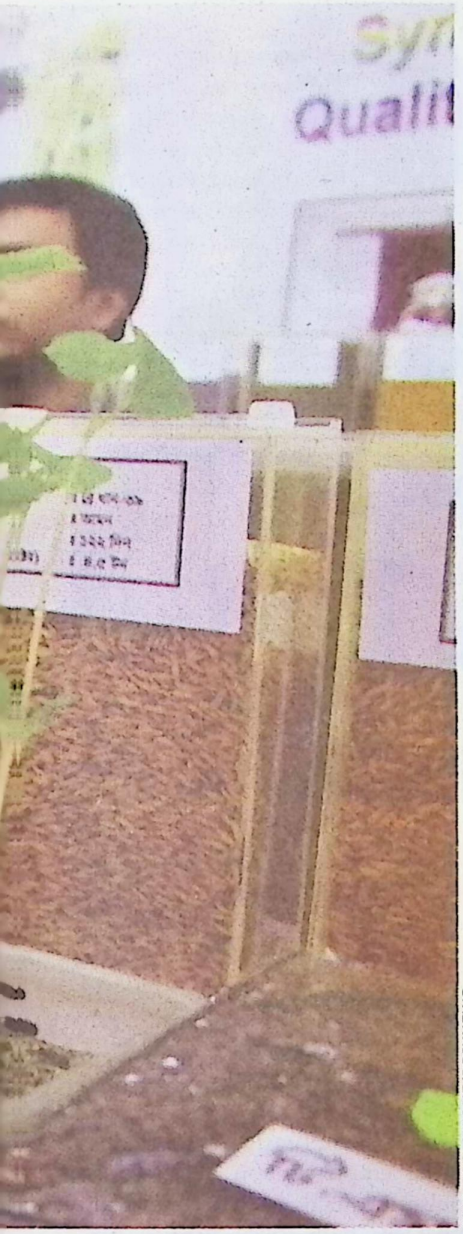


AMDADUL HAQUE/DRIKNEWS

AGRICULTURE plays a major role in the economic sustenance of Bangladesh, contributing to nearly 19% of its GDP, compared to less than 5% for the world. The agricultural sector also employs more than half of the labour force of Bangladesh and the performance of this sector has considerable influence on overall economic growth and the level and status of poverty and malnutrition.

Estimates show that GDP growth originating in agriculture is, on average, at least twice as effective in benefiting the poorest half of the country's population compared to growth generated in non-agricultural sectors, making agricultural growth especially effective in reducing poverty.

Over the last three decades food grain production in Bangladesh has been more than doubled. In spite of increased average (national level) uptake of calorie level, large-scale malnutrition still persists. This situation has been aggravated by the recent global crisis and the striking rise in food prices. The poorest section of the Bangladeshi populace, who used to spend 49% of their income on rice in 2006, spent 62% on rice in 2008.

Despite the claim of self-sufficiency in food, occasional imports create confusions. Import of food increased from $413 to $1,918 million between 1987 and 2007. In July 2008, Bangladesh announced a plan to import 1.2 million tons of rice grains from the international market in one year.

Self-sufficiency in other food-items is yet to be achieved. The per capita consumption of meat, milk, and eggs, particularly by the rural consumers, falls far short of the requirement. Substantial improvements in the Bangladesh diet will require greater diversification of agricultural production.

In addition, urbanisation is leading to major changes in dietary patterns. This certainly necessitates a more subtle analysis of the future national demand for food and a more intuitive plan for meeting these demands.

The fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) states unequivocally that global warming is occurring and continued greenhouse gas emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would very likely be larger than those observed during the 20th century.

Bangladesh is increasingly becoming more vulnerable to natural disasters due to extreme climate events and its high population density. Flash floods, increasingly higher temperatures, more variable precipitation, and extreme weather events such as droughts, and storms, sea level rise are already being felt in Bangladesh and will certainly continue to intensify in future. Climate unpredictability will make planning of farm operations more difficult. Crop yields are predicted to fall by up to 30 percent, creating a very high risk of hunger.

For most Bangladeshis, diet diversity is the major problem. Rice occupies much of the total area hindering expansion of other crops. Rice yields must be improved to facilitate expansion of non-rice crop areas while maintaining adequate rice production. Rice is subjected to salinity constraints in the coastal areas, affected by water submergence in tidal and wetland areas and drought, particularly in the northwest region of the country. Insects and diseases are also reducing rice yields significantly. Fewer acres and deteriorating soil conditions have put pressure on farmers to produce more rice under increasingly difficult conditions and with fewer resources.

Bio-technology can help in overcoming these problems. Results from the experiments that do exist are promising. For example, in a collaborative effort between India and Bangladesh, a system has been designed such that relevant gene(s) in bio-engineered plants are specifically "turned on" when the plant is under drought or salt stress. A single technology is applicable to address two individual constraints: drought and salinity. Major rice pests in Bangladesh include the stem borer and brown plant hopper and the major pathogens are the tungra viruses, bacterial leaf blight, and blast. Transformation of rice