

# At a Crossroads

THE INTERSECTION OF CLIMATE CHANGE AND AGRICULTURE CANNOT BE IGNORED

POLICY NOTE: OCTOBER 2022

*“Addressing the real impacts of climate change on smallholder farmers demands that we, as a global community, rethink what we grow and how we grow it” (pg. 6).*



[Laura Elizabeth Pohl for CRS]

## Executive Summary

It is both possible and necessary to enhance our agricultural practices and investments to address the many interconnected impacts climate change has on food, nutrition security, and livelihoods. Small-scale farmers, who manage about 12 percent of the world's agricultural land, will feel the effects the most. For these food producers, climate change can reinforce a vicious cycle of shocks, risks, and the poverty trap. Paradoxically, agriculture suffers from the impact of climate change while at the same time is one of its causes. It is estimated that agriculture is directly responsible for 14 percent of global total greenhouse gas emissions. There is an urgent need to transition to a more resilient agricultural paradigm. The priority for climate change adaptation is to reduce vulnerability to climate change and extreme weather variability. Known practices that can increase agricultural productivity, foster biodiversity, improve food and nutrition security, and promote market opportunities must be more widely implemented.

The twenty-seventh UN Climate Change Conference (COP27) in Egypt presents an opportunity to advance this urgent shift away from the current agricultural paradigm. It takes place at a critical juncture with an opportunity to commit to increasing climate finance to support the adaptation of smallholder agriculture and to transition the agricultural sector to a more sustainable, low-emission model.

CRS urgently appeals to leaders to take urgent action to:

- Reaffirm the centrality of agriculture for food and nutrition security, poverty reduction, and the creation of livelihood opportunities, and ensure that the sector is resilient to climate change.
- Recognize that smallholder farmers and indigenous peoples need to be at the center of discussions on agriculture and sustainable natural resource management.
- Increase climate finance to support the agricultural sector anchored in the principles of subsidiarity and ensure that finance going to farmers' organizations and local organizations support their agricultural priorities.
- Acknowledge that soil and nutrient management, including organic fertilizers and enhanced manure management, lie at the core of a new climate-resilient agriculture.

A post-COP27 Koronivia Joint Working Group on Agriculture (KJWA) should be mandated to:

- Continue to be the discussion forum within the UN Framework Convention on Climate Change (UNFCCC) for food security and agriculture-related issues.
- Engage directly with the Green Climate Fund to identify increased financial support for smallholder farmers as an urgent priority.
- Ensure coordination across the UNFCCC with bodies such as the Nairobi Work Programme, the Standing Committee on Finance, the Global Goal on Adaptation, and others.
- Engage with other UN agencies whose mission is supporting food and agriculture such as Food and Agriculture Organization (FAO), World Food Program (WFP), International Fund for Agricultural Development (IFAD), and Committee on World Food Security (CFS).
- Develop technical guidelines to support countries as they adapt their agricultural sector within their Nationally Determined Contributions.
- Develop technical guidelines on how to enhance synergies between adaptation and mitigation.
- Share knowledge and foster action on agriculture by financial institutions outside of the UNFCCC.

## The Challenge

Across the planet, the frequency and intensity of storms are increasing; record temperatures are being experienced worldwide; and sea levels are rising as ice sheets melt. These drastic changes in weather patterns are taking a heavy toll on agriculture and natural resources, disrupting livelihoods, causing mass population displacements, and escalating conflicts. At the same time, we are facing a global food crisis resulting from extreme climate variability exacerbated by the economic impacts of the COVID-19 pandemic and the war in Ukraine. Paradoxically, agriculture suffers from the impact of climate change while at the same time is one of its causes. Agriculture is directly responsible for an estimated 14 percent of total global greenhouse gas emissions. Increasing carbon dioxide concentrations are also linked to decreasing micronutrient densities of some staple crops.<sup>1</sup> The world's response to this complex and dangerous entanglement of both crises will either drive us towards more hunger and destruction or towards solutions that will reduce suffering and improve the living conditions of people everywhere.

### *Smallholders feed the world*

Agriculture is critical to the economies of low- and middle-income countries, where [nearly 32 percent](#) of people are employed in agricultural activities. Most of the world's 570 million farms are smallholdings (i.e., farms less than two hectares in size)<sup>2</sup>, managing about 12 percent of the world's agricultural land, and producing some of the major commodities consumed in the world. In Asia and sub-Saharan Africa (SSA), smallholder farmers produce most of the food consumed in the region. Smallholder farmers are some of the poorest and most food-insecure people in the world, and in many regions where agriculture is feminized, the impacts of disproportionate work and poor outcomes fall particularly on women. Moreover, cultural barriers, discriminatory laws, and gender norms work to limit women's choices, making it even more difficult for them to access information and attend training sessions. All these factors lower their adaptive capacity. Climate change poses a disproportionately greater danger to smallholder farmers and thereby threatens to undermine progress toward poverty reduction, food security, ending malnutrition and ultimately reaching the Sustainable Development Goals (SDGs), to which governments and the international community are committed.

### *The vulnerability of smallholder farmers*

Smallholder farmers are more vulnerable to climate change because they depend on rain-fed agriculture, cultivate marginal areas, and lack access to the kind of technical aids and financial services that could help them implement more climate-resilient agricultural practices. In addition, when crops fail due to a lack of rain, farmers do not have large cash reserves on hand to stay afloat. When yields drop, they must often respond by increasing the area of land they cultivate to maintain their livelihoods. For example, 95 percent of agriculture in SSA is reliant on rainfall. As a result, increasingly unpredictable weather patterns have reduced crop yields, thereby worsening food insecurity, malnutrition, and poverty. Subsistence farming households tend to retain their meager savings in the form of food stocks for personal consumption rather than invest in technologies that could increase their standard of living and decrease their vulnerability to poverty. Smallholders face multiple barriers to accessing formal credit. Climate change therefore can reinforce a vicious cycle of shocks, risks, and the poverty trap.<sup>3</sup>

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1 Smith, Matthew R., and Samuel S. Myers. "Impact of Anthropogenic CO2 Emissions on Global Human Nutrition." *Nature Climate Change* 8, (2018): 834–839. [https://environment.harvard.edu/sites/default/files/smith\\_2018\\_impact\\_of\\_anthropogenic\\_co2\\_emissions\\_on\\_global\\_human\\_nutrition.pdf](https://environment.harvard.edu/sites/default/files/smith_2018_impact_of_anthropogenic_co2_emissions_on_global_human_nutrition.pdf).

2 Lowder, Sarah, Jakob Skoet, and Terri Raney. (2016). "The Number, Size, and Distribution of Farms, Smallholder Farms, and Family Farms Worldwide." *World Development* 87, (2016): 16-29.

3 Bellon, Matthieu, and Emanuele Massetti, "Economic Principles for Integrating Adaptation to Climate Change into Fiscal Policy." IMF Staff Climate Note 2022/001. Washington, DC: International Monetary Fund, 2022.

## The Opportunity

### *Solutions for strengthening smallholder resilience*

Raising the incomes and yields, as well as strengthening the resilience of small-scale farmers is critical to food and nutrition security. A wealth of evidence exists on how this can be done, including securing land rights<sup>4</sup>, ensuring access to inputs and farm equipment, providing extension services, tailoring financial services, and supplying weather information. Addressing social and cultural factors to ensure equal access to the opportunities created by agricultural interventions is also essential to strengthening the resilience of smallholders. For example, agricultural interventions must consider the specific needs of women to ensure that productivity gains translate to economic, health, and food security for all segments of the population. In Africa, for example, available data clearly indicates that despite the key role that women play in agricultural production, they represent less than 15 percent of all landowners.<sup>5</sup> It is therefore crucial women are equally represented and have an equal voice in setting priorities and resource allocations when agricultural agendas are set.<sup>6</sup>

### *Agriculture as an effective means to combat poverty and hunger*

Evidence indicates that investment in agricultural development is the most effective means of eradicating poverty and hunger.<sup>7</sup> Studies show that there have been huge improvements in human well-being where this has been effectively achieved.<sup>8</sup> In SSA, agriculture is two to four times more effective in reducing poverty than comparable growth in other economic sectors.

Agriculture's role as a proven path out of poverty is now more important than ever. Climate change is expected to bring increasingly greater climate variability which will cause disruptions in food and agricultural inputs. These disruptions occurred already during the COVID-19 pandemic and are now being repeated with the Ukraine conflict.



[Oscar Leiva/Silverlight for CRS]

Both events have wreaked havoc on global supply chains for agricultural commodities and inputs like fertilizer. Africa currently imports about 40 percent of its food.<sup>9</sup> There are growing concerns that the multiplier effects of local agricultural development will be diminished if an increasingly large share of the region's food supply is produced, processed, and distributed outside the region.<sup>10</sup> Recent

4 Food and Agriculture Organization of the United Nations. The Gender Gap in Land Rights. (n.d.). <https://www.fao.org/3/i8796EN/i8796en.pdf>.

5 ECA, AUC, FAO, WFP et al. Regional Dialogue: African Food Systems Seventh Session of the Africa Regional Forum on Sustainable Development Background Paper. 2021. <https://www.uneca.org/sites/default/files/TCND/ARFSD2021/Documents/Regional%20Dialogue%20-%20African%20Food%20Systems%20Background%20Paper%20-%20EN.pdf>.

6 Huyer, Sophia. "Closing the Gender Gap in Agriculture." *Gender, Technology and Development* 20, no. 2 (2016): 105–116. <https://www.tandfonline.com/doi/abs/10.177/0971852416643872>.

7 Dewbre, Joe, Dalila Cervantes-Godoy and Silvia Sorescu. "Agricultural Progress and Poverty Reduction: Synthesis Report." *OECD Food, Agriculture and Fisheries Papers*, no. 49 (2011). OECD Publishing, Paris. <https://doi.org/10.1787/5kg6v1vk8zr2-en>. See Food and Agriculture Organization of the United Nations. *Ending Poverty and Hunger by Investing in Agriculture and Rural Areas*. (2017). <https://www.fao.org/3/i7556e/i7556e.pdf>.

8 Janvry, Alain de, and Elisabeth Sadoulet. "Agricultural Growth and Poverty Reduction: Additional Evidence." *The World Bank Research Observer* 25, no. 1 (2010): 1-20. <http://www.jstor.org/stable/40649308>.

9 Sasson, Albert. "Food Security for Africa: An Urgent Global Challenge." *Agriculture & Food Security* 1, no. 1 (2012) 1-. Cited in: Regional Dialogue: African Food Systems Seventh Session of the Africa Regional Forum on Sustainable Development 4 March 2021, Brazzaville Congo ECA, AUC, FAO, WFP, UNICEF, IFAD, AUDA-NEPAD, AfDB, Akademiya2063, RUFORUM <https://www.uneca.org/sites/default/files/TCND/ARFSD2021/Documents/Regional%20Dialogue%20-%20African%20Food%20Systems%20Background%20Paper%20-%20EN.pdf>.

10 Yeboah, Felix Kwame and Thomas S. Jayne. "Africa's Evolving Employment Trends." *The Journal of Development Studies* 54, no. 5 (2018): 803-832. DOI: 10.1080/00220388.2018.1430767.

disruptions in the global food supply chain have brought the real costs and risks of such reliance on inherently unreliable global markets into sharper focus.

### *Crop and biodiversity*

Supporting smallholder farmers is critical for crop diversity, which supports a more resilient agriculture and can contribute to better nutrition. A recent study found that smaller farms have higher yields and promote higher levels of crop diversity and non-crop biodiversity at the field and landscape scales than larger farms.<sup>11</sup> Small-scale farmers opt for crop diversity for different reasons such as food security, market diversification, and mitigation of drought risk. Plant diversity is crucial for supporting ecosystem functions and services such as soil carbon storage, pollination, and the reduction of pests and pathogens.<sup>12</sup> Traditional indigenous territories encompass 22 percent of the world's land surface but 80 percent of the planet's biodiversity.<sup>13</sup> Smallholder farmers and indigenous peoples are mobilizing their expertise to preserve natural resources.

Converting land for food production is the biggest driver of biodiversity loss, and intensive large-scale agriculture further reduces biodiversity through the use of synthetic fertilizer and pesticides. A UN Environment Programme (UNEP) report from 2021 found that agriculture is a threat to 86 percent of global species at risk of extinction. Unsustainable agricultural practices also have negative impacts on freshwater wildlife (through water extraction and the reduction in water quality resulting from soil and farm chemical run-off). Downstream pollution, especially from fertilizers, also damages marine systems. Large intensive agriculture needs to pivot from being the main driver of land degradation to becoming the principal catalyst for land and soil restoration and biodiversity. Small scale farming, on the other hand, can promote biodiversity. Supporting the biodiversity that small-scale farms and indigenous peoples cultivate is a far cry from the current global food system where more than 40 percent of calories come from three crops – wheat, corn, and rice – and where production is concentrated in just a few regions with a few players dominating each step of the value chain.<sup>14</sup>

### *Reversing land degradation*

Land degradation is a serious problem. Unsustainable agricultural practices and land use changes – such as deforestation – are direct causes of land degradation.<sup>15</sup> Climate change is already changing two drivers of land degradation: increased frequency, intensity, and/or amount of heavy precipitation; and increased heat stress. Changes in land use (i.e., clearing forests for agriculture) also increase the risk for infectious diseases. A 2020 report notes that, since 1960, land-use change has led to the emergence of more than 30 percent of new diseases and warns that the risk of pandemics is increasing. Deforestation, agricultural expansion and land-use change bring farms and people closer to the habitats of wild animals that are natural reservoirs of infectious pathogens, allowing for spillover of zoonotic diseases – infectious diseases that can jump from non-human animals to humans – such as COVID-19 or Ebola.<sup>16</sup>

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11 Ricciardi, Vincent, Zia Mehrabi, Hannah Wittman, et al. "Higher Yields and More Biodiversity on Smaller Farms. *Nature Sustainability* 4, (2021): 651–657. <https://doi.org/10.1038/s41893-021-00699-2>.

12. Díaz, Sandra, Josef Settele, Eduardo Brondizio, et al. Summary for Policymakers of the Global Assessment Report on Biodiversity and Ecosystem Services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services. 2019. IPBES secretariat, Bonn, Germany.

13 "6 Ways Indigenous Peoples Are Helping the World Achieve #ZeroHunger." Food and Agriculture Organization of the United Nations, 2017. <https://www.fao.org/zhc/detail-events/en/c/1028010/>.

14 Cohen, Mark, Guillaume Compain, Thierry Kesteloot, et al. Fixing our Food System: Debunking 10 Myths about the Global Food System. 2022. Oxfam. <https://oxfamlibrary.openrepository.com/bitstream/handle/10546/621411/bp-food-systems-10-myths-080922-en.pdf?sequence=1>.

15 Olsson, Lennart, Humberto Barbosa, Suruchi Bhadwal, et al. "Land Degradation." In *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*. 2019. [https://www.ipcc.ch/site/assets/uploads/sites/4/2019/11/07\\_Chapter-4.pdf](https://www.ipcc.ch/site/assets/uploads/sites/4/2019/11/07_Chapter-4.pdf).

16 Benton, Tim, Carling Bieg, Helen Harwatt, et al. Food System Impacts on Biodiversity Loss: Three Levers for Food System Transformation in Support of Nature. 2021. Chatham House. [https://www.chathamhouse.org/sites/default/files/2021-02/2021-02-03-food-system-biodiversity-loss-benton-et-al\\_0.pdf](https://www.chathamhouse.org/sites/default/files/2021-02/2021-02-03-food-system-biodiversity-loss-benton-et-al_0.pdf).



[Malikte Tadesse for CRS]

Land degradation has the greatest impact in drylands, which cover about 45 percent of Africa’s land area and where low soil fertility and scarcity of water resources—which leads to low crop yields—threatens food and nutrition security.<sup>17</sup> Land degradation affects women and girls disproportionately because when land is degraded and soil productivity declines, they will have to work more to produce food and get water.<sup>18</sup> Low levels of organic matter also make soils less able to retain water and reduce crop response to fertilizers. When land is degraded, soil carbon and nitrous oxide are released into the atmosphere making land degradation a contributor to climate change. In these areas, a combination of soil and water management techniques— including agroforestry, water harvesting, microdosing crops with small quantities of fertilizer, no-burn agricultural methods, and other agroecological approaches— provide additional opportunities to boost crop yields.<sup>19</sup>

Maintaining soil organic matter is vital for farmers and ranchers everywhere as it is critical for agricultural productivity because it increases soil fertility, reduces erosion, increases moisture retention, and improves habitats for various forms of biodiversity. The growing attention to soil organic carbon (SOC) in global initiatives such as Global Soil Partnership<sup>20</sup>, Nature-Based Solutions Initiative<sup>21</sup>, and Sustainable Development Goal 15.3<sup>22</sup> are therefore important. A range of agronomic practices exist (see Box 1) that improve soil structure and water retention capacity which builds the resilience of the agro-ecosystem. Equally important is that the agronomic practices help farmers adapt to climate change, increase their yields, and as such, provide important livelihood benefits. Agroforestry - the integration of trees into farms - and food security, for example, have a consistent positive relationship, as there are co-benefits to soil and water quality by incorporating tree cover into crop rotational systems. Because of these beneficial interrelationships between productivity and agroforestry, many

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17 ELD Initiative & UNEP. *The Economics of Land Degradation in Africa: Benefits of Action Outweigh the Costs*. 2015. [https://wedocs.unep.org/bitstream/handle/20.500.11822/7467/The\\_Economics\\_of\\_Land\\_Degradation\\_in\\_Africa\\_Benefits\\_of\\_Action\\_Outweigh\\_the\\_Costs;\\_A\\_complementary\\_report\\_to\\_the\\_ELD\\_Initiative-2015ELD-unesp-report\\_.pdf?sequence=2&BisAllowed=](https://wedocs.unep.org/bitstream/handle/20.500.11822/7467/The_Economics_of_Land_Degradation_in_Africa_Benefits_of_Action_Outweigh_the_Costs;_A_complementary_report_to_the_ELD_Initiative-2015ELD-unesp-report_.pdf?sequence=2&BisAllowed=).

18 Fleming, Marie and V. Davis. 2020. *The Effect of Soil Degradation on the Nutritional Quality of Food*. (Unpublished report, 2020). Catholic Relief Services.

19 FAO. *The State of the World’s Land and Water Resources for Food and Agriculture – Systems at Breaking Point*. 2021. <https://doi.org/10.4060/cb7654en>.

20 “Why a Global Soil Partnership?” Food and Agriculture Organization of the United Nations. <https://www.fao.org/global-soil-partnership/about/why-the-partnership/en/>.

21 “What Is the Nature-based Solutions Initiative and What Are Nature-based Solutions?” Nature-Based Solutions Initiative. <https://www.naturebasedsolutionsinitiative.org/what-are-nature-based-solutions>.

22 “Goal 15.” UN Department of Economic and Social Affairs: Sustainable Development. <https://sdgs.un.org/goals/goal15>.

studies also find positive relationships between agroforestry and economic equity as income sources are diversified.<sup>23</sup> Agroforestry can also enhance land tenure and land rights and sequester carbon.<sup>24</sup> Investing in these types of practices offers a range of benefits to farmers and helps to sequester carbon. SOC sequestration is an important function of soil but not the goal of agriculture.

## Potential for Change

*Addressing the real impacts of climate change on smallholder farmers demands that we, as a global community, rethink what we grow and how we grow it.* The Director General of the Food and Agriculture Organization (FAO) of the United Nations has already set the direction by stating that “the predominant agricultural model today does not respond to the food security challenges of the 21st century”.<sup>25</sup>

There is an urgent need to transition to a more resilient agricultural paradigm. The Paris Agreement set a clear target for climate change mitigation: to hold the global increase in temperature to well below 2° Celsius and pursue 1.5° Celsius above preindustrial levels. The priority for climate change adaptation is to reduce vulnerability to climate change and extreme weather variability. There are many known practices that can increase agricultural productivity, foster biodiversity, improve food and nutrition security, and promote market opportunities.

Driving transformational change in agriculture at the required scale needs to be holistic, context-dependent, and must avoid creating negative outcomes for the environment and natural resources. It also must provide a clear path out of poverty for millions of smallholder farmers. Concerted action must be taken to increase investment in the agricultural sector and in smallholders specifically. While the exact level of funding needed for small-scale agriculture climate finance is hard to determine, some estimates place the needs of smallholder farmers at roughly USD \$240 billion per year globally.<sup>26</sup> For 2017/2018, the total climate finance targeted for smallholder agriculture was close to USD \$10 billion which represented 1.7 percent of the total tracked climate finance with nearly half (49 percent) of that money being spent on climate adaptation. It’s hard to know how much of this 1.7 percent goes to support women smallholder farmers. Structural inequalities make women disproportionately vulnerable to climate change impacts, yet they receive the least assistance. Overall, climate finance is disproportionately low when compared to the importance of smallholder agriculture to the economies of developing countries.

Therefore, massive efforts to increase investment in smallholder agriculture are sorely needed. This is why efforts like the one made by the United States and the United Arab Emirates at COP26 are so important. At COP26, both countries launched Agriculture Innovation Mission for Climate (known as AIM4C) to increase investment. AIM4C is “focused on increasing investment and enabling greater public-private and cross-sectoral partnerships to drive climate-smart agriculture and food systems.”<sup>27</sup> The initiative has over 70 partners<sup>28</sup> and it is organized around “innovation sprints”. The website includes a list of interesting technological innovations including vertical farming, drone-based

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23 Adidja, M. W., J. Mwine, J.G.M. Majaliwa, et al. “The Contribution of Agro-Ecology as a Solution to Hunger in the World: A Review.” *Asian Journal of Agricultural Extension, Economics and Sociology* 33, no. 2 (2019): 1–22. <https://doi.org/10.9734/ajaees/2019/v33i230170>.

24 Shi, Lingling, Wenting Feng, Jianchu Xu, et al. “Agroforestry Systems: A Meta-analysis of Soil Carbon Stocks, Sequestration Processes, and Future Potentials.” *Land Degradation and Development* 29, no. 11 (2018): 3886–3897. <https://doi.org/10.1002/ldr.3136>; Ramos, Helen M. N., Steel S. Vasconcelos, Osvaldo R. Kato, et al. “Above- and Belowground Carbon Stocks of Two Organic, Agroforestry-based Oil Palm Production Systems in Eastern Amazonia.” *Agroforestry Systems* 92, no. 2 (2018): 221–237. <https://doi.org/10.1007/s10457-017-0131-4>.

25 Caplat, Jacques and Juliette Leroux, “When ‘Feeding the World’ Puts Food Security at Risk.” *Green European Journal*. 2017. <https://www.greeneuropeanjournal.eu/when-feeding-the-world-puts-food-security-at-risk/>.

26 Chiriack, Daniela, Baysa Naran, and Angela Falconer. *Examining the Climate Finance Gap for Small-Scale Agriculture*. 2020. Climate Policy Initiative, IFAD. <https://www.climatepolicyinitiative.org/wp-content/uploads/2020/11/Examining-the-Climates-Finance-Gap-in-Small-Scale-Agriculture.pdf>.

27 Aim for Climate. “What Are We Aiming For.” 2017. <https://www.aimforclimate.org/#what-are-we-aiming-for>.

28 It’s important to note that Aim4C has a range of knowledge partners some of whom have been criticized as some of the members are accused of denying that human activities cause climate change (see <https://www.desmog.com/2022/10/06/aim4c-climate-science-denial/>).

information systems and cultured meat. Technological innovations will be necessary to address the challenges that agriculture faces; but equally necessary are the social and institutional reforms needed to resolve issues such as socio-economic trade-offs and equity implications. For example, high-tech agriculture might have undesirable effects on value chains and smallholder farmers by increasing dependence on providers of certain technologies or types of data. In many cases, technological innovations can play an enabling or accelerating role, but real agricultural transformation requires much more than just technological innovation. It requires coordinated action to support smallholders directly and to create the enabling environment that is outlined in the new consensus with small scale food producers.<sup>29</sup> It bears mentioning that there is already a lot of knowledge and existing technologies and practices that would contribute to changing the way agriculture is practiced (e.g. conservation agriculture, agroforestry, etcetera) that are not new, but their uptake needs to be increased by making it feasible and financially rewarding for farmers to adopt them and to access the right markets.

COP27 will need to deliver more for the world's smallholders who are on the frontlines of the climate and food crisis. It is being called a "food COP" because there will be a pavilion on food systems for the first time ever. AIM4C will announce new topics for their "innovation sprints", including a focus on smallholder farmers in low- and middle-income countries and agroecological research. It is critical that this round of "innovation sprints", with its emphasis on smallholder farmers, is driven by them.

As this brief has shown, agriculture occupies a unique place in the efforts to combat climate change as well as adapt to it. The UNFCCC has in fact already recognized the unique role of agriculture within climate negotiations. At the twenty-third Conference of the Parties (COP23) in 2017, the UNFCCC brought agriculture into climate negotiations through the Koronivia Joint Work on Agriculture (KJWA). KJWA requested the two Subsidiary Bodies of the UNFCCC [the Subsidiary Body for Scientific and Technological Advice and the Subsidiary Body for Implementation] to jointly address issues related to agriculture with a particular focus on the vulnerabilities of agriculture to climate change and essential support for food security. The KJWA created a multi-stakeholder mechanism and held expert meetings on five interrelated themes, inviting Parties and observers to make submissions on these themes. The KJWA roadmap came to an end in 2020. At COP27, the KJWA will report its conclusions and Parties will agree on its future.

## COP27

At COP27 in Egypt, Parties will agree on the future of the KJWA. Continuing the work begun by KJWA and giving it a new mandate is essential to transforming the global food system to face climate change. Supporting the millions of smallholder farmers to prosper will promote local and national food production and will help the most vulnerable to withstand the amplification of negative risks caused by the volatility of global geopolitics. Investing in smallholders can contribute to broad-based economic growth. At the same time, the world needs to move away from the current intensive agriculture model if it wants to limit global temperature rise to 1.5° C. An important step in building this new agricultural model is how we grow food and treat the land and soil upon which this is done. Excessive fertilizer use, deforestation, and pesticides have a range of negative consequences for people as well as the health and quality of soils, water sources, and ecosystems. *COP27 is taking place at a critical juncture with an opportunity to commit to increasing climate finance to support the adaptation of smallholder agriculture and to transition the agricultural sector to a more sustainable, low-emission model.*

## CRS' Stake

As a humanitarian and development organization that works in over 100 countries with many farming communities, Catholic Relief Services (CRS) and its partners are seeing the effects that extreme weather events related to climate change are having on crop yields, food security, and income. We also see the agricultural solutions that communities and local organizations are pioneering which require

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<sup>29</sup> SDG2 Advocacy Hub. A New Consensus with Small-Scale Food Producers: Prioritising Smallholders' Nutrition and Livelihoods. 2022. <https://drive.google.com/file/d/11oYF5cVdKnckk-wiesB79zR1HRFfhGDH/view>.



urgent financial support to achieve scale (see Box 1). COP27 needs to deliver for the millions of smallholder farmers who are on the frontlines of the climate crisis.

## Decision Points

In Egypt, leaders will gather to reassert their commitment to reducing greenhouse gas emissions. At the same time, science is telling us that the window of opportunity is closing rapidly. At COP27, CRS is therefore appealing to leaders to take urgent action to:

- Reaffirm the centrality of agriculture for food and nutrition security, poverty reduction, and livelihood opportunities and ensure that the sector is resilient to climate change.
- Recognize that smallholder farmers and indigenous peoples need to be at the center of discussions on agriculture and sustainable natural resource management.
- Increase climate finance to support the agricultural sector anchored in the principles of subsidiarity. This would ensure that finance goes to farmers' organizations and local organizations to support their agricultural priorities.
- Invest in soil health as it is the foundation of future viability of the agricultural sector and its ability to adapt to climate change.

Parties also need to agree on a new mandate for the Koronivia Joint Working Group on Agriculture (KJWA). A post-COP27 KJWA body should be mandated to:

- Continue to be the discussion forum within the UNFCCC on food security and agriculture-related issues.
- Engage directly with the Green Climate Fund to identify key priorities for support to urgently increase climate finance for smallholder agriculture.
- Ensure coordination across the UNFCCC with bodies such as the Nairobi Work Programme, the Standing Committee on Finance, the Global Goal on Adaptation, and others.
- Engage with other UN agencies whose mission is supporting food and agriculture such as Food and Agriculture Organization (FAO), World Food Program (WFP), International Fund for Agricultural Development (IFAD), and Committee on World Food Security (CFS).
- Develop technical guidelines to support countries as they adapt their agriculture sector within their Nationally Determined Contributions.
- Develop technical guidelines on how to enhance synergies between adaptation and mitigation.
- Share knowledge and foster action on agriculture by financial institutions outside of the UNFCCC (e.g., World Bank, African Development Bank, Asia Development Bank).



[Dinorah Lorenzana for CRS]

## Box 1: Reversing land degradation – CRS’ approach to scaling prosperity from the ground up

In 2020, building on decades of experience working with small-scale farmers and rural communities, CRS began to invest more in a ***people-centered approach to accelerate land restoration by connecting communities’ and individuals’ environmental and economic goals at a landscape level.*** Understanding farmers’ need for low-cost and low-labor solutions that had rapid returns in income and water availability, CRS focused on proven restoration practices that met these needs.

The ***first step is to train farmers on practices that foster soil fertility and increase water retention in soil.*** CRS is implementing four restoration models: drylands greening, watershed restoration, water smart agriculture and multi-story agroforestry. The specific restoration model employed in each case depends on the agro-ecological zone the person and community are in. ***CRS also links farmers to financial services and to markets.***

CRS is currently implementing these restoration efforts in Lesotho, Madagascar, Ethiopia, Niger, Guatemala, Nicaragua, Honduras, and El Salvador. In each case where these restoration models have been applied, impacts are rapid and consequential for farmer income, community food security, and water availability.

In addition to increased production and income in all participating countries, other key results to highlight include:

- Increased dry season production in Guatemala;
- Reduced dependence on food assistance in Malawi; and
- Restored water sources in Lesotho.

In the coming years, the program will expand to additional countries. By 2030, CRS aims to revitalize 4 million acres of pasture and agricultural land, increasing agricultural yield by 40 percent for one million farmers. To achieve such scale, CRS prioritizes collaboration with a variety of rural organizations, agricultural institutions, and policy makers, as well as alignment with government initiatives, multi-stakeholder platforms and programs where appropriate. By placing people at the center of restoration strategies and connecting environmental and economic goals, CRS’ approach will accelerate and sustain restoration to help foster more resilient farms and communities for generations to come.