



Climate-Smart Agriculture (CSA): An Integrated Approach and Its Aim

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The demand for food is rising as a result of changing diets and a growing worldwide population. As food yields plateau in many regions of the world, ocean health deteriorates, and natural resources—including soils, water, and biodiversity—are severely depleted, production is straining to keep up. According to a report from 2020, 8.9% of the world's population—an increase of roughly 60 million in five years—is hungry. As the globe must produce almost 70% more food by 2050 in order to feed an expected 9 billion people, the problem of food security will only get worse.

The difficulty is made more difficult by agriculture's great sensitivity to climate change. Increased temperatures, weather variability, shifting agroecosystem boundaries, invasive crops and pests, and an increase in extreme weather events are just a few of the negative effects of climate change that are already being felt. On farms, climate change is diminishing animal output, the nutritional value of main cereals, and crop yields. To sustain existing yields and enhance production and food quality to satisfy demand, significant adaptation investments will be needed.

The issue can also be reversed. A significant contributor to the climate issue is agriculture. Presently, it is responsible for 19–29% of global greenhouse gas (GHG) emissions. If nothing is done, that percentage might significantly increase as other industries cut their emissions. Additionally, a third of the food that is produced worldwide is lost or squandered. To accomplish climate targets and lessen environmental stress, addressing food loss and waste is essential.

Triple Win of CSA

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

1. **Increased productivity:** Produce more and better food to increase earnings and improve nutrition security, especially for the 75% of the world's poor who reside in rural regions and mostly depend on agriculture for their subsistence.
2. **Enhanced resilience:** Improve ability to adapt and flourish in the face of longer-term challenges like shortened seasons and unpredictable weather patterns. Reduce vulnerability to drought, pests, diseases, and other climate-related risks and shocks.
3. **Reduced emissions:** Reduce emissions per calorie or kilogramme of food produced, prevent agricultural land from being cleared, and find methods to remove carbon from the atmosphere.

CSA is unique in a number of respects, despite being founded on the existing knowledge, technologies, and sustainable agriculture concepts. It explicitly focuses on addressing climate change, to start. Second, the synergies and tradeoffs between productivity,

adaptability, and mitigation are systematically taken into account by CSA. Finally, CSA seeks to seize fresh funding possibilities in order to make up for the investment shortfall. Find out more about CSA basics, planning, financing, investing, and more in the online guide to CSA developed in collaboration with the Research Program on Climate Change, Agriculture, and Food Security (CCAFS) of the CGIAR.

Climate-Smart Agriculture and the World Bank Group

Climate-smart agriculture is now being expanded by the World Bank Group (WBG). The World Bank committed to collaborating with nations to produce climate-smart agriculture that achieves the triple win of higher production, enhanced resilience, and reduced emissions in its first Climate Change Action Plan (2016-2020) and the upcoming update spanning 2021–2025. 52 percent of World Bank funding for agriculture in 2020 has climate adaptation and mitigation as a goal.

The WBG portfolio will also be rebalanced to place more emphasis on adaptation and resilience and strengthen its focus on impact at scale. In order to fulfil these pledges, we are assessing all projects for climate risks, and we'll keep creating and utilising metrics and indicators to assess results and take into account greenhouse gas emissions in our operations and projects. These initiatives will aid in the implementation of our client nations' Nationally Determined Contributions (NDCs) in the agricultural sector and advance the Sustainable Development Goals (SDGs) for combating climate change, ending poverty, and ending hunger.

The World Bank Group also supports research initiatives like the CGIAR, which creates resilient technology, early warning systems, risk insurance, and other breakthroughs to address climate change.

The Climate-Smart Agriculture (CSA) Country Profiles fill a knowledge gap by explaining the vocabulary, elements, and pertinent issues of CSA as well as how to contextualise them for various national contexts. These profiles are also a mechanism for determining a baseline for climate-smart agriculture at the national and sub-national levels of a country, which can direct investments and development in climate-smart agriculture. For Bangladesh, Zimbabwe, Zambia, Lesotho, Mali, Burkina Faso, Ghana, Cote D'Ivoire, Morocco, and the Republic of Congo, the World Bank has also created more than ten Climate-Smart Agriculture Investment Plans (CSAIPs). According to the CSAIPs, there are CSA investments worth more than US\$2.5 billion that might help more than 80 million people in the covered nations.

Conclusion

In current scenario climate-smart agriculture plays very important role in modern agriculture. By Climate-smart agriculture we can solve the problem of food security. Now it is becoming a popular in our country as well as all over world. It uses land efficiently and enhance the productivity of per unit land.