

'Climate-smart ecological farming- not a presumption but reality'

When it emerges as a choice between ecological farming and organic farming, the former is defined by its desired outcomes—agricultural systems that are resilient, productive, and have low emissions – Ardhendu Shekhar Chatterjee

Ardhendu Shekhar Chatterjee, founder and advisor to the **Development Research Communication and Services Centre**, a nonprofit making organization dedicated to sustainable development in the West Bengal, always talks about how ecological farming practices can lead to climate-smart agriculture which conserves natural resources but at the same time offer small and marginal farmers a self-fulfilling life.

What are the best ways to reduce carbon foot print & greenhouse gases emissions associated with conventional farming?

The best ways to reduce them is to innovate with farming techniques locally as much as possible and cut down the dependency on external sources.

The principles of ecological and organic agriculture are associated with input internalization and local demands. Reusing of agricultural wastes rather than burning also reduces greenhouse gases. We also have technology to use livestock wastes in fruitful ways.

How different is the idea of climate-smart agriculture when compared to organic farming? Do you think organic farming shows us the trail towards a more sustainable future?

As a practitioner of sustainable agriculture, conservation of agricultural diversity, farming using on-farm inputs, appropriate crop management to manage and sustain soil health and ensuring the health, safety and nutrition of food are the paths to a sustainable future.

Do you believe a global transition to a more resilient and sustainable farming practice that draws more on natural biological and ecosystem processes will help us achieve zero hunger and good environmental space by 2050?

I certainly think so, provided (that) agriculture research should focus research on alternative farming techniques that has the potential to conserve the energy flow from and within the farm. In this debate I'd like to add that the direction and our national policy must commit themselves to it and create an enabling platform for all the stakeholders associated in farming.

How does the notion of climate-smart cultivation deal with the following issues: land fragmentation, increasing competition for natural resources, stagnation in growth of crop yields and impacts of higher temperatures, droughts and flooding?

Climate-smart cultivation would preferably invest in and endorse innovative, adaptive agricultural techniques among the farming communities working towards restoring and conserving natural resources.

It will also use land and water optimally, do seed selection (from indigenous sources) and adapt to unpredictable weather conditions armed with the knowledge of options, choices and resources to use them.

In the recent perspective of climate change, should we focus on producing more with less or should adaptation be the keyword?

They are not mutually exclusive and farming is very site specific, so there cannot be universal solutions. However, system oriented approach of ecological farming has the potential to gratify both.

Do you think climate-smart farming can thwart India's food scarcity and deal with growing population pressure?

Climate-smart farming is not an option rather it is a necessity now. We didn't feel this need before the commencement of 21st Century and research on environmental situation from late '70s. Therefore, this is the only ideological option left for us to survive on this planet. The first pillar of climate-smart farming is resource integration which has no conflict with individual profitability or productivity. Farmers need productivity, but also need diversity along with adaptation and mitigation efforts.

Dry regions of West Bengal as well as India have observed one of its nastiest droughts this year. How will climate-smart farming help those regions of our country in managing its natural resources better?

Climate-smart farming which DRCSC termed as ecological farming should create readiness to deal with extreme weather conditions and weather uncertainties (by incorporating the help of innovations in this field), which are becoming the new standards. Management of natural resources including water cannot be left to governments. Every civilian and every cultivator has his role and responsibility in this regard.

Every ecological farmer would incorporate practices like- farm pond, hapa or ditches, bundings, trenching, mulching, integrating local resources and other practices for conservation of soil moisture, use suitable seeds and on-farm inputs and to have better access and control over required water resources in those dry regions.

In what ways can climate-smart farming be used in dry regions to ensure crop production?

Dry land communities have lived in and farmed small parcels of land, terracing them (in plateau region) and using them for their food and nutrition security.

From our 30 or more years' of experience we have seen that cultivars of those regions have grown crops, raised livestock, fished and utilized forests sustainably by making a balance between nature and need. However, we have seen very few sporadic efforts on research and resource support building on their own traditional knowledge and experience as well as natural advantages which can make their effort more worthwhile. Research in this regard has the potential to do this even better for themselves and the larger community. Moreover, dry regions have been repositories of agrobiodiversity as well as understanding of risk resilience, both of which are interlinked.