MAKE IT REAL

> The model's results will help improve irrigation management and crop diversification in light of water scarcity and climate change
>
> Department of Agricultural Extension

Ensuring food security by studying the water–food nexus

Context and problem
Bangladesh faces a food security challenge because of population growth, changing dietary pattern, land use change and unreliable water resources. Some of these challenges are compounded by climate change.

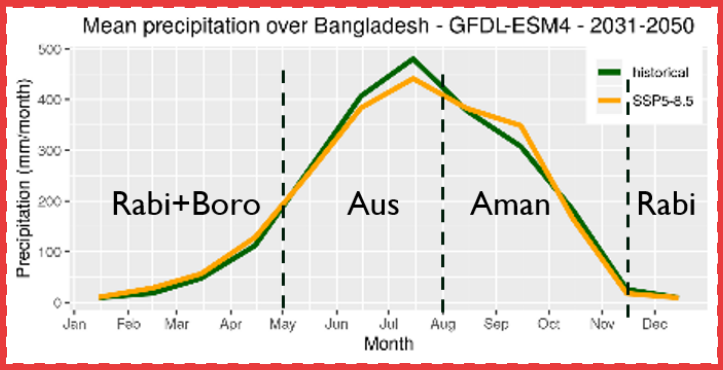
How can Bangladesh ensure food security for its citizens despite climate-induced water scarcity?

Researching this question
Food demand and food availability were calculated for different scenarios, while taking water availability into consideration.

Climate change affects the availability of water and hence the availability of food. Recognising this water–food nexus and analysing the dietary pattern of Bangladeshis indicate the need to switch to climate-resilient, yet nutritious crops.

FOOD DEMAND AND FOOD AVAILABILITY IN BANGLADESH

1.Water and food
With growing concerns about the availability of water, and the reality of water–food nexus, Bangladesh has to address the question of future food security. As this depends on present food availability and food demand, both were calculated for field level and global models.



Change of precipitation in context of crop seasons of Bangladesh

2.Future projections
Survey reports and yearbooks of various government departments provided the current data pertaining to crop production, yield, dietary pattern, etc. Though the modelling framework needs improvement, calculations of future food production and other projections were validated by experts during stakeholder consultations.

3. Changing patterns
The global model study revealed the yield of wheat, potato and pulses diminishing, and the yield of rice increasing marginally. Crop loss due to land use change and other factors will be aggravated by climate-induced water scarcity, ultimately creating food shortage.

Joint Cooperation Programme Bangladesh-the Netherlands

Identifying pathway
To ensure future food security the policies should not only promote climate-resilient yet nutritious crops but also ensure judicious use of available water resources.

KEY MESSAGE

Improving irrigation practices and growing climate-resilient crops can help Bangladesh fulfill the increasing food demand.

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