



INCREASING AGRICULTURE'S CLIMATE SMARTNESS

THE GOALS OF CLIMATE SMART AGRICULTURE INCLUDE:

- increasing productivity and income (livelihoods),
- strengthening resilience of ecosystems (adaptation),
- reducing or removing greenhouse gases (mitigation),
- enhancing local and national food, nutrition, and energy security and development.

Achieving these goals simultaneously will require policies, practices and processes framed within a broader development approach that builds on synergies and trade-offs among the multiple functions of agriculture and ecosystems from the farm to the landscape level.

UNDERSTANDING THE USUAL OBSTACLES IN AN UNUSUAL SCENARIO

The barriers that need to be addressed are historic – typical of agricultural development – as well as unprecedented – based on a set of seemingly unpredictable threats. While the barriers are intractable they are not insurmountable. Obstacles can be technological, knowledge, labour and market related. The climate dimension necessitates analyzing and understanding the associated trade-offs among practices aimed at food, nutrition and energy security, mitigation and adaptation in the short term and long term. Trade-offs can manifest in conflicts over biomass use, short term yields vs. long-term natural capital building, the enhancement of one ecosystem service over others, redirection of labour and loss of income among others. It is necessary to establish the associated trade-offs and the long-term costs and benefits to incentivize sustainable practices.

CLIMATE-SMART AGRICULTURE
for development

DEALING WITH UNCERTAINTY

Agriculture has a dual relationship with climate change - agriculture is a key emitter of greenhouse gases and at the same time, farmers have to contend with the impacts of climate change in the form of unpredictable weather patterns and extreme events. A suite of techniques and livelihood strategies is needed to respond to the day-to-day risks and vulnerabilities associated with these uncertainties. A climate smart agriculture will have to be one that can adjust the management systems and production factors (soil, water, nutrients, crops, trees, livestock) with the aim of optimizing short and long-term benefits taking into account the range of possible future scenarios in a given location. Methodologies will be required to clarify, prepare for and adapt to these changes over the longer term including through the use of "analogue sites" to realize potential outcomes of climatic shifts.

TRANSITIONING TO ECO-FUNCTIONAL INTENSIFICATION AND LANDSCAPE APPROACHES TO SUPPORT SUSTAINABLE FOOD SYSTEMS

Climate smart or development smart agriculture is one that ensures that agriculture transcends the multiple issues with which it is currently associated – GHG emissions, loss of biodiversity, water misuse, soil and land degradation and socio-economic inequities which are compromising the world's capacity to feed its population. Integrative approaches and boundary dynamics must be incorporated to ensure sustainable food and energy producing landscapes that underpin equitable value-benefit chains. Integrated agro-ecological practices (crop-livestock-tree systems) that enhance yields through harnessing the ecosystem services and reduce pressure for conversion of forest (sustainable and carbon sequestering land sparing, with supportive policies) can provide benefits in terms of mitigation, adaptation and food security and should be further developed.

PRACTICE, PROCESS AND POLICY PROMPTS

To develop climate smart landscapes, functioning institutional arrangements will be tantamount. Multi-stakeholder processes and multi-sectoral coordination to address the multiple objectives of climate smart agriculture must be mainstreamed to become the 'enlightened norm'. Farmer Field Schools, Rural Resource Centres and Landcare groups can play a critical role in awareness raising and capacity development towards farmer-and pastoralist stewarded landscape management while "dialogue and exposure visits" can influence national decision makers. Among others, biophysical, ecological and socio-economic research will be required to assess appropriate actions and their effect on ecosystem function within different future scenarios and assist in the development of indicators for eco-functional/sustainable intensification and resilience at the landscape level. Promoting large-landscape approaches will need to be supported by coherent policies, investments, and markets that encourage transparent cross-sectoral decision-making toward desired outcomes through national processes (e.g. NAPAs, NAMAs); incentivize the enhancement of ecosystem processes and climate smart innovations and business opportunities; mobilize financial support to transition farmers and pastoralists to climate smart agriculture; and ensure all agricultural investments are climate- and development-smart agriculture.



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