



Food security in Punjab: the case of Pakistan

Asma Bahadur

Department of Business Administration, Government College University, Faisalabad, Pakistan.

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ABSTRACT

Prime Minister Aziz has approved the export of an additional 500,000 tons of wheat this year in the hope of making inroads into the lucrative Indian market. The export will be undertaken by the private sector by sea and by railways. A bumper harvest of 23 million tons is expected this 2006-07 crop year. Last year, the country also had a bumper crop of 21.7 million tons of wheat. The surplus harvest of wheat, however, does not guarantee food security in the country. The traders mafia (that includes ministers, influential parliamentarians and the private traders plus few industrialists) in our country is very strong and the common consumer suffers the net impact of such malpractices. Government takes decisions in the name of consumers but in actual effect, these are the traders who benefit from exports/ imports and not the consumers. The profiteering tendency of the global food producers and distributors even at the cost of people's survival is bound to create social and political upheavals. This is a harsh reality which the business people and policy makers have chosen to ignore so far. Food insecurity amidst plenty is the name of the game in food politics. Despite the fact that global economy is a food surplus economy, 852 million people (17 % of the world population) go hungry every day in the world because they do not have access to food. The chronic hunger kills more people every day than disasters, disease or war. But, all this is when there is enough food to feed the entire population of the world twice. Women in rural areas go hungry the most despite doing the bulk of the work to grow food and feed their families. Women produce up to 80 per cent of the food in developing countries, but they own only one per cent of the land. The continuation of hunger is directly related to a lack of access or entitlement to food, and to the natural resources essential to the provision of food. Food sovereignty is the right of people to define their own food and agriculture, and to protect and regulate domestic agricultural production and trade.

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Introduction

Food security

Food security as a concept originated only in the mid-1970s, in the discussions of international food problems at a time of global food crisis. The initial focus of attention was primarily on food supply problems of assuring the availability and to some degree the price stability of basic foodstuffs at the international and national level. That supply-side, international and institutional set of concerns reflected the changing organization of the global food economy that had precipitated the crisis. A process of international negotiation followed, leading to the World Food Conference of 1974, and a new set of institutional arrangements covering information, resources for promoting food security and forums for dialogue on policy issues.

The issues of famine, hunger and food crisis were also being extensively examined, following the events of the mid 1970s. The outcome was a redefinition of food security, which recognized that the behavior of potentially vulnerable and affected people was a critical aspect.

A third, perhaps crucially important, factor in modifying views of food security was the evidence that the technical successes of the Green Revolution did not automatically and rapidly lead to dramatic reductions in poverty and levels of malnutrition.

Some official definitions of food security are as follows:

The initial focus, reflecting the global concerns of 1974, was on the volume and stability of food supplies. Food security

was defined in the 1974 World Food Summit as:

“Availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices”. In 1986, the World Bank report, *Poverty and Hunger*, focused on the temporal dynamics of food insecurity. It introduced the widely accepted distinction between chronic food insecurity, associated with problems of continuing or structural poverty and low incomes, and transitory food insecurity, which involved periods of intensified pressure caused by natural disasters, economic collapse or conflict. This concept of food security is further elaborated in terms of:

“Access of all people at all times to enough food for an active, healthy life”.

By the mid-1990s food security was recognized as a significant concern, spanning a spectrum from the individual to the global level. However, access now involved sufficient food, indicating continuing concern with protein-energy malnutrition. But the definition was broadened to incorporate food safety and also nutritional balance, reflecting concerns about food composition and minor nutrient requirements for an active and healthy life. Food preferences, socially or culturally determined, now became a consideration.

The 1996 World Food Summit adopted a still more complex definition:

“Food security, at the individual, household, national, regional and global levels [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life”.

This definition is again refined in *The State of Food Insecurity in the World 2001*:

“Food security is a situation that exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life”.

Essentially, food security can be described as a phenomenon relating to individuals. It is the nutritional status of the individual household member that is the ultimate focus.

So, Food security exists when all people, at all times, have physical, social and economic access to, safe and nutritious food which meets their dietary needs and food preferences for an active and healthy life. Household food security is the application of this concept to the family level, with individuals within households as the focus of concern, and Food insecurity exists when people do not have adequate physical, social or economic access to food as defined above.

Components of food security

Food security can be broadly divided into three main components namely; food availability (physical access to food), economic access to food, and equity of food distribution. According to some experts, however, the third component of food security is effective food utilization or absorption.

-Food availability:

Food availability is achieved when sufficient quantities of food are consistently available to all individuals. Sources of such a food supply could be household's own production, other domestic output, commercial imports or food assistance.

-Access to food:

Access to food is ensured when a household and all members of the household have enough (economic) resources to acquire food meeting the nutritional requirements and dietary needs of the household. Access is thus primarily a function of a household's income, its distribution within the household and the price of food, besides the physical aspect. Economic accessibility implies that personal or household financial costs associated with the acquisition of food, to meet dietary needs adequately, should be at such a level that the attainment and satisfaction of other basic needs are not threatened or compromised.

-Food utilization or absorption:

Food availability and economic access to food alone cannot ensure food security as proper food absorption is equally important. It has public health dimension and requires a diet providing sufficient energy and essential nutrients, along with access to potable water and adequate sanitation. Food absorption also depends on the knowledge within the household of food storage and processing techniques, basic principles of nutrition, proper child care and illness management.

-Equity of food distribution:

While there are sufficient resources in the world to provide food security for all, policy and behavioral changes are necessary to guarantee a fair share for all people, especially the poor. Equity is a major issue of concern related to food security, particularly in the context of Pakistan wherein inequity in land holdings and incomes is relatively high. There is a wide variation in income, human development as well as overall development across regions and provinces. Ethnic divide within

some provinces makes the interprovincial inequities more sensitive than they would have been in a homogenous set-up.

Agriculture and Food Security

Land and water are important natural resources for mankind. The demand for food, fiber, and shelter is increasing with the continuous increase in the world's population. The rapid urbanization, continuous tillage, and greater use of fossil fuels, fertilizers and pesticides are polluting the natural resources and environment.

Food production is mainly depending upon land and water resources. More than 90 percent of rice and 43 per cent of wheat in the world is produced and consumed in Asia. The rice-wheat system, one of the major cropping systems of the South Asia and parts of East Asia, requires special management. Due to management differences and traditional cultural cultivation practices, the productivity of the rice-wheat system is stagnating and its sustainability threatened.

The introduction of new varieties and chemical fertilizers, during the green revolution of the 1960s, resulted in increase in crop yields. But, intensive cultivation, increased use of fertilizers, pesticides, conventional soil management practices, and improper use of irrigation water resulted in deterioration of land and water resources leading to poor crop yields. Large fertile areas fell prey to water logging and salinity, making small farmers more food insecure.

Agriculture in Pakistan

Agriculture is considered the mainstay of Pakistan's economy. According to the *Economic Survey of Pakistan 2001-2002*, nearly one-fourth of total output of the GDP and 44 per cent of total employment is generated in agriculture. More than 67 per cent of the country's rural population is directly or indirectly linked with agriculture for their livelihood. Whatever happens to agriculture is bound to affect the livelihood and consequently food security of the poor rural people. Agriculture's share in the GDP has declined from 38 per cent in 1969-70 to 28 per cent in 2001-02. Decline of agriculture and shrinking livelihood opportunities have resulted in rising poverty in rural areas.

Agriculture is an important sector, providing food to the fast growing population of the country. With a population growth rate of 2.23 per cent, there will be a net addition of 3.0 million people each year. According to *United Nations Statement on Food Security in Pakistan, 2000*, in more than 50 years (1948-2000), the population has increased fourfold but during this period the production of wheat, the major food crop, has increased only 2.9 fold. *Pakistan Agricultural Research Council*, however, claims that wheat production in the country has increased by 647 per cent (more than 6.4 fold) during 1948 to 2006 whereas increase in the area was 210 per cent during this period. The country's consumption requirement, however, is approximately 21.3 million tons per year.

In Pakistan, agriculture production is dominated by crop production, which accounts for almost 61 per cent of agriculture's GDP (at constant prices). Livestock accounts for almost 35 percent. In 2000, Fisheries and forestry make up about four per cent of the GDP. There are four major crops; wheat, rice, cotton and sugarcane. Among the minor crops the most important are; fruits and vegetables, followed by pulses and oilseeds. The main successes since the 1960s have been in the production of wheat, rice, cotton and poultry products. Although self-sufficiency has not yet been achieved in grain production, rice and cotton have contributed substantially to increased export earnings. During the period of 1990-91 to 1999-2000, the

major crops sub-sector witnessed a growth rate of only 2.87 per cent. The other sub-sectors such as minor crops and livestock did well in the 1990s but fisheries slowed down. Income from forestry is declining due to ban on harvesting enforced since 1997-98 for forestry protection.

Wheat production fluctuated between 14.56 million tons in 1990-91 to 21.5 in 2005-06. The relative success story of wheat, rice and cotton has not been repeated in sugarcane though its production has increased mainly through increased area which went up from 190,000 hectares in 1948 to a record 1.16 million hectares in 1998-99, declining to one million hectares in 1999-2000. Sugarcane yields have remained more or less static. For oil seeds, the country turned from self-sufficiency into a major importer of edible oils.

In 2000, the imports represented 65 per cent of domestic consumption. Area under maize has doubled since 1948 but its yield has not shown any significant improvement due to lack of high yielding varieties and most of the crop in NWFP continues to be grown under rain-fed conditions.

Wheat being the staple diet is the most important crop and cultivated on the largest acreages (8.459 million hectares during the growing season 2006-07) in almost every part of the country. It contributes 13.7 per cent to the value added in agriculture and 3.0 percent to GDP. There are progressive farmers of irrigated area who are harvesting 6 to 7 tons yield per hectare. However, farmers yield ranges 0.5 to 1.3 tons per hectare depending on the amount of rainfall. The yield in irrigated area ranges from 2.5 to 2.8 tons per hectare depending upon the amount of water available and other factors.

There is around 60 per cent yield gap in wheat, which needs to be narrowed. Wheat production in the country, however, has been well below potential and variable. The major reasons for low productivity and instability includes: delayed harvesting of kharif crops like cotton, sugarcane and rice, and consequent late planting of wheat, non-availability of improved inputs like seeds, inefficient fertilizer use, weed infestation, shortage of irrigation water, drought in rain-fed area and terminal heat stress, soil degradation, and inefficient extension services. Moreover, farmers are not aware of modern technologies because of weak extension services system.

The amount and quality of food available globally, nationally and locally can be affected temporarily or long-term by many factors including climate, disasters, war, civil unrest, population size and growth, agricultural practices, environment, social status and trade.

Affordable age, status, gender, income, geographic location and ethnicity all affect a person's ability to access and afford sufficient food. When there is a shortage of food the rich are unlikely to go hungry but their demand for food increases the price and makes it harder for poor people to obtain food.

Why food insecurity?

There are a number of factors which cause food insecurity.

Poverty

Poor people lack access to sufficient resources to produce or buy quality food. Poor farmers may have very small farms, use less effective farming techniques, and be unable to afford fertilizers and labor-saving equipment, as of which limit food production. Often they cannot grow enough food for themselves and are even less able to generate income by selling excess to others. They may be forced onto less productive land which is prone to further environmental deterioration. Addressing poverty is important to ensure all people can afford sufficient food.

Health

Without sufficient calories and nutrients, the body slows down making it difficult to undertake the work needed to produce food. Without good health, the body is less able to make use of the food that is available. A hungry mother gives birth to an underweight baby, who then faces a future of stunted growth, frequent illness, learning disabilities, and reduced resistance to disease. Contaminated water and food can cause illness, nutrient loss and often death in children.

Water and environment

Food production requires massive amounts of water. It takes one cubic metre (1000 litres) of water to produce one kilogram of wheat and 5,000 liters of water for one kilogram of rice. Producing sufficient food is directly related to having sufficient water. Increasing irrigation efficiency and limiting environment damage through salinization or reduced soil fertility is important for ongoing food availability.

Gender equity

Women play a vital role in providing food and nutrition for their families through their roles as food producers, processors, traders and income earners. Yet their lower social and economic status limits their access to education, training, land ownership, decision making and credit and consequently their ability to improve their access to and use of food. Food utilization can be enhanced by improving women's knowledge of nutrition and food safety and the prevention of illnesses.

Disasters and conflicts

Droughts, floods, cyclones and pests can quickly wipe out large quantities of food as it grows or is stored for later use or planting. Conflicts can also reduce or destroy food in production or storage. Farmers flee their fields for safety or become involved in the fighting. Previously productive land may be contaminated with explosive debris and need to be cleared before it can be used for food production again. Stored food, seeds and breeding livestock may be eaten or destroyed by soldiers or opposing groups leading to long-term food shortages.

"The Pakistan government has sought United Nations intervention to help avert nutrition crisis among 84,000 displaced persons in Balochistan. They had to leave the comforts of their homes and association of the neighborhood to save their lives.

The government, in the past, had been rejecting the presence of internally displaced persons (IDPs) in the province and had prevented aid groups from helping them. A senior UN official revealed that among 84,000 IDPs facing nutrition, more than 70 per cent were women and children (26,000 women and 33,000 children). The survival of several thousand children was said to be in great danger. The horrifying fact is that a large number of children have already died of acute malnutrition. The Unicef assessment has revealed that 80 per cent of deaths among the IDPs were of children under the age of five. The assessment, however, did not disclose the number of displaced persons died of nutrition so far, and how many of them were women and elderly people".

Population and urbanization

Population growth increases the demand for food. With most productive land already in use there is pressure for this land to become increasingly productive. Expanding cities spread out across productive land, reducing the agricultural production including food production.

Trade

Many poor countries can produce staples more cheaply than rich nations but barriers to trade, such as distance from markets,

quarantine regulations and tariffs make it difficult for them to compete in export markets against highly subsidized farmers in rich countries.

Objectives of the Research Project

- To examine the food availability in Punjab Pakistan.
- To examine the increasing or decreasing trend of food requirement w.r.t population of Punjab Pakistan.
- To analyze the ratio of the wheat requirement as per person in a year.
- To analyze the per acre wheat production in Punjab Pakistan.
- To examine the factors affecting the food security.
- This topic is quite important because by the way of research, it is might be possible that we find better production and consumption strategies of wheat.

Methodology

Keeping in view the importance of the topic one should preferably collect the required data by conducting interviews with economists and other officials relating to the ministry of agriculture, but in present situation and because of shortage of time given for the completion of the thesis or research project, it is difficult to conduct such research works.

Thus my investigation will be based upon secondary data or published articles in Government reports and analysis conducted on this topic by various Medias such as newspapers and different satellite channels.

Special consideration will be given to the reports, articles and journals published by Government of Pakistan as well as the semi Government agencies.

It is important to note that the impact of food security with respect to population is looked at in a long term framework. However I will be use the following ways to collect the data.

1. Secondary source of data
2. Preliminary material
3. Published surveys and reports
4. Personal visits at food offices

Secondary Data

The data published or used by an organization other than the one which originally collected it is known as secondary data. Or Secondary data is the data that have been already collected by and readily available from other sources. Such data are cheaper and more quickly obtainable than the primary data and also may be available when primary data can not be obtained at all.

Robert W Joselyn has classified the above discussion into eight steps. These eight steps are sub classified into three categories. He has given a detailed procedure for evaluating secondary data.

1. Applicability of research objective.
2. Cost of acquisition.
3. Accuracy of data.

In the methodology portion following areas will be consumed.

1. The research project is based on the wheat production with respect to the population of Punjab Pakistan.
2. We basically take consideration on past 2 decade record of wheat production and consumption as per person during each year.
3. Now here we use the secondary data which is published in articles by Government as well as semi Government.

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Table

Area, Production and Yield of Wheat In Pakistan

Year	Area (m. ha)	Production (m. tones)	Yield (kg/ha)
1999-00	8.463	21.079	2491
2000-01	8.261	19.018	2302
2001-02	8.058	18.226	2262
2002-03	8.034	19.183	2388
2003-04	8.216	19.500	2375
2004-05	8.358	21.612	2586
2005-06	8.303	21.700	2614
2006-07	8.459	23.031	2723 (estimates)

Average 8.219 19.879 2420

Source: Ministry of Food, Agriculture & Livestock, Federal Bureau of Statistics

Table of wheat production in Punjab Pakistan Wheat in punjab

Year	Area '000' hectares	Production '000' tonnes	Yield per hectare in kgs
1987-1988	5343.8	9203.8	
1988-1989	5589.4	10517.0	1882
1989-1990	5667.5	10518.2	1856
1990-1991	5711.7	10519.8	1841
1991-1992	5669.2	11492.3	2027
1992-1993	5960.5	11742.0	1970
1993-1994	5770.7	11218.0	1944
1994-1995	5902.3	12719.0	2154
1995-1996	5973.5	1243.0	2081
1996-1997	5973.5	12371.0	2118
1997-1998	5839.9	13807.0	2327
1998-1999	5934.6	13212.0	2226
1999-2000	6180.3	16480.0	2667
2000-2001	6255.5	15419.0	2465
2001-2002	6101.8	14594.4	2392
2002-2003	6097.3	15355.0	2518
2003-2004	6255.5	15639.0	2500
2004-2005	6378.9	17375.0	2724

List of population of Punjab Pakistan from 1990- 2010

Year	Population of Punjab
1990	341,507,102
1991	327,991,436
1992	314,475,770
1993	300,960,104
1994	287,444,438
1995	273,928,772
1996	260,413,106
1997	246,897,440
1998	233,381,774
1999	219,866,108
2000	206,350,586
2001	192,834,776
2002	179,319,110
2003	165,803,444
2004	152,287,778
2005	138,772,112
2006	125,256,446
2007	111,740,780
2008	98,225,114
2009	84,709,448
2010	71,193,782