logies and production practices) is likely to be reduced by 12.19 lakh tons (about 4.2 per cent of current annual rice production) due to the impact of climate change (drought, inundation and salinity).

Other studies have indicated loss in crop production as a result of climate change. Decrease in crop production will negatively affect the availability and consumption of food items. Poor and climate refugees will be the worst victims of climate change.

Implications for Adaptation Strategy

Bangladesh will require enormous efforts to adapt with the changes in climatic condition. In this context, IPCC has rightly observed that adaptation to climate change in Asian countries depends on the affordability of adaptive measures, access to technology, and bio-physical constraints such as the availability of land and water resource, soil characteristics, genetic diversity for crop breeding (e.g. crucial development of heat-resistant rice cultivars), and topography.

We have to formulate policies for adaptation to climate change with clearly defined risks at the ecological zone and village level.

To mitigate the negative impacts of climate change on agriculture, we must develop an adaptation strategy. Strengthening research for development of drought, flood and saline tolerant varieties of other crops will be needed to facilitate adaptation in future. More investment and dependence on biotechnology, GIS, remote sensing and ICT would be needed for technology generation and dissemination. Long-term weather forecasting along with crop production and crop husbandry recommendations will be needed.

We have to formulate policies for adaptation to climate change with clearly defined risks at the ecological zone and village level. To reduce risks, climate risk reduction action plan has to be developed which will be able to respond to the need. Piloting of activities and projects will be needed to ensure that those can actually be implemented. For successful implementation of adaptation strategy and delivery of projects, monitoring, evaluation and feedback should be an integral part of the strategy.

Different crop production zones have to be established in the country. Since northern drought prone areas are likely to face more droughts, a pragmatic strategy will be needed to transform that region into a non-rice crop-growing zone particularly in the dry season.

In the winter, cultivation of crops that require no or little water like chickpea, lentil, maize, etc should be promoted as part of adaptation strategy. Water efficient and drought tolerant high value horticultural crops (mango, jujube, guava, custard apple, sweet tamarind, etc) should be promoted throughout the year.

During the rainy season, development and promotion of drought tolerant rice varieties will be required. Bihar state of India has already developed drought tolerant rice varieties. In the southern region, cultivation of Boro rice using surface water should be promoted.

Bangladesh Rice Research Institute (BRRI) has developed several salt-tolerant rice varieties such as BR 10, BR 23, BRRI Dhan 41 and BRRI 47. However, with the changed climatic condition, we will require new varieties since salinity level will be increased further in future.

To face the challenges of prolonged submergence, we shall need submergence tolerant varieties. BRRI has been conducting research on submergence tolerance varieties (Swarna Sub2). This type of research should be continued and encouraged.

In the coastal belt, Malaysian dwarf coconut trees can be experimented and promoted to minimize risk of damage by cyclone. Development of eco-specific adaptive knowledge (including indigenous knowledge) to cope with climate variability will be needed to enhance adaptive capacity. Partnership with international agricultural research and development organisations and Saarc countries for agricultural research and development will be required. Bangladesh in the past has successfully faced many challenges. Hopefully, our leaders will be able to strengthen our capacity at all levels (national, district, upazilla, village and household) to face the challenges of adapting our agriculture and ensure food security through formulation and implementation of an adaptation strategy.

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