

Thematic Evaluation Series

Evaluation of FAO's support to climate action (SDG 13) and the implementation of the FAO Strategy on Climate Change (2017)

Sector level study in agriculture

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2021

Contents

| | | |
|----|--|---|
| 1. | Background | 1 |
| 2. | Methodology | 2 |
| 3. | Climate change projects in agriculture: an overview | 3 |
| 4. | Findings | 4 |

1. Background

1. At its 127th session,¹ the Food and Agriculture Organization of the United Nations (FAO) Programme Committee endorsed the Rolling Work Plan for Evaluations 2020-2022, entailing an evaluation of FAO's support to climate action (SDG 13) and the implementation of the FAO Strategy on Climate Change (2017); hereafter referred to as the SDG 13 Evaluation. Given the strong relationship between the targets of SDG 13 and the United Nations Framework Convention for Climate Change (UNFCCC), the evaluation also included the contribution of FAO to the commitments of the Paris Agreement (2015). The evaluation of climate action is the second SDG-based evaluation conducted by the FAO Office of Evaluation (OED) after the SDG 2 - Zero Hunger evaluation (hereafter referred to as SDG 2+ Evaluation). The SDG 13 Evaluation builds on the conceptual and methodological basis established by the SDG 2+ Evaluation.²
2. With a multitude of initiatives that deal with mitigation and adaptation, FAO works towards the adoption of low carbon development pathways and the achievement of climate-resilient development. It does so through initiatives that directly target climate action (the combination of activities that contribute to adaptation to and mitigation of the effects of climate change), but also indirectly, through initiatives in other focus areas that also contribute to climate action. The vast majority of FAO's work, be it on agricultural production, animal husbandry, fisheries, forestry or food systems, relates to climate adaptation and/or mitigation. So while its main focus is to contribute to other global goals, such as poverty reduction (SDG 1), zero hunger (SDG 2), life below water (SDG 14) and life on land (SDG 15), by doing so, it also contributes to climate action. Important cross-cutting themes such as gender equality, nutrition, good governance, indigenous peoples and human rights also interact with climate action in various ways. Finally, the inclusion of climate change as a cross-cutting theme in FAO's Strategic Framework implies that the potential positive or negative impact of any FAO activity on climate change should be assessed and understood, regardless of whether such activities directly or indirectly target climate action. Therefore, the SDG 13 Evaluation will cover the entire FAO portfolio and institutional structure to assess its contribution to SDG 13 targets directly or indirectly through other SDG targets.
3. The SDG 13 evaluation assessed all FAO contributions to climate action as well as trade-offs from other FAO work with climate action and therefore, it had to cover the entire extent of FAO's work, at all levels (global, regional, country). The evaluation focused on eight sectors,

¹ FAO. 2019. *Report of the 127th Session of the Programme Committee (Rome, 4-8 November 2019)*. (also available at: <http://www.fao.org/3/na582en/na582en.pdf>).

² FAO. 2020. *Evaluation of FAO's support to Zero Hunger (SDG2)*. FAO, Rome. (also available at: <http://www.fao.org/3/nc852en/nc852en.pdf>).

namely those FAO areas of work with initiatives that most directly related to climate change. For each of these sectors, all evaluation questions were analyzed by individual evaluators. Information to respond the evaluation questions was gathered by reviewing documentation (project documents, publications, country planning framework, etc.) and interviews with FAO staff and representatives from partner agencies in the country. One of the sectors is agriculture, with specific reference but not limited to, Climate Smart Agriculture (CSA). Because livestock is analyzed as a separate sector, in this evaluation agriculture is limited to crop-based production systems (crops-agriculture). This report presents the main findings of the sector study on agriculture, ordered alongside the evaluation questions (EQ) of the overall SDG 13 Evaluation.

2. Methodology

The methodology involved:

- i. Initial support-studies done during inception of the SDG 13 evaluation (mapping of FAO's portfolio and its contribution to SDG 13; synergies and trade-offs between different SDG; meta-analysis of OED climate change-related evaluations; meta-analysis of OED Global Environment Facility (GEF) project evaluations; analysis of the contribution of international development partners to SDG 13 (UN agencies, international financing institutions [IFIs], bilateral cooperation agencies and research institutes) to identify FAO's institutional niche in relation to other development partners; evaluation of the program 'Integrating Agriculture in National Adaptation Plans' (NAP-Ag).
- ii. Desk reviews of available information about the climate change projects in agriculture portfolio, which included Commission on Agriculture (COAG) documents, strategic frameworks, knowledge products, project documents (design, progress and evaluation reports), publications, and additional information supplied by the key informants (FAO and non-FAO) by email.
- iii. Online interviews with FAO staff (at headquarters [HQ], regional and sub-regional offices) who work with agriculture and climate change. Interviewed persons at HQ working at the Office of Climate Change, Biodiversity and Environment (OCB), Plant Production and Protection Division (NSP) and Land and Water Division (NSL). As the evaluator for the agriculture sector was also charged with the Ecuador country-case study, interviews for that country also served for the agriculture sector study.
- iv. Online interviews with non-FAO stakeholders at the global level who partner with FAO in the area of agriculture and climate (World Bank, Research Program on Climate Change, Agriculture and Food Security [CCAFS], World Wide Fund for Nature [WWF]), to obtain their views on FAO's work on mainstreaming climate change in the sector.
- v. Specific case studies were undertaken in 13 countries that constituted a representative set for FAO's country support in climate action (Ecuador, Fiji, Haiti, Honduras, Jordan, Kenya, Nepal, Senegal, Turkey, Bangladesh, Viet Nam, Uganda, Uruguay). All of these studies included attention to work on crops-agriculture and climate change and several were important for implementation of CSA projects. Results from these case-studies were considered in this sectoral report.
- vi. Two surveys were done, an internal survey among FAO staff and an external survey among partner agency staff. These surveys aimed at obtaining the opinion of a large number of persons about the work of FAO in climate action in general, its strengths and weaknesses. Agriculture in general and CSA was included directly in several survey questions.

4. Being part of the SDG 13 evaluation, the agriculture sector study benefitted from information that was gathered by other members of the SDG 13 evaluation team for other sector studies (forestry, livestock, fisheries, food systems, disaster risk reduction, gender, climate financing/investment centre). The outputs of all elements of the methodology (reports from support studies, other sectoral studies, country case-studies, surveys), as well as the total list of interviewed persons for the overall evaluation, can be found as annexes to the main SDG 13 Evaluation report.

3. Climate change projects in agriculture: an overview

5. During the inception stage of the present evaluation, a project portfolio analysis was done on 3 316³ projects implemented during 2015-2020. It was not possible to select exactly the crop production/agriculture projects, as there are no clear markers for this distinction; many projects have a crops-agriculture aspect, even when this is not a main focus. In total, 489 projects were selected, based on having "agriculture" or "agricultural" as keywords in project title and/or objective, categorized as contributing principally to SDG 2 (zero hunger) and not dealing with livestock.
6. For 199 (41 percent) of all selected projects, a direct or indirect relationship with climate change could be established: eighty-six had a focus on SDG 13 along with their main focus on SDG 2 and 133 has a possible effect on SDG 13. For 59 percent of all crops-agriculture projects, no relation of climate work could be established. Of all projects, 31 percent were implemented in Africa and 18 percent in both Asia and Latin America and the Caribbean. Sixteen percent of all projects were interregional. The 199 that had a relation to climate (either as a focus or possible impact), had the same distribution over regions (most in Africa, Latin America and Asia).
7. It is no surprise that most crops-agriculture projects have been implemented by the Agriculture and Consumers Protection Department (26 percent) and the Economic and Social Development Department (28 percent), followed by Regional Offices (13 percent) and the Climate, Biodiversity, Land and Water Department (10 percent).⁴ The projects that had climate as a co-benefit, were also implemented mostly by the Agriculture Department (33 percent) followed by the Climate, Biodiversity, Land and Water department (22 percent) and the Regional Offices (13 percent).
8. The total budget was USD 775 million. FAO's own budget supported more than half of all initiatives in crops-agriculture (256) but in terms of funding, it covered 9 percent of the total. The main donors in terms of funding are the European Union (22 percent, through 29 projects), national governments (19 percent, through 37 projects) and bilateral development assistance centers (14 percent, through 71 projects). Multi-source funded projects (different donors) also covered 14 percent. The budget for the 199 climate related crops-agriculture projects was USD 428 million. The main donors were national governments (27 percent), European Union (20 percent) and GEF (14 percent). The latter was the largest funder of projects that has a clear climate co-benefit (SDG 13+).

³ All projects, excluding: cancelled or not approved, TCP facilities and Telefood projects, and human resources-related.

⁴ For this analysis, the names of the FAO departments from before June 2019 were used.

4. Findings

EQ 1. Is FAO making a relevant and effective contribution to globally agreed climate action targets?

1.1 What have been FAO's main contributions (direct and indirect through other SDGs) to the SDG 13, and to the Paris Agreement, and how relevant are such contributions?

Finding 1. FAO has contributed to mitigation and adaptation in the agriculture sector through the development of the concept of CSA and its application in several field-based projects and development of technical tools. In several countries, it has influenced the policy framework on agriculture by including sustainability criteria. Elements of CSA have been included in several National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDC).

Finding 2. Greenhouse gas (GHG) emissions and stock monitoring is under development in the agriculture sector. FAO has developed important tools for mitigation impacts of agriculture such as Global Livestock Emissions Assessment Model (GLEAM) for livestock, Ex-Ante Carbon-balance Tool (EX-ACT), Global Soil Organic Carbon Map (GSOCmap) and general tools included in Open Foris. These are applied to CSA initiatives in many places and increasingly tend to include other GHGs such as methane (CH₄) and nitrous oxide (N₂O) in addition to carbon dioxide (CO₂). At the global level, these have also been used under UNFCCC climate change negotiation processes, the Intergovernmental Panel on Climate Change (IPCC) and in policy dialogue. Most countries report agriculture emissions through FAOSTAT although this is not standard. Adaptation metrics in agriculture are less developed.

Finding 3. At the national level, FAO's climate programs take a project approach to support countries to develop climate action practice in agriculture and mainstreaming climate actions into sectoral plans and programs (Nationally Appropriate Mitigation Actions [NAMAs], NAPs and NDCs). The work of FAO extends to piloting and analyzing technical options for sustainable agriculture and landscape management through targeted projects and investments with considerable impact locally but not yet much mainstreaming nationally.

Finding 4. Most initiatives of FAO aim principally at other SDG's, with concrete climate change adaptation and mitigation (CCAM) co-benefits. While these contributions are relevant and can be significant, climate change is not explicitly mainstreamed in a strategic manner, collaboration between different sectors is not stimulated and some important climate change related achievements remain unreported.

9. FAO has contributed to adaptation and mitigation through the development, application, promotion and training of the concept of CSA, as well other concepts that target climate action as a co-benefit of environmentally and socially sustainable farming systems like agroecology, agroforestry and conservation agriculture. This has helped to reduce GHG emissions and support resilience of many people. There are no aggregate figures of GHG emissions or number of benefitting people available, but evidence from project results show that these have created resilience among hundreds of thousands of people. FAO implemented projects to promote CSA practices by producers of different crops, providing climate information services market access. CSA is a concept that combines sustainable productivity, adaptation to climate change and emissions reductions. FAO was one of the first agencies to promote the concept. Apart from the field-based stakeholder support projects – with or without a national policy component – there were also a series of individual projects that specifically generated policy support and normative work.
10. FAO has developed a series of normative products that contributed to countries' capacity to plan, implement, monitor and report on climate action, both targeting climate mitigation

and adaptation. Tools like the land use portal of FAOSTAT, and particularly its land use domain contains data on 47 categories of land use, irrigation and agricultural practices, relevant to monitor agriculture, forestry and fisheries activities at national, regional and global level. Nineteen domains in FAOSTAT are related to emissions from different agriculture and land use systems. Data are available by country and year, with global coverage and annual updates.

11. In agriculture and livestock, emissions reduction and its monitoring are emerging. Since the 2009 United Nations Climate Change Conference, the Mitigation of Climate Change in Agriculture (MICCA) program was launched. This program targets GHG emissions reduction in agriculture through promotion of CSA, through the development of tools for GHG measurement and reporting on GHG emissions originating from agriculture and, especially, through capacity building in a series of countries (21) in Asia, Africa and Latin America. Rather than measuring and reporting emissions data, MICCA makes the FAOSTAT data available to countries and helps to interpret and develop data.⁵ This is key for Member Nations in improving their national capacity to address the UNFCCC reporting requirements and to design climate policy actions (i.e. GHG inventories, NAMAs and NDCs) for the agriculture, forestry and other land use (AFOLU) sector. Many NDC's mention climate-smart agriculture or similar concepts, thanks to FAO's support (64 in 2020).
12. In 2014, in partnership with European research institutes, FAO developed an integrated package of models to assess the impacts of climate change on agriculture (including forestry), water resources and the national economy. This package, MOSAICC (Modelling System for Agricultural Impacts of Climate Change), aims to assess the threats and opportunities presented by climate change to agricultural systems and food security, and develop ways to adapt agricultural systems to the impacts of climate change. MOSAICC has been applied to eight countries.
13. In response to the need for harmonized evidence on agroecology, FAO and a number of partners have developed the Tool for Agroecology Performance Evaluation (TAPE)⁶. TAPE is meant to provide evidence to policy makers and other stakeholders on how agroecology can contribute to sustainable food and agricultural systems. Recognized by COAG 2018 that agroecology includes *inter alia* climate change elements of the 2030 Agenda, TAPE includes resilience as one of its 10 Elements of Agroecology and touches upon mitigation as well as adaptation from agroecology. TAPE even on a testing phase, is way more advanced than other GKP, being tested on several countries, can bring something new to the way the analysis is so far, mostly focussed as DRR/M, is important to make the link on what to do next to re-shape the food system to adapt and build resilience to future shocks.
14. Based on various existing assessment frameworks, TAPE is a comprehensive tool that aims to measure the multi-dimensional performance of agroecological systems across the different dimensions of sustainability. It applies a stepwise approach at the household/farm level but it also collects information and provides results at a community and territorial scale. The tool was designed to remain simple and to require minimum training and data collection.
15. FAO's forest activities have a longer history with the development of knowledge products, tools and assessments than other sectors such as agriculture and fisheries, because forestry

⁵ Based among others, on the general knowledge product *Estimating Greenhouse Gas Emissions in Agriculture: A Manual to Address Data Requirements for Developing Countries*.

⁶ <http://www.fao.org/agroecology/tools-tape/en/>

was included earlier in global climate agreements than agriculture. Part of the tools developed for forestry (e.g. Open Foris and its System for Earth Observation Data Access, Processing and Analysis for Land Monitoring (SEPAL), Collect Earth and Collect) apply to land use and therefore, agriculture as well. Also, the forest activities is broadening to a sustainable forest landscape (SFL) approach, that includes land use and agriculture within the forest landscape.⁷ These tools and approaches from the forest sector are a major achievement which contributes directly to SDG 13 and Paris agreement, including benefits for the crops-agriculture sector.

16. At the national level, FAO's climate programs take a project approach to support countries to develop climate action practice in agriculture and mainstreaming concepts such as CSA into sectoral plans and programs (NAMAs, NDCs, NAP). The work of FAO extends to piloting and analyzing technical options for sustainable agriculture and landscape management through targeted projects and investments with considerable impact locally, but not yet much mainstreaming nationally. A FAO program that connects field-based information with economics and policy innovation for CSA is the Economic and Policy Analysis of Climate Change (EPIC) program. This program supports five partner countries, with the goal of transforming and re-orienting agricultural systems to address the challenges of climate change. EPIC does so through a holistic and integral analysis understand the synergies and tradeoffs between food security, adaptation and mitigation of climate change.
17. Drylands agriculture is an important line of work in CSA. It is implemented by several divisions in FAO and require further coordination. There is support to dryland agriculture in the land and water division through the Global Framework on Water Scarcity in Agriculture (WASAG⁸) and in Climate and Environment Division (CBC; now OCB)⁹ through the mentioned GEF Drylands Impact Program. FAO oversees the Pastoralist Knowledge Hub to improve pastoralists' production and health practices in agro-pastoral production and has developed the tool of Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP).¹⁰ In the 27th session of the Commission on Agriculture (COAG; October 2020), a Global Program on Sustainable Dryland Agriculture in a Changing Climate was launched, in collaboration with the WASAG. This program is an ideal opportunity to mainstream dryland agriculture work and climate action in the different divisions (OCB, GEF, land and water, NSP, animal production and health).¹¹
18. The NAP-Ag, jointly coordinated by the United Nations Development Programme (UNDP) and FAO, has been working with eleven countries to identify and integrate climate adaptation measures into national planning and budgeting processes, in support of achieving the SDG and the Paris Agreement. While it does not directly focus on crops-agriculture or CSA, it does support the countries capacities to mainstream climate

⁷ For instance, international partners launched the BioCarbon funds' Integrated Sustainable Forest Landscape as a second and third phase REDD+ implementation, which includes both forest conservation, restoration and sustainable agricultural practices.

⁸ FAO. No date (n.d.). *Land & Water – overview* [webpage]. In: FAO [online]. Accessed at: <http://www.fao.org/land-water/overview/WASAG/en/>

⁹ In June 2020, a new FAO organizational structure was presented including the installation of the Office for Climate, Biodiversity and Environment (OCB) that includes the work of CBC.

¹⁰ FAO. n.d. *In action – Self-evaluation and Holistic Assessment of climate Resilience of farmers and Pastoralists (SHARP)* [webpage]. In: FAO [online]. Accessed at: <http://www.fao.org/in-action/sharp/background/en/>

¹¹ FAO. 2020. *Towards a Global Programme on Sustainable Dryland Agriculture*. Twenty-seventh Session of the Committee on Agriculture. Rome. (also available at: <http://www.fao.org/3/nd366en/nd366en.pdf>).

action in the agriculture sector. Specifically, NAP-Ag has promoted significant advances in the plans and policies related to climate change and agriculture at the country level in various countries. Among others, the Uruguayan NAP proposed a strategy with adaptation measures in four dimensions: production systems, ecosystems and natural resources, livelihoods and institutional capacities. Since Kenya already had a NAP developed, the project supported the development of the Kenya Climate Smart Agriculture Strategy and its implementation framework, while in Uganda, the project supported the development of the NAP for Agriculture¹² and the Performance Monitoring and Evaluation Framework. Thailand's Agriculture Strategic Plan on Climate Change (ASPCC 2017-2021) and the Agro-ecological zone (land unit-base) adaptation planning in Nepal benefited from NAP-Ag project. A new program 'Scaling up Climate Ambition on Land Use and Agriculture through Nationally Determined Contributions and National Adaptation Plans (SCALA)' builds on NAP-Ag. SCALA targets increased action to cope with climate change impacts in the agriculture and land use sectors.

19. All FAO crops-agriculture projects that have climate co-benefits, target climate through a main focus on other SDG's. Some of the main contributions to SDG 13 such as MICCA and CSA have a joint focus on SDG 13, SDG 15 (life on land) and SDG 2 (zero hunger). In agriculture, work on agroforestry and agroecology focuses at food security (SDG 2) and biodiversity (SDG 14) but at the same time, has SDG 13 targets as co-benefits. The latter was confirmed by a specific study done by FAO and Biovision¹³. A clear example is the work on plant health, which is not only relevant for increased productivity but also plays an important role in climate related pest and disease control. FAO chairs the International Plant Protection Convention¹⁴ that has recently included climate change as a cross cutting issue and a strategic objective and FAO is developing international standards. Similarly, FAO hosts the secretariats of the Commission of Genetic Resources for Food and Agriculture (CGRFA)¹⁵ and the International Treaty for Plant Genetic Resources (TPGR).¹⁶ These intergovernmental bodies an important asset for climate change adaptation and mitigation, and the related disaster risk reduction, especially considering that the worlds agriculture is based on just a handful of species. The Strategic Plan 2019-2020 of the Commission has included climate change as a cross-cutting theme (without yet any concrete action) but the Benefit Sharing Fund of the Treaty fully targets climate change adaptation and resilience to climate risks and disasters. Also, FAO has produced analysis of the role of genetic resources and strategies for their inclusion in NAPs.¹⁷

¹² The Republic of Uganda. 2018. *National Adaptation Plan for the Agricultural Sector*. Ministry of Agriculture, Animal Industry and Fisheries. (also available at: <https://www.agriculture.go.ug/wp-content/uploads/2019/09/National-Adaptation-Plan-for-the-Agriculture-Sector-1.pdf>).

¹³ <http://www.fao.org/publications/card/en/c/CB0486EN>

¹⁴ International Plant Protection Convention. n.d. *International Plant Protection Convention* [website]. Accessed at: <https://www.ippc.int/en/>

¹⁵ FAO. n.d. *Commission on Genetic Resources for Food and Agriculture* [webpage]. In: FAO [online]. Accessed at: <http://www.fao.org/cgrfa/>

¹⁶ FAO. n.d. *International Treaty on Plant Genetic Resources for Food and Agriculture* [webpage]. In: FAO [online]. Accessed at: <http://www.fao.org/plant-treaty/en/>

¹⁷ FAO. 2015. *Coping with climate change - the roles of genetic resources for food and agriculture*. Rome. (also available at: <http://www.fao.org/3/a-i3866e.pdf>); FAO. 2015. *Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning*. Rome. (also available at: <http://www.fao.org/3/a-i4940e.pdf>).

20. FAO has mobilized an estimated total of more than USD 428 million of climate financing in the area of crops-agriculture. Especially since FAO has become successful in the generation of GEF projects (now being the third largest GEF agency, in terms of project funds) many field-based projects have been applied to piloting and analyzing technical options for sustainable agriculture related to climate. In the crops-agriculture area in general, the European Union and bilateral donors are the main donors, but in the agriculture and climate area, GEF is one of the largest. More than half of all crops-agriculture projects were funded with FAO's own funds, but its share in overall funding was 9 percent indicating that these were generally small size projects (technical cooperation programmes [TCP]). A climate action co-benefit could be established for 34 percent of the FAO funded crops-agriculture projects.

1.2. Is the climate agenda mainstreamed across FAO's portfolio of programs and projects to ensure enhanced relevance and coherence with FAO's mission on Climate Action, SDG 13, the Paris Agreement and the evolving international climate agenda?

Finding 5. In FAO's portfolio of programs and projects, many synergies exist between climate action and other goals. There has been only limited portfolio coherence between CBC/OCB and other divisions. The concept of CSA is being implemented in an uncoordinated way throughout FAO. While the normative oversight is at OCB, the technical expertise is at different divisions and there are few coordination mechanisms in place.

Finding 6. Most practical work in CSA is being done through field based projects by different FAO divisions and are poorly aligned. Other related concepts (agroecology, agroforestry) have CSA elements but there is a lack of clarity of concepts and there are few examples of synergy with CSA.

Finding 7. While FAO's mission targets sustainable production throughout, there are trade-offs between the primary emphasis on food production vs climate action, and between increased productivity and intensification in agriculture vs emissions. Also, there is a perception that FAO is not dealing enough with the potential conflict between the development agro-industrial commodities and climate action.

21. Almost any initiative of FAO by default is affected by or can affect climate change, which suggests a need to mainstream climate change in the project cycle. Nonetheless, the portfolio analysis done during this evaluation showed that a direct or indirect relation with climate change could not be identified for approx. 60 percent of FAO's projects. A review of the FAO project cycle guide indicates that there is no guidance on integrating climate change in the project cycle and no requirement on assessing carbon impacts throughout the project cycle from planning to monitoring and ex-post assessment.
22. Crop production-related climate action is scattered across FAO. Unlike 'reducing emissions from deforestation and forest degradation (REDD+)', CSA is a concept and not managed as a specific programme. Consequently, there are CSA activities in CBC/OCB, in animal production (Global Agenda on Sustainable Livestock [GASL]) and in different activities by NSP. Interviewed representatives from the different FAO divisions recognized that NSP is mostly looking at the impact of climate change on agriculture and OCB mostly to the contribution of agriculture to climate change. OCB oversees the implementation of FAO's Climate Change Strategy. Apart from working on MICCA and MOSAICC, OCB hosts the secretariats of the Global Alliance of CSA (GACSA), CGRFA and TPGR and organizes the FAO contributions to UNFCCC. NSP has several initiatives that are directly categorized as

CSA, such as ‘building climate smart cropping systems’,¹⁸ based on Save and Grow policy guidelines. This project, which is part of the EPIC program, is applied in practice in Sri Lanka and Zambia with a strong adaptation element incl tools for addressing climate risk. Also, there has been eLearning Academy course on Climate-smart crop production.¹⁹ The division has done several initiatives on the impact of climate change on plant production and crop yields and the inclusion of climate risks in agricultural production. There is considerable work on plant protection and pest control, with a direct link to climate change. FAO chairs the International Plant Protection Convention, that adopts climate change as a cross cutting theme. Its Strategic Framework 2020-2030 targets climate change impacts on plant health. FAO shares the secretariat of the Rotterdam Convention on use of chemicals with UNEP.

23. CSA is conceptually different to agroforestry, agroecology and conservation agriculture. While CSA is centered around CCAM along with sustainably increasing productivity, agroecology is a broader concept: it applies ecological concepts and principles to optimize interactions between plants, animals, humans and the environment.²⁰ Under agroecology, among other activities NSP worked has produced the ten elements of agroecology and produced a report on the potential of agroecology to contribute to resilient livelihoods.²¹ On request from COAG (2018)²² the scaling up agroecology initiative is underway. NSP works with a group of UN partners (International Fund for Agricultural Development [IFAD], World Food Programme [WFP], United Nations Environment Program [UNEP], World Bank [WB]) in an advisory mechanism on agroecology. Agroforestry is an ecologically based, natural resource management system that, through the integration of trees on multi-crop fields and in the agricultural landscape, diversifies and sustains production for increased social, economic and environmental benefits for land users at all levels.²³ Conservation agriculture a farming system that is based on the ecological principles of soil and water conservation. It promotes minimum soil disturbance, maintenance of a permanent soil cover and diversification of plant species.²⁴ NSP implements a few projects under this initiative, among others in sustainable agricultural mechanization.²⁵
24. The lack of clarity on concepts and fragmentation of terms and approaches contributed to the siloed implementation and lack for collaboration. Agroecology, agroforestry and conservation agriculture have many CCAM elements along with other ecological and social benefits and can be considered as climate-smart as CSA²⁶. There are a series of agronomic practices related to sustainable crop production that enable adaptation to climate change

¹⁸ FAO. n.d. *Building climate smart cropping systems* [webpage]. In: FAO [online]. Accessed at: <http://www.fao.org/in-action/save-grow-climate-smart/en/>

¹⁹ FAO. 2018. *Climate smart crop production* [E-learning course]. In: FAO E-learning Academy [online]. Accessed at: <https://elearning.fao.org/course/view.php?id=436>

²⁰ FAO. n.d. *Agroecology* [webpage]. In: FAO [online]. Accessed at: <http://www.fao.org/agroecology/en/>

²¹ FAO. 2020. *The potential of agroecology to build climate-resilient livelihoods and food systems*. Rome. (also available at: <http://www.fao.org/documents/card/en/c/cb0438en>).

²² <http://www.fao.org/3/mx456en/mx456en.pdf>

²³ FAO. n.d. *Agroforestry definition* [webpage]. In: FAO [online]. Accessed at: <http://www.fao.org/forestry/agroforestry/80338/en/>

²⁴ FAO. n.d. *Conservation agriculture* [webpage]. In: FAO [online]. Accessed at: <http://www.fao.org/conservation-agriculture/en/>

²⁵ FAO. n.d. *Sustainable Agricultural Mechanization* [webpage]. In: FAO [online]. Accessed at: <http://www.fao.org/sustainable-agricultural-mechanization/en/>

²⁶ <http://www.fao.org/publications/card/en/c/CB0486EN>

e.g. adapted species and varieties, diversified cropping systems, permanent soil cover and reduced tillage and appropriate mechanization, and promotion of fruit and vegetables in addition to staple crops. Not all of these are being included in the different approaches: CSA is a relatively 'open' approach, mostly targeting climate adaptation and mitigation along with production, without requiring specific practices. Conservation agriculture focuses on soil and water conservation and includes several of these practices, but could include extensive chemical use, which is not done in agroecology. Agroforestry has a stronger focus on biodiversity and permanence of systems, with corresponding practices.

25. The diffuse implementation and conceptual differences of crop production-related climate action have led to missed opportunities for better inclusion of climate action in agricultural activities. Multiple initiatives are not aligned and there have even been uncoordinated presentations or side events at global conferences. The GASCA network, which coordinates well with more than 200 stakeholders globally on CSA, is not integrated into all FAO divisions and initiatives. Many of the projects of the advisory group to the UN on agroecology are labelled under CSA because better known than agroecology. At the same time, representatives of partner organization that were interviewed for this evaluation mentioned that FAO's CSA vision is too narrow and does not really look at the entire food and agriculture system within the ecosystem/landscape, where agroecology effectively does. It brings the food system, family agriculture, climate change, biodiversity, water, land and stakeholder engagement fully together. According to FAO representatives, this advantage of this approach is not always recognized, leading to lack of collaboration (e.g. with the work on CSA in both NSP and OCB and access of agroecology initiatives to GEF and GCF).
26. There are many projects at the interface of crops-agriculture and climate action financed by GEF and GCF. FAO's GEF division is within CBC/OCB and representatives of the NSP division have mentioned that the coordination with OCB is not always easy because of conceptual and operative challenges. Thanks to the Impact Programs (since the GEF 6th replenishment period) there is a tendency to shift towards more integrated, multi-purpose land use approaches and sectoral approaches that pay attention to climate change including CSA, SFL and sustainable land management (SLM). Newer GEF projects appear to address more the underlying, cross-sectoral drivers of GHG emissions related to unsustainable land use than the pre-2015 designed projects. GEF representatives have expressed that FAO has a competitive strength under the Impact Programs because they have the capacity to work on different thematic areas. FAO leads on the Drylands Impact Program and has a major role on the Food Systems, Land Use and Restoration Impact Program (with WB). A good delivery of these impact programs, require coordination between OCB, NSP and NSL (now part of OCB).
27. During the inception of this evaluation, various potential trade-offs were identified specifically between, but not limited to, SDG 13 and SDG 2 (zero hunger) and SDG 8 (economic development). Trade-offs between climate change and other goals exist when the aim and activities of FAO initiatives are not aligned with climate change objectives and will have a negative impact on climate change adaptation or mitigation. This is the case when initiatives targeting increased food production or farmer income cause more GHG emissions through unintended deforestation, increased chemical fertilizer or energy use. Examples of this are enhanced crop productivity targeting higher yield-per-unit-area but causing more emissions by fertilizer use. Also, changes from land use-system (e.g. perennial crops to annual crops) or techniques (rain-fed to irrigated cultivation) potentially cause

more emissions (less biomass, more energy use). Development-oriented initiatives may cause less adaptive capacity, for instance by promoting less diversity in farm systems, higher dependence on external inputs or higher need for credits/insurance.

28. In crops-agriculture and climate action initiatives there will always be trade-offs. 'Sustainable production and intensification' is one of the pillars of CSA. The narrative of CSA is to prioritize food security, incorporating necessary adaptation, and capturing potential mitigation co-benefits.²⁷ This implies a tradeoff that is recognized. All FAO crops-agriculture projects try to reduce the impact of agriculture but this is not always included in FAO's projects and programs. Among other reasons, this is because tradeoffs are difficult to quantify and they vary per region. According to FAO staff working with crops-agriculture, the emerging focus on food systems rather than sectoral approach will help with the identification and management of these trade-offs.

1.3 What type of initiatives have been, or are likely to be, most effective to achieve significant and sustainable results?

Finding 8. In the CSA work, the most effective initiative has been the practical concepts and tools for GHG measurement and monitoring. FAO's work on grassroots level innovations in systems, practices, and technologies offers a large stock of potential adaptation and mitigation strategies in integrated land resource management and in agriculture and its sectors. There are examples of good social inclusion.

Finding 9. FAO has contributed significantly to important decisions in the UNFCCC, such as the development of the Koronivia Joint Work on Agriculture and the Enhanced Lima work program on gender.

29. As seen under EQ 1.1, the main contributions of FAO to SDG 13 targets in the crops-agriculture field is the development and promotion of the concept of CSA as well as the technical and normative tools such as the work on MICCA, MOSAICC and sustainable livestock. Much of these concepts have been further developed and implemented at the local and national level through field-based projects. This has been an effective initiative to bring concrete adaptation results and benefits from mitigation to local population. Field-based projects in the crops-agriculture area have good potential to combine different social, economic and ecological benefits, as particularly shown by integrated and holistic approaches such as agroecology.
30. For the field projects, FAO has been effective in the application of farmer field schools (FFS) to introduce and build capacity for innovative sustainable production techniques, including to face climate change and improve resilience. FFS are characterized by "grass-roots labs" and innovation, which ensures a continuous process for updating the information base needed to cope with climate change. In 2019 alone, the FAO's FFS team provided technical backstopping to incorporate the approach as part of 18 projects in 35 countries
31. FAO has a number of programs and projects that have been effective in mainstreaming gender in climate change projects. For instance, NAP-Ag supported the integration of a gender perspective in NAPs and implementation of their NDCs. Also, the FFS and the Dimitra Clubs in Africa²⁸ have proved to be socially inclusive mechanisms that increase the

²⁷ FAO. 2014. *Climate Smart Agriculture: FAO-EPIC approach to implementation*. PowerPoint presentation. Accessed at: <https://www.slideshare.net/FAOoftheUN/csa-epic-implementation>

²⁸ Full project title: 'Mainstreaming Ecosystem-based Approaches to Climate-resilient Rural Livelihoods in Vulnerable Rural Areas through the Farmer Field School Methodology' (GCP /SEN/065/LDF).

participation of rural women and men in community decision-making. In the context of climate change adaptation, the approach boosts women's leadership in decision-making processes, improves social cohesion and gender equality and facilitates access to information and knowledge to the most vulnerable and marginalized, including rural women and youth.²⁹

32. Lobby and advocacy at the global level have been important means for FAO to influence global negotiations related to SDG 13. Beyond the forest carbon area, FAO was not initially among the key UN stakeholders at the UNFCCC, until the preparation of the Paris Agreement and the inclusion of agriculture. Even since, it has delegated a higher number and higher-ranking staff in the delegations and has done more active preparation and country support. Although FAO staff that organize UNFCCC delegations find that there are not enough people at the Conferences of the Parties (COPs) to attend to all demands, there have been important achievements. The Koronivia decision is partly a result of FAO's advocacy which played a key role in the Subsidiary Body for Scientific and Technical Advice (SBSTA) and the Subsidiary Body for Implementation (SBI).

EQ 2. Is FAO fit for purpose to significantly contribute to globally agreed climate action targets?

2.1. To what extent are overall FAO's Strategic Objectives, Results Framework and Strategies (current and under development) aligned with global policies and strategies such as Agenda 2030 and the Paris Agreement?

Finding 10: FAO's strategic objective "make agriculture, forestry and fisheries more productive and sustainable" is a guiding principle for climate action in the agriculture sector and is reflected in the CSA theorem of production increase while contributing to climate change adaptation and mitigation. The inclusion of climate-smart concepts in the entire agricultural supply chain and their integration in food systems that target social and environmental co-benefits, is a work in progress.

33. FAO's third global goal refers directly to sustainable management of natural resources, but does not mention climate change at that level. Strategic Objective 5 (increase the resilience of livelihoods to threats and crisis) does cover adaptation to climate change, focusing on resilience of rural livelihoods to climate risk. In 2017, FAO revised its Strategic Framework by including climate change as a cross-cutting theme, together with gender and nutrition. Also, Strategic Objective 2 was reformulated from a production focus ("increase and improve provision of goods and services from agriculture, forestry and fisheries in a sustainable manner") to a balanced focus on both sustainability and productivity ("make agriculture, forestry and fisheries more productive and sustainable"). This provides the implicit guiding principle of CSA by increasing agriculture production while contributing to CCAM. CSA is one of the 11 Corporate Areas for Resource Mobilization under the FAO Strategic Objectives.
34. The *Director-General's Medium Term Plan 2018-21 and Programme of Work and Budget 2018-19* (FAO, 2017) clearly states that this Strategic Objective 2 (SO2) will "sustainably increase production and productivity, address climate change, biodiversity and environmental degradation in agriculture, forestry and fisheries in the context of nutrition and gender-sensitive food systems". It calls for enhancing countries' capacities to adapt to the adverse impacts of climate change and to develop or implement national adaptation plan for NDCs. In the Results Framework, there is no SDG target included at the level of SO2 but there is at outcome level. Outcome 2.3 is the improved implementation of policies

²⁹ FAO. 2019. *Pilot Good Practices Briefs Information Sheet Senegal*. FAO internal document. Rome.

and instruments for sustainable agriculture, and includes SDG 13 target 13.2.1. Outcome 2.1 mentions increasing productivity while addressing climate change, which is the CSA theorem. However, its indicators do not mention climate action or SDG 13. Strategic Objective 5 (increase the resilience of livelihoods to threats and crisis) has SDG targets 13.1 (resilience to disasters) at the SO level. It includes several SDG 13 targets (13.1.1, 13.2.1, 13.3.1) as indicators for Outcome 5.1 (Countries adopted or implemented legal, policy and institutional systems and frameworks for risk reduction and crisis management) but this outcome and outputs refer to general vulnerability and adaptation capacity to climate risk and disasters and less to agricultural production and practices.

35. Several people internal and external to FAO, interviewed for this evaluation, mentioned that while there is attention to environmental sustainability by FAO and a sincere increase of climate change considerations, FAO continues to place priority on increasing production for food security and combatting poverty. This is reflected in two of three global goals (targeting hunger and poverty) and the fact that among all Strategic Objective level-targets and indicators in the Results Framework, SDG 1 targets were mentioned 11 times and SDG 2 targets 28 times, against three times for SDG 13 targets. Even though CSA is in line with SO2 of the Strategic Framework, internal staff mention the lack of high-level support, evidenced by the scattered inclusion in FAO's operative structure (divided among different departments and divisions, see EQ 1.2) and the fact that most CSA work is funded by external budget and executed by consultants. Other technical areas, such as agroecology and agroforestry, are mentioned as still less recognized and poorly known. For example, where CSA is well included in FAO's Climate Change Strategy (see EQ 2.2), agroecology is not. On the other hand, both the Medium Term Plan and recent high-level management decisions prove a focus on more integrated approaches. Examples are the new organizational structure with the creation of OCB and the Natural Resources and Production Stream (FAO Council, June 2020), the reinforcement (with staff and budget) of priorities such as agroecology, climate change and food systems (Medium Term Plan), and the organization of the Food Systems Summit (2021).

2.2. Does FAO have clear and articulated institutional strategies and plans to support Climate Action?

Finding 11. The FAO Climate Change Strategy focuses on agricultural production and SDG 13. While it refers strongly to CSA, it is not a guiding strategy for the work on agriculture and climate action, because it is considered not specific enough. Other sectoral or decentralized strategies are guiding.

36. The FAO Climate Change Strategy prioritizes agriculture and its sectors in its relation to climate change, rather than prioritizing climate change as such. The language used is agriculture-centered, for instance by concentrating on NDC in food and agriculture sectors, climate financing for these sectors and the integration of food security and agricultural sectors along with climate change. Its first outcome (enhanced capacities of Member Nations on climate change) includes mainly outputs focusing on the impact of climate change on agricultural production, food systems and risk reduction. How agriculture contributes to climate change and its mitigation receives less attention. The second outcome focuses on the integration of food security and nutrition, agriculture, forestry and fisheries considerations within the international agenda on climate change; targeting partnerships, funding and positioning. While this focus can be criticized from the integrated climate action point of view (agriculture as a vulnerable sector to climate change, contributing to climate change, and a sector that provides opportunities for mitigation), the Strategy does put crops-agriculture at its center. 'Climate-smart' (as in CSA) is mentioned along with five other terms in its approach statement and a specific output on

CSA (1.i.) is included. However, the interviewed FAO staff (at HQ and decentralized offices) while aware of the existence of the Climate Change Strategy, noted they do not find it useful for guiding their work. Most mentioned that the Strategy is not concrete enough (missing activities, too general indicators). Others stated that specific themes such as REDD+, agroecology or agroforestry are not referred to in the Strategy and other themes (pests, livestock, genetic resources) are mentioned but not included in the action plan results framework.

37. In 2010, CSA was launched and in 2011 the first agricultural strategy addressing climate change (for pollination³⁰) and the Save and Grow concept of sustainable intensification were published.³¹ However, the evaluation did not find an overarching, guiding strategy for climate smart agriculture or for inclusion/mainstreaming of climate change in crops-agriculture. Individual units follow their own strategies shaped by funds programs. Both NSP and OCB have multi-country CSA initiatives that guide work in individual countries, such as MICCA, EPIC and the International Alliance on Climate-Smart Agriculture project (an initiative that supported developing countries in their international commitments for climate change and sustainable development in the field of agriculture and food security, did knowledge sharing on CSA, and helped the creation and the implementation of GACSA). The NAP-Ag and SCALA programs guide the inclusion of agriculture considerations in National Adaptation Plans for NDC. Also, FAO either leads or participates in multi-agency partnerships drive climate-action in agriculture, such as the Global Alliance for CSA (GACSA), GASL, the IPCC and the Pastoralist Knowledge Hub. At national level, the Country Planning Framework are guiding and many (approx. 70 percent, see main SDG 13 Evaluation report) include reference to climate action. At regional level, guiding strategies are the Regional Initiatives, such as Managing Natural Resources Sustainably and Preserving Biodiversity in a Changing Climate (Europe and Central Asia), Building Resilience in Africa's Drylands and Integrated Management of Agricultural Landscapes (both in Africa).

2.3. How is FAO's mission on Climate Action reflected/included in the institution's governance and operative structure?

Finding 12. Although climate action is acquiring increasing importance within the organization's governance and is considered high priority by some technical divisions, there is evidence of lack of solid focus by the organization on climate action, such as gaps in systematically addressing CCAM within the FAO project cycle and lack of coordination between divisions and working groups.

38. Through different programs, FAO is playing an important role in the area of climate change mitigation (MICCA, GASL), assessing vulnerability (MOSAICC) and adaptation (NAP, CSA, agroecology) and climate action is acquiring increased importance within the organization, especially after the inclusion of agriculture in the UNFCCC and the Paris Agreement. As shown in EQ 2.1 there is due attention in the revised Strategic Framework and recent council and DG decisions. Also, the FAO Climate Change Strategy is focusing around sustainable agricultural production (see EQ 2.2). However, and possibly because the inclusion of climate change in FAO's work is relatively new, its importance is not reflected by a clear internal governance.

³⁰ FAO. 2011. *Potential effects of climate change on cross pollination*. Rome. (also available at: <http://www.fao.org/3/a-i2242e.pdf>).

³¹ FAO. 2011. *Save and Grow. A policymaker's guide to the sustainable intensification of smallholder crop production*. Digital publication. (also available at: <http://www.fao.org/ag/save-and-grow/en/index.html>).

39. The establishment of OCB in June 2020 as an overarching and coordinating office is a good step to ensure more visibility and mainstreaming, because until recently, there has been little coordination between FAO's operative structures for mainstreaming climate action vertically (HQ, regional, sub-regional, and national offices) and horizontally (involving inter-project coordination mechanisms among the climate action projects). While there are several informal working groups, there is little evidence of well-functioning institutional coordination and communication mechanisms among OCB, divisions and decentralized offices about climate action. Especially in the area of crops-agriculture, there is work implemented by different divisions, particularly by CBC/OCB) and NSP. As noted in EQ 1.2, these divisions have a certain degree of coordination through direct collaboration mechanisms and through the informal climate change coordination group, but there are formal coordination systems on development and implementation of CSA and other climate action in crops-agriculture. In theory, OCB develops tools and works at the implementation of CSA in policies and conventions while NSP does the application and capacity building in countries. In practice, this division is not so clear and the multi-country CSA projects managed by these divisions are quite similar in nature. Support to decentralized offices normally follows opportunities or personal contacts. Also within NSP, good collaboration among colleagues is reported but a lacking overarching strategy and a broad and varied thematic range (CSA, agroecology, plant protection, sustainable mechanization) makes practical collaboration and strategic coordination a challenge.
40. In general, FAO has not included climate action and climate risk systematically in its project cycle, beyond donor required safeguards and reporting (particularly GEF projects). Surprisingly, FAO does not systematically use tools such as EX-ACT for its own interventions, and climate considerations have not been systematically integrated into the design of investment projects, probably because it is not a requirement of the project cycle. The evaluation team's review of 137 FAO forest and climate change-related project design documents and 64 climate change-related evaluation reports suggests little attention has been paid to carbon outcomes. Indeed, while FAO does not require carbon impact analysis or the use of EX-ACT, they are standard practice, even a requirement, at other agencies (including the World Bank, for all projects that are likely to have a carbon impact).
41. The requirement of integration of climate change in the FAO project cycle was a Primary Indicator of the corporate Climate Change Strategy (indicator 3.1.ii) but has not been achieved, as recognized by the Strategy's progress report 2018-2019. Recently, FAO is reviewing its Environmental and Social Management Guidelines (ESMGs) and introducing a new Standard on Climate and Disaster Risk. The document sets out new mandatory elements that must be integrated into FAO's project cycle, including reporting. Under the revised ESGMs, Environmental and Social Standard (ESS) 3 on climate change and disaster risks acknowledges GHG emissions from agriculture and food systems as a significant cause of climate change in parallel with the vulnerabilities of the agricultural sector.

2.4. How relevant and adequate are FAO's delivery mechanisms, human and financial resources and monitoring systems to address country/regional level needs and to plan, budget, monitor and communicate FAO's support in achieving the targets posed by SDG 13 and by the Paris Agreement?

Finding 13. Several climate action-related crops-agriculture programs have a global reach: they provide knowledge to international conventions and are supporting countries meet their goals. These delivery mechanisms are adequately funded and staffed and generally well appreciated by external partners.

Finding 14. Much of the climate/agriculture work is done through field-based projects in-country, supporting stakeholders through externally funded projects. Much of this work is executed by FAO national staff, most of them consultants on project budget with high turn-over. There is CSA staff at global HQ (in different divisions) and regional level who train/guide staff at national level. While this delivery model achieves important results at the local level, the scaling of experiences and the link to national/global policies is not always evident.

42. FAO's global climate action-related crops-agriculture work is supported by several multi-country initiatives such as EPIC, MICCA, SCALA. These have funding for medium term action ensured from their (bilateral and multilateral) funding sources. This ensures that much of the CSA-related action at FAO is funded and staffed. Interviewed Member Nation representatives and external partners of this work appreciate the capacity of FAO to develop these initiatives, and highly value the technical capacity of FAO staff.
43. Because of the project-based funding of crops-agriculture work, the evaluation observed that most projects rely on consultants and not permanent FAO staff, both in countries and at headquarters. A rough estimate from country-case studies and interviews with different divisions show that approximately 70 to 80 percent of project work is executed by consultants. This high percentage of consultants is a challenge for continuity of staff and development of institutional capacity and memory. Consequently, this might affect the consolidation and scaling of results and scaling. Short-term staff hired by country offices of FAO do report an effective technical support from regional FAO offices and permanent staff from headquarters. FAO staff report that the project-based approach results in permanent staff spend a considerable part of their time developing new projects and they feel competition with other divisions within the organization.
44. FAO communicates its work on climate change through global initiatives, including project (e.g. NAP-Ag), partnerships, networks (NAP Global Network, GASL, Global Livestock Initiative), and fora (e.g. Global Forest Observations Initiative, the partnership with WMO, UNFCCC's COP, SBSTA and SBI), and through publications (e.g., Forest Reference Levels, The State of Food and Agriculture). With regards to countries, the country case studies for this evaluation did not find clear examples of communication of its vision to national partners with regards to topics such as trade-offs, GHG emissions, drivers of deforestation and other climate change-related sensitive topics.

EQ 3. Does FAO optimally engage partnerships that leverage the effect of its work on climate action towards impact generation?

3.1. Is FAO's collaboration with its main (public and private) development partners (UN and others) effectively building on FAO's comparative strengths and weaknesses on climate change related areas?

Finding 15. FAO has a unique and recognized (potential) comparative strength to mainstream climate change in agriculture and across sectors. Compared to other multilateral agencies, it has a strong multisectoral technical capacity combined with presence in the field which can help in linking complex, system-level work in agriculture and forestry to climate action. Compared to non-governmental development agencies, FAO has a strong convening power and direct links to government agencies. While FAO delivers on this strength in many partnerships, this can still be increased, e.g. by connecting agriculture to the wider food system.

45. FAO's comparative strength in climate action lies principally in its high competency in several technical areas including, but not restricted to, CSA, crop production and crop protection. It also is a global technical leader in supply chain, food safety, and participated in global dialogues on forestry, biodiversity, land and soil, livestock and nutrition. Of the

global survey executed for this evaluation among external stakeholders, almost 80 percent stated that FAO had a comparative advantage in crop production and supply chain. Together with livestock and fisheries, this is the most mentioned technical expertise. According to the report of a specific study as part of this SDG Evaluation on FAO's niche in climate action, FAO's technical expertise and field presence creates the inputs for tools, methodologies, publications and guidelines through which it creates outcomes on knowledge, organization and normative action.

46. FAO's capacity to work on different but interrelated technical fields is evidenced by its GEF portfolio: in its entirety FAO-GEF features 32 percent multi-focal area projects, which is quite high compared to other GEF agencies' distribution. GEF secretariat representatives told the evaluation team that FAO became particularly successful in GEF project implementation with the launch of (multidisciplinary, multi-country) Impact Programs. Nevertheless, interviewed representatives of GCF gave several examples of how FAO was not working at scale or being very efficient in its projects. While acknowledging FAO's strength on the ground and in terms of technical capacity, GCF suggested that the current single grant projects that FAO is operating are not transformative like longer-term sustainable investments would be.
47. Few multilateral development partners (UN agencies, IFIs) have the same technical experience in different areas, sustained with field presence as FAO. This is the basis for partnerships, where FAO brings in its technical capacities in fields relevant to climate action that other multilateral partners usually do not have. In global networks on climate agriculture related areas (Global Alliance on Climate Smart Agriculture, International Plant Protection Convention; both coordinated by FAO) partners look for FAO's technical expertise combined with its convening power.
48. FAO's strong partnerships are evident in the many collaborations it has been engaged in within the climate action arena. Partnerships include, among others, NAP-Ag and SCALA with UNDP, (see EQ 1.1). The Agricultural Climate Resilience Enhancement Initiative (ACREI) is a project funded by the Adaptation Fund and implemented by the World Meteorological Organization (WMO) in partnership with FAO and the Intergovernmental Authority on Development (IGAD) Climate Prediction and Applications Centre (ICPAC). This project aims at providing downscaled, real-time climate services to smallholders for informed decision making. The partners invited FAO for its expertise in community-based adaptation planning and ensure participatory extension services. FAO has signed MOUs with UNFCCC and UNDP focusing collaboration around issues pertaining to sustainable agricultural management, natural resources, food security and climate change.
49. Non-governmental development partners, such as universities, international organizations (such as the German Corporation for International Cooperation GmbH [GIZ], Oxfam, etc.) and national and international NGOs working in the field of climate and agriculture, might have similar technical and field experience to FAO but do not have the convening power and the direct government relationships that a UN agency such as FAO has. Therefore, these partners look for inclusion of FAO in initiatives where FAO is an 'honest broker' for institutionalizing or inclusion in national policies of good agricultural practices.
50. Having a technical comparative advantage in many inter-connected areas speaks strongly to FAO's potential to mainstream climate change in sustainable food systems in a systemic way along the food and ecosystem value chain, from sustainable food production, processing and marketing to sustainable food consumption and disposal. Nearly 60 percent of respondents to both the external and internal survey identified CSA as the most

important initiative in the climate action space. As explained in previous evaluation questions, this initiative has been well explored by FAO. On the other hand, 70 percent of external survey respondents stated that initiatives in food systems would lead to transformational change. FAO's work in food systems is emerging but this potential competitive strength is not yet fully explored. Many of the respondents included comments that emphasized the linking of the different areas that fall under FAO's mandate to be key to systemic and transformational change. As one international organization said: "FAO needed to move from CSA to CSAF (climate smart agriculture and food systems) putting a climate smart lens on all the elements of the food system value chain". A good step in that direction is the role FAO plays in the Food System Summit 2021. FAO's work for the preparation of this Summit, is an example of fruitful cooperation with Rome-based agencies and the UN system as a whole.

51. While others recognize FAO as being able to work through sectors, with initiatives that connect the source, the analysis and solution of problems in different thematic areas, this is not happening enough. FAO's Climate Smart Agriculture is linked to other agricultural divisions but mainly looks at production and value chains and does not link much to nutrition and food loss or underlying challenges such as migration and global trade and biodiversity conservation or impacts on forests. Therefore, in all these sectors there is good work in mitigation and adaptation, but not yet enough in an integrated manner targeting the drivers and underlying causes of the overall socio-environmental problems. In interviews, it was commonly stated that FAO should link agriculture (crops and livestock) and forestry better at the country level and use this comparative advantage in leveraging complementary technical support and financing through partnerships extending beyond forestry to encompass sustainable agriculture, sustainable agricultural commodity supply chains, and energy.
52. In 2018, FAO assessed that food production is still based on "a combination of intensified agricultural production processes and the clearing of forests which caused natural resource degradation and contributed to climate change".³² This report highlighted some sensitive topics, including consumer awareness and education, dietary patterns of high-income countries, trade-offs between agricultural production and sustainability, among others. However, in the broader picture, there is no evidence of FAO spearheading the up-take and discussion of these sensitive topics with national partners.

3.2 To what degree has FAO's collaboration with Members or development/multi-lateral partners been effective in leveraging climate action at country and at global level?

Finding 16. FAO has an ongoing and positive collaboration with national partners through the NDCs and the NAPs and is effectively promoting and joining international and global agendas and partnerships on climate action. These initiatives all have the potential for transformation.

53. The important role that FAO has played in developing and making available a series of tools, methods and guidelines that enable national and international partners to effectively pursue their work cannot be overemphasized. Over 70 percent of external survey respondents agreed that they used FAO's products and services in their work. Some of the tools highlighted included EX-ACT for assessing GHG reduction projects (together with MICCA); MOSAICC to assess climate change impact on agriculture; and GLEAM-i to measure GHG emissions in the livestock sector, among others. In particular, EX-ACT is

³² FAO. 2018. *The future of food and agriculture – Alternative pathways to 2050*. Rome. 224 pp. (also available at: <http://www.fao.org/3/i8429en/i8429en.pdf>).

widely used by external partners and in some cases used as requirement for project development.

54. The partnership with Members to support the NDC development has high potential for transformative change: 65 percent of external survey respondents agreed to this statement. FAO's 2016 analysis of (intended) NDCs, showed 90 percent of countries referring to the agricultural sectors. Therefore, FAO together with other agencies (particularly UNDP) supported 64 countries in developing and implementing their NDC and made its support for countries' NDC implementation a priority of its work under the framework of its Climate Change Strategy. A common framework³³ was developed for analyzing agriculture and land use in the NDCs. FAO developed its work on NDCs along three major axes: (1) mitigation, building on existing mitigation work, such as NAMAs and MICCA, (2) adaptation, including CSA and (3) transparency (measuring and reporting).
55. The partnership for NAP-Ag, and now SCALA, have been fostering cooperation of countries in the global level, in initiatives such as the Least Developed Countries' Expert Group (LEG), the Adaptation Committee, the NAP Global Network, the NAP Global Support Program – NAP GSP (co-led by UNDP and UN Environment and funded by the GEF), the Thematic Working Group on Agriculture, Food Security and Land Use under NDC Partnership, and the GCF's Readiness and Preparatory Support Program. NAP-Ag periodically reported to the UNFCCC on the progress of formulation and implementation of NAPs by LDCs. Evidence of this is captured in UNFCCC reports³⁴ such as the Report of the 36th meeting of LEG.
56. As an executing agency for GEF and GCF, FAO plays an important role in helping countries in gaining access to resources. As an important partner of the UNFCCC LDC Expert Group, FAO has been leveraging its technical expertise and relations with governments to support LDCs in their GCF and GEF proposal submissions. In terms of GCF funding, FAO has to date ten approved projects in the amount of USD 605 million, which will benefit 28 million people with over 60 percent dedicated to mitigation in forest and land use vs 40 percent in adaptation.

3.3. Are new, innovative partnerships in support of SDG 13, being forged or adhered by FAO and are these showing concrete results?

Finding 17. The evaluation found few examples of innovative partnership with the private sector or financing institutions in the crops-agriculture sector. The lacking collaboration with private sector is seen as one of the main limiting factors as well as an area with strong potential for transformative change.

57. In interviews, partners and donors consistently highlighted the lack of partnerships with the private sector as an area that required considerable improvement. For instance, GCF suggested greater partnerships with DFIs and the private sector in order for FAO to explore other financing options beyond grants. Blended investments would allow FAO to upscale its impact while partnering with financial institutions. International partners also emphasized the need for FAO to engage more with the private sector and finance community. One particular example given was the increasing number of Corporations that

³³ FAO. 2020. *A common framework for agriculture and land use in the Nationally Determined Contributions*. Rome. (also available at www.fao.org/3/cb1589en/cb1589en.pdf).

³⁴ UNFCCC. 2019. *Progress in the process to formulate and implement national adaptation plans. Note by the secretariat*. Subsidiary Body for Implementation, Fifty-first session, Madrid, 2–9 December 2019. (also available at: https://unfccc.int/sites/default/files/resource/sbi2019_INF.15.pdf).

- pledged to be net zero by 2050, and how FAO would be best placed to help with quantifying their pledges when it comes to AFOLU sectors
58. In NAP-Ag there is specific evidence of the involvement of the private sector (cases in Colombia, Guatemala and the Philippines, on piloting adaptation options), yet some of the climate adaptation options proposed in the NAP-Ags e.g. on irrigation technologies, require the concrete investment of private sector throughout, beyond involvement. Involving the private sector particularly in the cost-benefit analysis would have informed the project on the viability and feasibility of some of their proposed adaptation options.
 59. There are many examples of partnerships with the private sector at the project level, such as the agreement with Ordeño (a dairy company) and the national development bank BanEcuador, to help livestock farmers in Ecuador to cover the cost of implementing climate-smart livestock farming. A partnership with Telefonica under the 'More Cotton' project, assisted family farmers to reduce the costs associated with agricultural production by optimizing water usage through the use of sensors and meteorological stations in pilot areas of Colombia, El Salvador and Peru. However, most of these FAO engagements with the private sector have been one-time events, with limited strategic vision and limited link to the SDGs.
 60. In climate financing there is work underway with the multilateral banks. For instance, since 2012 the FAO Investment Centre has had a comprehensive guideline *Incorporating climate change considerations into agricultural investment programs: A guidance document* to guide project design. In all the Investment Center-supported project designs, the analysis of carbon impacts, using EX-ACT or GLEAM-i and Livestock Sector Investment and Policy Toolkit (LSIPT) for livestock, is required or increasingly. Nevertheless, there are no hard data available on the actual use and partnerships with private financing institutions are scarce. There is a formal partnership between FAO and the Dutch Entrepreneurial Development Bank, FMO. However, UNEP signed a far larger partnership deal with FMO, led by the Dutch financial institution Rabobank, on deforestation-free, sustainable agricultural production.³⁵
 61. Unlike other UN agencies like UNDP, UNDP, WFP, IFAD and UNIDO, FAO does not participate in key partnerships that link climate action with the economy and multilateral agencies with national governments and private sector. Examples of these are the InsuResilience Global Partnership for Climate and Disaster Risk Finance and Insurance Solutions,³⁶ that brings together countries, civil society, international organizations and many members of the private sector. FAO is also absent in the multilateral Partnership for Green Economy³⁷ and in the We-Mean-Business coalition (partnership of major multinational private corporations and development agencies).³⁸ FAO does not partner in the Farm to Market Alliance with WFP and the private sector to provide smallholders with access to affordable finance.³⁹

³⁵ UNEP. 2020. *AGRI3 Fund launched with Dutch Government and Rabobank as anchor investors*. Nairobi. (also available at: <https://www.unep.org/resources/case-study/agri3-fund-launched-dutch-government-and-rabobank-anchor-investors>).

³⁶ InsuResilience Global Partnership. n.d. *InsuResilience Global Partnership* [website]. Accessed at: <https://www.insuresilience.org/>

³⁷ Partnership for Action on Green Economy (PAGE). n.d. *Partnership for Action on Green Economy (PAGE)* [website]. Accessed at: <https://www.un-page.org/>

³⁸ We Mean Business Coalition. n.d. *We Mean Business Coalition* [website]. Accessed at: <https://www.wemeanbusinesscoalition.org/>

³⁹ Farm to Market Alliance (FTMA). n.d. *Farm to Market Alliance* [website]. Accessed at: <https://ftma.org/>

3.4. Is FAO using its internal implementation modalities to effectively achieve globally agreed Climate Action targets (in SDG and Paris Agreement) through sharing knowledge, best practices, and experiences as well as by adapting/replicating/scaling up climate change adaptation and mitigation technologies?

Finding 18. Many of FAO's knowledge products, normative tools and guidelines related to climate smart agriculture and GHG emissions are highly valued. These tools are popular at country level, while appreciated and largely used by development partners, including by UNFCCC to cross check national data. These valued tools have helped to expand the impact of FAO's technical work to larger scales and wider applications.

62. FAO produces knowledge products in all sectors that work with climate action. It developed and made available a series of tools, methods and guidelines that are used by national and international partners, including UN agencies (see EQ 1.1). Over 70 percent of respondents to the external survey, agreed they used FAO's products and services in their work. FAO has strong in-house knowledge, capacity and tools with high relevance to climate action, such as EX-ACT. The tool is regularly adopted by the Investment Centre to formulate GCF proposals and in its work with IFIs. EX ACT is also widely used by World Bank and IFAD for integrating climate change into agricultural investments (projects and programs) and by the GEF. The FAO EX-ACT team and IFAD initiated a partnership in March 2019 on "mainstreaming ex-ante greenhouse gas accounting into investments in agriculture and their economic and financial analysis".
63. FAO provides guidance on integrating climate concerns, including risks and climate-smart agriculture in agricultural investments, such as through the CSA Sourcebook and the Investment Learning Platform (ILP), but it is unclear how systematically this guidance is made use of at project design. In addition, the guidance has not been integrated into project cycle guidelines. In NSP, several knowledge products on water, soil and land have been developed (AQUASTAT, AQUAMAP, CROPWAT, CLIMWAT etc.) that support land planning and identify risks for countries and therefore, contribute to climate action. The Global Soil Organic Carbon map is of fundamental importance for identification of important soil carbon stocks. These maps are very useful, particularly for countries that have poor locally produced data, although its use depends largely on the available scale of the maps. FOA and CBC have contributed to the IPCC carbon methodology and UNCDD work through sharing its knowledge and best practices in REDD+ carbon accounting and soil carbon through a Global Forest Observation Initiative (GFOI) hosted by FAO and the Global Soil Partnership.
64. The evaluation found FAO's work in gender and climate change is supported by a number of knowledge products. Among these products are good practice briefs, training materials and methodological guides.⁴⁰ FAO and CARE produced a document on good practices for integrating gender equality in the CSA Program.⁴¹ Knowledge products and initiatives in

⁴⁰ Nelson, S. & Hill, C, 2019. *Gender in adaptation planning for the agriculture sectors: Guide for trainers*. FAO. Rome. (also available at: <http://www.fao.org/3/ca7088en/ca7088en.pdf>);

FAO. 2018. *Promoting gender-responsive adaptation in the agriculture sectors: Entry points within National Adaptation Plan*. Briefing note. Rome. (also available at: <http://www.fao.org/in-action/naps/resources/detail/en/c/1114148/>).

⁴¹ UN-REDD. 2017. *A Methodological brief on Gender; and Guidance for policy makers on Gender Responsive Disaster Risk Management in the Agriculture Sector*. (also available at: <https://www.unredd.net/documents/redd-papers-and-publications-90/un-redd-publications-1191/technical-resources-series/15951-un-redd-methodological-brief-on-gender.html>).

the area of youth and climate change are less systematic. Youth in Action, for example, is a compilation of youth initiatives in agriculture to address impacts of climate change.

65. FAO's good work on climate action is confined to separate levels and sectors without sufficient adapting, replicating and scaling. As a result, FAO does not appear to be very visible or vocal on climate change - yet, there is a need and demand by partners that FAO become more active in the climate action space. Interviewees consistently stated that FAO should work more on helping countries to develop institutions and structures, including cross-sectoral and multi-stakeholder platforms, to promote more sustainable land use. FAO should also become more active in contributing to improved land tenure and good governance, including difficult issues such as land tenure with national authorities.