Change and the FAO Strategic Framework 2022–31 and its PPAs, and other FAO recent strategies⁴² and the country programming frameworks. The Office of Climate Change, Biodiversity and Environment is responsible for the internal coordination of FAO’s climate-related work and will facilitate interactions and links with other FAO units, decentralized offices and programmes to promote efficiency and avoid duplication. The Strategy on Climate Change implementation will be aligned with the FAO data protection policy currently under development. Finally, the implementation of the FAO Corporate Environmental Responsibility Strategy 2020–2030 will contribute to the reduction of FAO’s own carbon footprint.
- ii. **Access to climate finance is scaled up.** It is key to integrate climate change considerations into domestic and international financing for agrifood systems development, including crops and livestock, forests and land use, fisheries and aquaculture. FAO will promote the provision of international and domestic climate finance and investments to agrifood systems. Vertical funds, in particular from the Green Climate Fund (GCF), Global Environment Facility (GEF), Adaptation Fund (AF) and multilateral development banks, together with other multilateral and bilateral funds, will continue to play an important role in strengthening FAO’s impact on the ground. Innovative climate finance opportunities will be explored, particularly in the context of the mechanisms being developed under Article 6 of the Paris Agreement. Aligning with the FAO Strategy for Private Sector Engagement 2021–2025, collaboration with the private sector will also be promoted through innovative partnerships and investments. FAO will support the preparation, implementation and monitoring of the projects of Members who request such support in order to increase the scale, scope and pace of their climate action. FAO will continue to use its unique comparative advantage to marshal climate finance for countries in a way that links global, regional, national and local priorities and helps to drive the climate agenda forward.

⁴² Such as, the FAO Strategy for Private Sector Engagement 2021–2025, the FAO Strategy on Mainstreaming Biodiversity across Agricultural Sectors, the Vision and Strategy for FAO Work in Nutrition, the FAO Science and Innovation strategy.



IV

THREE PILLARS FOR ENHANCED ACTION

44. The Strategy on Climate Change focuses on the three mutually reinforcing strategic Pillars set out below. The “accelerators” of the FAO Strategic Framework 2022–31, namely technology, innovation, data and complements (governance, human capital and institutions) as well as cross-cutting themes of gender, youth and inclusion, are all reflected in these Pillars. As part of the Action Plan, a dedicated communication plan for the general public and specialized audiences will support the implementation of the Pillars.

A. GLOBAL AND REGIONAL LEVELS: Strengthening global and regional climate policy and governance

45. This Pillar focuses on FAO’s global and regional advocacy to make inclusive agrifood systems part of the solution to climate change, with the following expected outcomes:

- Considerations of food security, nutrition, agrifood systems, natural resources and livelihoods are fully addressed in the international climate, environment, disaster risk, humanitarian and development agendas as part of the solution to address climate change, and climate finance for agrifood systems is supportive.
- The global community, countries and partners have access to and utilize data, science, evidence, tools, protocols, guidelines and standards related to climate change and agrifood systems that are collected and developed by FAO and partners, including for monitoring and reporting at Members’ request climate vulnerability and risk analyses, barriers to adaptation and adaptation cost analysis, assessment models and good practices and policies on climate resilience, adaptation and mitigation.

46. There is an urgent need to step up the debate on climate action in the areas of crops and livestock production, forestry, fisheries, aquaculture, related value chains and the livelihoods dependent on these sectors, food security and nutrition, water management

and the sustainable management and restoration of terrestrial and marine ecosystems. This can be facilitated by FAO's strengthened advocacy at regional and global levels. With these actions, FAO aims to contribute to higher profiling of agrifood systems as part of essential climate solutions, including leveraging necessary climate financing.⁴³ At the 26th session of the Conference of the Parties to the UNFCCC (COP26), countries agreed to continue working on the areas of policy discussion of the Koronivia joint work on agriculture⁴⁴ and strengthen ocean-based action⁴⁵ where aquatic food production has a critical role to play.

47. FAO is recognized for its trusted advisory role at international level regarding developmental and environmental processes, including the UNFCCC and the Paris Agreement, the 2030 Agenda, the Rio Declaration on Environment and Development, CBD, UNCCD, the Code of Conduct for Responsible Fisheries, the Ramsar Convention on Wetlands and the Sendai Framework for Disaster Risk Reduction 2015–2030. FAO's advocacy and support has been crucial in successfully advancing some UNFCCC actions, including through the Koronivia joint work on agriculture, supporting the integration of agriculture in NDCs and NAPs, REDD+⁴⁶ activities and the Marrakech Partnership for Global Climate Action. Upon request, FAO will continue supporting UNFCCC work and negotiation streams, subsidiary and constituted bodies (Adaptation Committee, Least Developed Countries Expert Group), and the enhanced transparency framework and the global stocktake under the Paris Agreement, in aspects relevant to agrifood systems.
48. Furthermore, it is important to recognize that climate change and biodiversity loss are interconnected challenges that should be addressed jointly. FAO can raise awareness and provide technical expertise at global, regional and national levels to enable coherence of climate and biodiversity planning, including through support to the development and implementation of the Post-2020 Global Biodiversity Framework.

49. **FAO WILL SUPPORT THE INTEGRATION OF AGRIFOOD SYSTEMS IN CLIMATE ACTION BY:**

- **continuing to engage in global and regional climate change and other fora** to advocate for and promote efficient, inclusive, resilient, low-emission and sustainable agrifood systems as part of the solution to address climate change, biodiversity loss and ecosystem degradation and part of a broader sustainability agenda;
- **supporting Members and partners in the identification, formulation, implementation and monitoring of relevant global and regional initiatives and pledges**, including those launched at COP26 (Global Methane Pledge, Glasgow Leaders' Declaration on Forests and Land Use and the African Union Green Recovery Action Plan), and in the preparations for the forthcoming sessions of the UNFCCC COP;

⁴³ Buto, O., Galbiati, G.M., Alekseeva, N. and Bernoux, M. 2021. Climate Finance in the Agriculture and Land Use Sector – Global and Regional Trends between 2000 and 2018. Rome, FAO.

⁴⁴ See UNFCCC documents FCCC/SBI/2021/16, paragraphs 42–53, and FCCC/SBSTA/2021/3, paragraphs 43–54.

⁴⁵ UNFCCC decision 1/CP.26, paragraphs 60–61.

⁴⁶ Reducing emissions from deforestation; reducing emissions from forest degradation; conservation of forest carbon stocks; sustainable management of forests; and enhancement of forest carbon stocks (UNFCCC decision 1/CP.16, paragraph 70).

- **continuing to facilitate better integration of agrifood systems considerations**, including crops, livestock, forests, fisheries, aquaculture and related value chains, ecosystems and livelihoods in the key workstreams under UNFCCC;
- **advocating for building the food-water-energy-forest nexus** to improve access to sustainable energy and energy efficiency and to enhance sustainable water management for adaptation across all agrifood systems;
- **continuing to advocate for** blue food systems/aquatic food systems, which better integrate the sustainable use of marine living resources with other uses of the ocean; and
- **advocating to ensure that the climate and environment financing agenda recognize and support** the contribution of sustainable agrifood systems to climate action.

50. **FAO WILL PROMOTE INNOVATION AND COLLABORATION BY:**

- **scaling up and expanding agricultural innovation**, including through engagement in global and regional partnerships and initiatives such as but not limited to the Agriculture Innovation Mission for Climate and the Global Action Agenda for Innovation in Agriculture, and aligning with the FAO Science and Innovation Strategy; and
- **fostering dialogue, interaction and exchange** of stakeholders across agrifood systems and other sectors affected by climate change, and biodiversity, environment and humanitarian development agendas.

51. **FAO WILL ENABLE AND ENHANCE THE USE OF DATA, INFORMATION, DIGITALIZATION AND SCIENCE TO TRIGGER ACTION BY:**

- **generating, collecting, analysing, validating, harmonizing and making accessible open data** as well as best available science, information, knowledge, good practices, innovations, tools and technologies (utilizing and building on existing FAO tools, including Ex-Act, GLEAM and FAOSTAT data) on climate change, adaptation and mitigation across agrifood systems to the global community, partners and decision-makers at different levels;
- **updating the knowledge base on the impacts of climate change on agrifood systems**, identifying and closing global knowledge gaps and balancing potential trade-offs between climate and other SDGs;
- **contributing to science and evidence generation for carbon sequestration** in croplands, pastures, rangelands, forests, peatlands and other wetlands, oceans and other aquatic environments, reducing CO₂, CH₄ and N₂O emissions from agrifood systems, as appropriate, and if applicable, supporting the design of carbon market mechanisms for agrifood systems that are inclusive and accessible to agrifood producers; and
- **mainstreaming consideration of climate risks into FAO corporate systems and programming** through the identification of climate risks as a separate standard in FAO's upgraded environmental and social safeguards system and their integration into FAO's project cycle.

B. COUNTRY-LEVEL: Developing countries' capacities for climate action

52. FAO works as a catalyst for its Members to identify, prioritize and achieve their climate objectives for agrifood systems. This Pillar focuses on context-specific, transformative and country-driven climate action often backed up by partnering and collaboration, leveraging financing and strengthening sustainable agrifood systems as part of the solution to address climate change, with the following expected outcomes:

- FAO Members implement, monitor and report their climate commitments as outlined in their agrifood system strategies and/or climate change strategies, link them with the other commitments and tracking for sustainable development, including through their regular reporting to UNFCCC under the enhanced transparency framework and other international reporting frameworks.
- FAO Members mainstream climate resilience, adaptation and mitigation in their policies and legislation, plans, programmes, practices and domestic and international investments across agrifood systems, including through FAO country programming frameworks and the United Nations Sustainable Development Cooperation Frameworks.

53. While addressing climate change challenges at the country level, effective synergies and links are explored between climate change and agrifood relevant areas such as disaster risk reduction, conservation and sustainable use of biodiversity, including protection of pollinators, ecosystem restoration, soil health and erosion control, plant and animal health, integrated land and water resources management, energy efficiency, land tenure and collective territorial rights, ocean acidification, combating desertification, halting deforestation and land degradation, and improved food security, safety and nutrition.

54. **FAO WILL ENHANCE ITS ASSISTANCE TO:**

- **support countries in developing their capacities in climate change negotiations** under the UNFCCC umbrella, at their request, including for designing, implementing and updating national commitments related to transforming agrifood systems and reversing biodiversity loss, including in NDCs, NAPs, REDD+ strategies and long-term low greenhouse gas emission development strategies;
- **support countries in strengthening their research, extension, training institutions and innovation systems** in line with the FAO Science and Innovation Strategy in order to better respond to climate change challenges, including identifying, developing and disseminating country-specific and locally adapted solutions as well as preparedness to handle and recover from climate disasters;
- **support countries in scaling up anticipatory action, early warning systems, analysis and planning** to contribute to building resilience and to the humanitarian-development-peace nexus;
- **enhance countries' capacities to generate, collect, monitor, analyse and report, and utilize the data and information** needed for climate action and advance digitalization, including geographic information system (GIS) technologies; and



- **support countries at their request in setting baselines, monitoring and reporting** on progress in their climate commitments, including through supporting the development of monitoring and evaluation, and emissions and carbon sequestration measuring, reporting and verification systems, including CO₂ and other greenhouse gas metrics under the enhanced transparency framework and other international reporting frameworks.

55. **FAO WILL ENHANCE PARTNERSHIPS AND ACCESS TO CLIMATE FINANCING BY:**

- **providing support to countries to access financial resources to carry out adaptation and mitigation measures at scale** through leveraging evolving financing sources and mechanisms;
- **providing support to countries to prioritize and allocate international and domestic finance to climate action across agrifood systems;** and
- **providing support to countries to identify and establish strategic public and private partnerships** with regional, national and local organizations, including farmers' organizations, civil society, RBAs and other United Nations agencies, research organizations and financial institutions and through South–South and Triangular Cooperation for accelerating climate action.

56. **FAO WILL PROMOTE ADOPTION OF GOOD PRACTICES AND INNOVATIVE SOLUTIONS BY:**

- **providing support for identifying and scaling up existing good practices and innovative technological, social, policy, legislative, financial and institutional solutions** in support of climate action; and
- **supporting countries in building synergies and addressing trade-offs** between short- and longer-term climate action measures and outcomes, as well as climate action and action under relevant SDGs, including through agroecological and other innovative approaches⁴⁷, integrated landscape and ecosystem approaches, noting that there are many approaches to sustainable agriculture production and value-chain development.

⁴⁷ Innovative approaches including among others, sustainable intensification, no-till farming, organic agriculture, and all other innovations and technologies to promote sustainable agrifood systems.

57. **FAO WILL MAINSTREAM EQUALITY AND INCLUSIVENESS WITH A VIEW TO ENSURING THAT NO ONE IS LEFT BEHIND:**

- **through promoting livelihood** opportunities, inclusiveness, effective integration and engagement of women, youth and legitimate tenure rights holders, including Indigenous Peoples, marginalized and minority groups and persons with disabilities, in country-level climate planning, decision-making and action; and through providing technical, legal and policy support for inclusive and gender-transformative climate policies, legislation and action; and
- **through supporting countries particularly at risk** and affected by the changing climate, especially Small Island Developing States, the least developed countries and **landlocked developing countries, in developing specific resilience and adaptation** actions.

58. **FAO WILL PROVIDE POLICY AND LEGAL SUPPORT BY:**

- **promoting the mainstreaming of climate change considerations** into national and subnational policies, legal and institutional frameworks, strategies and development and financing plans and budgeting across agrifood systems, national social protection systems and other key sectors, as appropriate;
- **supporting countries at their request in incorporating agrifood systems considerations** into their national strategies and plans, including NAPs, NDCs, long-term low greenhouse gas emission development strategies, disaster risk reduction plans and humanitarian response plans;
- **supporting countries at their request in integrating overlapping climate and biodiversity considerations** into relevant national plans (NDCs, NAPs, National Biodiversity Strategies and Action Plans, long-term low greenhouse gas emission development strategies, land-degradation neutrality targets) and coherently integrate biodiversity in NDCs and climate objectives in National Biodiversity Strategies and Action Plans; and,
- **promoting policy and legal reforms** that support and enable climate resilience, adaptation and mitigation.

C. LOCAL LEVEL: Scaling up climate action on the ground

59. This Pillar aims to accelerate FAO support in collaboration with and complementing the efforts of other agencies, including the RBAs, across agrifood systems for sustainable local development and empowerment, particularly for those women and men who are most at risk of the changing climate across agrifood systems, including rural, peri-urban and urban smallholder farmers, livestock keepers, pastoralists, foresters, forest-dependent people, fishers, aquaculturists, workers at different parts of food value chains, women's groups, youth, children, Indigenous Peoples, persons with disabilities, and marginalized and minority groups to gradually reduce vulnerability with the following expected outcomes:



- Actors strengthen resilience and adaptive capacity through climate risk management and adaptation, especially in areas most vulnerable to climate change, reducing risks and enhancing sustainability of agrifood systems, ecosystems and related livelihoods.
 - Actors contribute to low-emission development pathways through more resilient and adapted agrifood systems with mitigation co-benefits.
60. FAO aims at inclusive and gender-transformative engagement of actors across agrifood systems and their communities, groups and value chains to improve access to knowledge, good practices, innovation and financing to promote sustainable local development while tackling food security and nutrition, climate resilience, adaptation and mitigation challenges, and taking other environmental and socioeconomic concerns into consideration. The solutions for small- and larger-scale farmers and other actors vary across locations and priorities, capacities and assets for adaptation and mitigation towards sustainable development. FAO will thus enable local stakeholders to directly benefit from the adoption of inclusive, climate-resilient and low-emission agrifood practices and approaches in farms, watersheds, landscapes and seascapes along the food value chains.
61. **FAO WILL SUPPORT LOCAL ACTORS BY:**
- **empowering farmers, fishers and aquaculturists, forest managers, forest-dependent people, land managers, local groups and communities, and other local actors with knowledge and innovative solutions related to agrifood systems and climate change**, by promoting peer-to-peer learning (e.g. Farmer and Pastoralist Field Schools), other types of education, extension and training, the use of digital technologies to scale up knowledge exchange, lowering the barriers to adoption of good practices and enhancing access to and sustainable use of natural and financial resources; and
 - **enhancing existing and developing new partnerships and initiatives, including through South–South and Triangular Cooperation** to support farmers and other local actors in identifying and engaging with relevant partners and, as appropriate, organizing themselves in groups, associations and cooperatives to be better positioned to take climate action.

62. **FAO WILL PROMOTE GOOD PRACTICES AND INNOVATIONS BY:**

- **providing support to climate risk management** through providing more accurate information on anticipated climate impacts at local level and making available low-cost, inclusive and easily accessible climate risk management measures, including early warning mechanisms;
- **exploring and promoting good adaptation practices and innovative approaches** and related co-benefits tailored to local conditions, landscapes and seascapes as well as to the needs of different groups, including women, men and youth, and integrating local and indigenous knowledge;
- **exploring and promoting low emission results**, including for CO₂, CH₄ and N₂O emission reduction and carbon sequestration, as appropriate, while considering potential trade-offs, risks of maladaptation and transition risks associated with moving towards low-greenhouse gas development pathways;
- **sharing of good practices from sustainable and inclusive business models** across agrifood systems; and
- **raising awareness and developing capacities among local actors, groups and communities**, including those of Indigenous Peoples, to better understand and benefit from climate financing, such as evolving carbon market opportunities for the agricultural sectors, including carbon sequestration and offsetting schemes and other schemes of payment for environmental services, and related monitoring systems when made available.

IMPLEMENTING THE STRATEGY AND MEASURING ITS SUCCESS

63. FAO will implement the Strategy on Climate Change based on its mandate and comparative advantage as the world's leading agrifood systems knowledge agency for normative work, technical cooperation, capacity development, policy and dialogue, and supporting action from global to local levels. FAO plays a key role in providing: i) international technical expertise across agrifood systems and natural resources management associated with an active presence in countries; ii) advocacy and normative roles influencing the international debate and global and regional agreements, as well as the development of guidelines, tools, approaches and standards in a neutral forum; iii) data collection and analysis to support informed policies and decision-making, and the development of indicators to monitor progress; iv) support to institutional development, governance and planning; and v) support to Members in mobilizing public and private resources, investment support and promotion of South-South cooperation. Furthermore, FAO offers an invaluable and neutral platform for the science-policy-practice interface, supporting the implementation of various international initiatives, agreements and treaties, and helping to put science into practice. FAO's normative role combined with its broad technical and policy expertise in natural resources management and all aspects of the agricultural sectors places FAO at the forefront of facilitating dialogue and exchange of experience and knowledge and supporting Members and partners in climate action across agrifood systems.
64. An Action Plan will be developed to guide the implementation of the FAO Strategy on Climate Change 2022–2031. To enable monitoring and reporting at Member countries' request on the progress and impact of the Strategy on Climate Change implementation, the Action Plan will comprise outcomes, outputs, indicators, targets, timelines and responsibilities. This will entail setting specific indicators and targets for FAO's climate action that are adequately disaggregated to capture the effects and impacts of interventions on different population segments, including on men, women, youth, Indigenous Peoples and marginalized groups. These indicators and targets will – to the extent possible – be harmonized with those of the FAO Strategic Framework 2022–31 and its PPAs as well as the 2030 Agenda and its SDGs. They will also be aligned with the Paris Agreement milestones and the Sendai Framework monitoring system and with the ongoing work on the development of international adaptation metrics.

65. Furthermore, the Action Plan will set out the ways in which FAO will enhance its own operational modalities to deliver climate action under the three pillars of the strategy in an efficient and coherent manner. In particular, the Action Plan will address the capacity development, resource mobilization, partnerships and communication needed for the Strategy on Climate Change implementation. Based on a capacity needs assessment, the learning, knowledge and capacities of the FAO headquarters and decentralized offices will be addressed. A resources mobilization plan, including a core budget and external climate financing through diversified partnership and financing agreements, will be developed as part of the Action Plan. A targeted communication plan will be created to raise awareness of the links between climate change, poverty, inequality, food security and nutrition and reinforce FAO's leading role in addressing climate change across agrifood systems. Moreover, sharing existing knowledge, good practices and novel solutions to address climate challenges through efficient communication will enable timely climate action at different levels. Enhancing South-South and Triangular Cooperation and expanding for example the use of the FAO Hand-in-Hand geospatial platform⁴⁸ are important for the exchange of information and knowledge, including the outcomes of research on tropical agriculture, forestry and fisheries among countries and agrifood systems actors.
66. Finally, the Action Plan will consider external stakeholders from a wide range of sectors to become key partners for the implementation of the strategy at global, regional, national and local levels. Within FAO, climate work guided by the Strategy on Climate Change and its Action Plan will involve all levels and units to ensure a shared ownership across the organization. The Office of Climate Change, Biodiversity and Environment will be responsible for the coordination of the implementation of FAO's climate work across the organization and for monitoring and reporting on the progress and impact of the Strategy on Climate Change implementation at corporate level.
67. The Council will discuss a mid-term review 5 years after the adoption of the Strategy on Climate Change.

⁴⁸ www.fao.org/hih-geospatial-platform/en/about/index

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GLOSSARY

Adaptive capacity

(IPCC, 2022b). The ability of systems, institutions, humans and other organisms to adjust to potential damage, to take advantage of opportunities, or to respond to consequences

Agrifood systems

(FAO, 2021c). The agrifood system covers the journey of food from farm to table – including when it is grown, fished, harvested, processed, packaged, transported, distributed, traded, bought, prepared, eaten and disposed of. It also encompasses non-food products that also constitute livelihoods and all of the people as well as the activities, investments and choices that play a part in getting us these food and agricultural products. In the FAO Constitution, the term “agriculture” and its derivatives include fisheries, marine products, forestry and primary forestry products.

Agroecological approach

(FAO, 2019c). Agroecology is one approach, among others, to contribute to feeding sustainably a growing population and support countries in achieving SDGs. Agroecology considers the interactions among key environmental, social and economic characteristics that are typical of diversified agricultural systems. It recognizes the great potential of knowledge sharing, and deepened understanding, that favour

the behavioural changes in food systems that are required for sustainable agriculture to become a reality.

Biological diversity

(CBD, 1992). The variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems.

Capacity development

(FAO, 2019b). System-wide capacity development aims to achieve more impactful, transformational and sustainable results at scale by enabling countries to own and lead their endogenous development process aligned with national priorities. Operationally, system-wide capacity development interdependently enables and empowers people, strengthens organizations, networks, collective action mechanisms and multi-stakeholder processes as well as fosters a more conducive enabling policy and governance environment.

Climate change

(IPCC, 2022b). A change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period, typically decades or longer. Climate change may be due to natural internal processes or external forcings such as modulations of the solar cycles, volcanic eruptions and persistent anthropogenic changes in the composition of the atmosphere or in land use. Note that the United Nations Framework Convention on Climate Change (UNFCCC), in its Article 1, defines climate change as: ‘a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods’. The UNFCCC thus makes a distinction between climate change attributable to human activities altering the atmospheric composition and climate variability attributable to natural causes.

Climate change adaptation

(IPCC, 2022b). In human systems, the process of adjustment to actual or expected climate and its effects, in order to moderate harm or exploit beneficial opportunities. In natural systems, the process of adjustment to actual climate and its effects; human intervention may facilitate adjustment to expected climate and its effects.

Climate change mitigation

(IPCC, 2022a). A human intervention to reduce emissions or enhance the sinks of greenhouse gases.

Climate extreme

(extreme weather or climate event) (IPCC, 2021) The occurrence of a value of a weather or climate variable above (or below) a threshold value near the upper (or lower) ends of the range of observed values of the variable. By definition, the characteristics of what is called extreme weather may vary from place to place in an absolute sense. When a pattern of extreme weather persists for some time, such as a season, it may be classified as an extreme climate event, especially if it yields an average or total that is itself extreme (e.g., high temperature, drought, or heavy rainfall over a season).

Desertification

(UNCCD, 1994). Land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities.

Disaster risk reduction

(UNGA, 2016). Disaster risk reduction is aimed at preventing new and reducing existing disaster risk and managing residual risk, all of which contribute to strengthening resilience and therefore to the achievement of sustainable development.

Ecosystem

(CBD, 1992). A dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit.

Ecosystem approach

(CBD, 2000). The ecosystem approach is a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way.

Emission

(UNFCCC, 1992). Release of greenhouse gases and/or their precursors into the atmosphere over a specified area and period.

Greenhouse gases

(UNFCCC, 1992). Those gaseous constituents of the atmosphere, both natural and anthropogenic, that absorb and re-emit infrared radiation.

Healthy diet

(adapted from FAO *et al.* 2021). Healthy diets are those diets that are of adequate quantity and quality to achieve optimal growth and development of all individuals and support functioning and physical, mental and social well-being at all life stages, and that help to protect against malnutrition in all its forms. The exact make-up of healthy diets varies depending on individual characteristics (e.g. age, gender, lifestyle). They are diversified, balanced and safe and should limit the intake of saturated and trans-fats, added sugars and sodium.

Innovation

(UNIN, 2019). Innovation consists of doing something new and different whether solving an old problem in a new

way, addressing a new problem with a proven solution, or bringing a new solution to a new problem. Agricultural innovation (FAO, 2019c) is the process whereby individuals or organizations bring new or existing products, processes or ways of organization into use for the first time in a specific context in order to increase effectiveness, competitiveness, resilience to shocks or environmental sustainability and thereby contribute to food security and nutrition, economic development or sustainable natural resource management. In the context of agrifood systems, innovation (HLPE, 2019) is used as a verb (to innovate) referring to the process by which individuals, communities or organizations generate changes in the design, production or recycling of goods and services, as well as changes in the surrounding institutional environment, that are new to their context and foster transitions towards sustainable food systems for food security and nutrition. Innovation is also used as a noun to refer to the changes generated by this process. Innovation includes changes in practices, norms, markets and institutional arrangements, which may foster new networks of food production, processing, distribution and consumption that may challenge the status quo.

Nutrition

(FAO, 2013b). The intake of food and the interplay of biological, social and economic processes that influence the growth, function and repair of the body.

Partnership

(FAO, 2013a). Cooperation and collaboration between FAO units and external parties in joint or coordinated action for a common purpose. It involves a relationship where all parties contribute to the output and the achievement of the objectives rather than a solely financial relationship.

Private sector

(FAO, 2021b). FAO considers the private sector to encompass a broad array of entities, ranging from farmers, fishers and micro, small and medium-sized enterprises (including cooperatives, farmers', fishers' or producers' organizations and social enterprises) to large firms, domestic and multinational companies and philanthropic foundations. This includes industry and trade associations and consortia that represent private sector interests. Any consortium, organization or foundation largely funded or governed by private entities will be considered private sector, as well as state-owned enterprises.

Resilience

(United Nations, 2021). Resilience is the ability of individuals, households, communities, cities, institutions, systems and societies to prevent, resist, absorb, adapt, respond and recover

positively, efficiently and effectively when faced with a wide range of risks, while maintaining an acceptable level of functioning without compromising long-term prospects for sustainable development, peace and security, human rights and well-being for all.

Sink

(UNFCCC, 1992). Any process, activity or mechanism which removes a greenhouse gas, an aerosol or a precursor of a greenhouse gas from the atmosphere.

Source

(UNFCCC, 1992). Any process or activity which releases a greenhouse gas, an aerosol or a precursor of a greenhouse gas into the atmosphere.

Vulnerability

(UNGA, 2016). The conditions determined by physical, social, economic and environmental factors or processes which increase the susceptibility of an individual, a community, assets or systems to the impacts of hazards.

