



Short Note on Climate-Smart Agriculture

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DESCRIPTION

Climate-smart agriculture (CSA) may be defined as an approach for transforming and reorienting agricultural development under the new realities of climate change. The most commonly used definition is provided by the Food and Agricultural Organisation of the United Nations (FAO), which defines CSA as “agriculture that sustainably increases productivity, enhances resilience (adaptation), reduces/removes GHGs (mitigation) where possible, and enhances achievement of national food security and development goals”. In this definition, the principal goal of CSA is identified as food security and development while productivity, adaptation, and mitigation are identified as the three interlinked pillars necessary for achieving this goal.

A growing global population and changing diets are driving up the demand for food. Production is struggling to keep up as crop yields level off in many parts of the world, ocean health declines, and natural resources including soils, water, and biodiversity are stretched dangerously thin. A 2020 report found that nearly 690 million people or 8.9 percent of the global population are hungry, up by nearly 60 million in five years. The food security challenge will only become more difficult, as the world will need to produce about 70 percent more food by 2050 to feed an estimated 9 billion people.

The problem also works in reverse. Agriculture is a major part of the climate problem. It currently generates 19–29% of total greenhouse gas (GHG) emissions. Without action, that percentage could rise substantially as other sectors reduce their emissions. Additionally, 1/3 of food produced globally is either lost or wasted.

Climate-smart agriculture (CSA) is an integrated approach to managing landscapes—cropland, livestock, forests and fisheries that address the interlinked challenges of food security and accelerating climate change. CSA aims to simultaneously achieve three outcomes.

Increased productivity: Produce more and better food to improve nutrition security and boost incomes, especially of 75 percent of

the world's poor who live in rural areas and mainly rely on agriculture for their livelihoods.

Enhanced resilience: Reduce vulnerability to drought, pests, diseases and other climate-related risks and shocks; and improve capacity to adapt and grow in the face of longer-term stresses like shortened seasons and erratic weather patterns.

Reduced emissions: Pursue lower emissions for each calorie or kilo of food produced, avoid deforestation from agriculture and identify ways to absorb carbon out of the atmosphere.

Climate-smart agriculture (CSA) is an integrative approach to address these interlinked challenges of food security and climate change that explicitly aims for three objectives:

Sustainably increasing agricultural productivity, to support equitable increases in farm incomes, food security and development; adapting and building resilience of agricultural and food security systems to climate change at multiple levels; and reducing greenhouse gas emissions from agriculture (including crops, livestock and fisheries).

What is new about CSA is an explicit consideration of climatic risks that are happening more rapidly and with greater intensity than in the past. New climate risks require changes in agricultural technologies and approaches to improve the lives of those still locked in food insecurity and poverty and to prevent the loss of gains already achieved. CSA approaches entail greater investment in

- Managing climate risks,
- Understanding and planning for adaptive transitions that may be needed, for example into new farming systems or livelihoods,
- Exploiting opportunities for reducing or removing greenhouse gas emissions where feasible.

CSA maintains ecosystems services: Ecosystems provide farmers with essential services, including clean air, water, food and materials. It is imperative that CSA interventions do not contribute to their degradation. Thus, CSA adopts a landscape approach that builds upon the principles of sustainable agriculture but goes beyond the narrow sectoral approaches that

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result in uncoordinated and competing land uses, to integrated planning and management.

To achieve food security goals and enhance resilience, CSA approaches must involve the poorest and most vulnerable groups. These groups often live on marginal lands which are most vulnerable to climate events like drought and floods. They are, thus, most likely to be affected by climate change. Gender is another central aspect of CSA. Women typically have less access

and legal right to the land which they farm, or to other productive and economic resources which could help build their adaptive capacity to cope with events like droughts and floods. 6 CSA strives to involve all local, regional and national stakeholders in decision-making. Only by doing so, is it possible to identify the most appropriate interventions and form the partnerships and alliances needed to enable sustainable development.