

PROF. DR. EHSAN RASHID MEMORIAL LECTURES

MEETING FOOD SECURITY - GM OR ORGANIC WAY?

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Agricultural sector is still the largest sector of the Pakistan economy contributing almost one-fifth to the GDP and providing employment to a little less than half the total employed labor force. Trends in agriculture growth reflect that agriculture grew at an average rate of 4.4 per cent per annum during the 1990s. During the 2000 decade the rate of growth of the agricultural sector has been quite erratic, ranging between -2.7 per cent to 6.5 per cent. The pathetic performance is also on account of the fact that no investments were made in the agricultural sector that would increase the crop yield. Water which is a crucial input is quite deficient and no investments have been made in water development projects, farm to market roads, power development projects, storage and warehousing facilities, etc.

The performance of the agriculture sector was stronger than expected during 2004-05 and 2005-06; but from 2006-07 onwards agricultural growth started declining. The decline continued till 2012-13, in spite of substantial increase in support prices of agricultural products in 2008, by the previous government. Violent fluctuations in the production of five major crops occurred during the period 2003-4 to 2012-13. A high rate of growth in one year was followed by a negative growth rate in the following year. These fluctuating growth rates of major crops reflects the following: One, that Pakistan's agriculture is totally at the mercy of the weather. Second, that the high support prices of agricultural crops announced in 2008 did nothing to boost agricultural growth. Third, poor management of the Pakistan economy.

As a result of declines in major food crops like wheat, lentils and vegetables, Pakistan is becoming food insecure. The country has been importing these products from abroad. A recent IOBM survey of major food retailers in Karachi indicated that we are importing wheat from Russia, lentils from Australia, Canada and India and vegetables from India. Major Genetically Modified (GM) producing countries are highlighted in green in Figure 1. The worrying thing is that with the exception of Russia which exports wheat to Pakistan, all countries exporting lentils and vegetables to Pakistan like Australia, Canada and India are GM producing areas.

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Despite persistent concerns over GM crops, GM farming is taking off around the world. In 2012, GM crops were grown on about 420 million acres of land in 28 countries worldwide, a record high according to the International Service for the Acquisition of Agri-biotech Applications. In 2012 Growth of GM farming area in the LDCs surpassed that in industrial nations for the first time. According to a UN Food and Agriculture Organization forum if this upward trend continues "a considerable quantity and variety" of GM products may be commercialized in developing countries within the next five years.

Even though GMOs have greater longevity and can therefore increase the shelf life of agricultural products, this is at a very high cost in terms of health, since diseases like cancer are spreading like an epidemic. French scientists led by Gilles-Eric Seralini at the University of Caen in Normandy conducted a study published in Food and Chemical Toxicology which stated that 50-80 per cent of female rodents fed with NK603 corn or exposed to the weed killer used in its cultivation for 24 months developed tumors. Male rodents developed liver damage, kidney problems, indigestion and skin tumors. In the Less Developed Countries consumers are mostly caught unaware of the hazards of GM foods. For example, in Pakistan the absence of a Labeling Law means that when purchasing food products sellers of these products do not have to share this vital information with consumers that the DNA of the food products they are purchasing has been altered. In countries where governments are responsible, strict laws governing the sale of these products to their consumers have been enacted. Canada is producing GMOs for sale to LDCs, but the same products are not allowed to be sold in Canada. The decision to allow these products to be sold in Canada will be taken only after the impact of GMOs have been studied and quantified in the LDCs.

Further to their impact on health, Genetically Modified Organisms (GMOs) also reduce the nutrient content in foods. They increase allergic reactions, resulting in the production of harmful proteins and also cause Horizontal Gene Transfer between modified organisms and human bacteria. The Food and Agriculture Organization (FAO) has pointed out some problems related to farming and consumption of GMOs for small farmers and consumers. These are on account of pest resistance, contamination of non-GMO crops, and potential toxicity of GM foods and products.

In addition to being a health hazard, GMOs have a serious impact on economy. They increase the dependence of LDCs on corporations and result in corporate monopolies on crops. This is because seeds from GM crops can not be used for sowing and fresh seeds have to be imported for each sowing. Moreover, on account of increased fertilizer and herbicide use, they increase the cost of production of crops, raising food prices, making these countries even more food insecure.

This has also been acknowledged by the FAO which states that GM technologies are mostly proprietary, developed by the private sector and released for commercial production through licensing agreements. Adoption of GM technologies has raised social and ethical concerns about restricting access to genetic resources

and new technologies, loss of traditions e.g., saving seeds, private-sector monopoly and loss of income of small and poor farmers. Moreover, bitter legal battles between GMO producers and farmers are also common in countries like the United States, where farmers whose crops get polluted due to cross pollination with GMOs have been made to pay huge fines to farmers using GMOs.

Scotland and Germany have recently banned GMOs. However, developing a monitoring program is a great challenge in a country like Pakistan, where people are not aware of the hazards of GM foods; everybody is out there to make a quick buck and corruption is rampant. Moreover, environmental protection measures are not enforced effectively and, research and development funds that would strengthen local expertise are not available. Research is desired only if it a free good.

It is quite ironic that a country which is basically an agricultural country producing more than one-fifth of its output from agriculture with a little less than half of its population in agriculture should be food insecure. Whether food insecurity has been created as a result of economic mismanagement or deliberately to create a market for GM foods in Pakistan is quite criminal! But we must remember that people's power is stronger than the government power. The government can continue to flood the market with contaminated seeds and commodities, but if people do not buy these products there is no way they can be forced. If consumers decide not to purchase the polluted products imported from abroad or grown by sowing GM seeds how will they meet their consumption needs? One way would be through developing an alternative market for organic foods. This would be a cheaper and healthier alternative to the problem of food insecurity which does not entail import of seeds, fertilizers and insecticides. Since it does not require these high tech inputs, organic farming does not require large amount of water. It also, does not use up the country's foreign exchange earnings. Organic farming would therefore be a cheaper and more healthy alternative.

Importers of food products can try to tap organic growers and import their products for consumption in Pakistan; but this will cater to the needs of the more affluent class who can afford to buy imported products. What about the common men and women, how will they meet their needs? Kitchen gardens can provide a solution. People can grow vegetables and fruits in the spare space in their homes, in pots and tubs and exchange these with their neighbors and friends. People are already growing vegetables in their kitchen gardens we only need to expand the scale of these operations.

Moreover, the government should give small holdings of hitherto uncultivated land to landless peasants in areas where water is not a serious problem. Small loans from commercial banks can take care of seed, natural manures and natural insecticides. Produce of such organic farms should be for the home market in Pakistan and not for export. Since these would be produced from small land holdings, farmers will mostly be producing these for their own consumption. Large farmers and investors should buy land that has hitherto not been cultivated and use it for organic farming.