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Food and nutrition situation in Pakistan

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World Food Day is a reminder to the international community at large that to have an adequate food intake is one of the fundamental human requirements. But, there is no denying the fact that millions of people, especially in the developing countries, are beset with danger to their very survival due to its non-availability. The gravity of the situation can be gauged from the facts that some 800 million people of the world are just breathing, not living, in a state of abject poverty. Some 400 million inhabitants do not have sufficient food intake, nearly 200 million children below the age of five in developing States suffer from some degree of malnutrition. As many as 26.000 infants die every day due to malnutrition in Asia. More than 2,50,000 childrens are blinded every year. According to World Health Organisation, 80 percent of all the diseases are water-related and 10,000 people die in the world every day because of non-availability of clean water.

Keeping these staggering figures in view, it is incumbent upon all the nations of the world to pool all their resources to wage a war against poverty, hunger and malnutrition.

Food Consumption

An adequate food supply is the first pre-requisite in any country, for social tranquillity and economic stability. The food intake as reported by Micro Nutrient Survey of Pakistan is given in Table 1.

Cereals constitute the main staple of Pakistani diet and contribute 61 percent to the total calorie consumption. As much as 65 percent of total protein intake comes from cereals. Wheat is by far the most common foodgrain consumed, constituting 83 percent of total cereal intake. It alone provides over 50 percent of the total calories and 60 percent of the total protein consumed by the population as a whole. The corresponding figures for rural areas are 53 percent and 59 percent and in case of the urban areas, the percentages are 47 and 59. Cereals contribute about 61 percent of total caloric consumption and about 65 percent of the total protein intake comes from cereal. The survey indicated

Table 1. Intake of food by food groups

Food Group	Rural	Urban	All Pakistan
Total cereals	626 0	433.8	532.0
Wheat	503.8	376.6	448.2
Rice	95.4	47.8	74.6
Other cereals	26.7	9.5	19.2
Pulses	27.0	20.1	24.0
Fat and oils	33.1	82.1	54.9
Eggs	3.4	7.7	5.3
Fish	5.9	6.9	6.3
Meat	15.8	36.5	24.8
Roots	26.3	27.1	26.6
Leafy vegetables	40.1	24.2	33.1
Other vegetables	14.5	19.0	16.4
Fruit	16.3	1.9	10.0
Milk products	458.6	240.7	363.4
Sugar, including *gur*	73.1	53.5	64.6

Source: Micro-Nutrient Survey of Pakistan (1978)

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that cereals contribute 14 percent more to total caloric consumption among rural dwellers than urban inhabitants. In case of protein, the share of cereals in total intake is 5 percent greater in the countryside than in the towns and cities. Cereals contribute 59 percent of all iron consumed by the population.

Pulses contribute 6.1 percent in rural areas and 4.5 percent in urban areas to total protein intake. The intake of fats and oils appears to have increased by more than two and a half times since 1965-66, and are used more in urban than in rural areas. The consumption of animal protein as reported in this survey is 20.8 g/head/day and seems to have more than doubled in the past decade. Both the calories and proteins were found to be consumed in excess of the Recommended Dietary Allowance (RDA). But, still more than half the people may be getting less than RDA. The protein intakes in rural areas are 34 percent higher than those of urban areas. Iron intake is adequate for most of the population whereas the consumptions of Vitamin A is lower than the RDA.

According to food balance sheet (1979-80), the per capita availability of calories is lower than RDA. There is overall excess of protein availability in the country. However, the bulk of protein is provided by vegetable sources. The availability of calories and sources of protein in food supplies of some selected countries are given in Table 2. The situation regarding the availability of calories and proteins in Pakistan is far better than most of these countries.

Table 2. Availability of calories and protein in selected countries (1978–80)

(per capita/day)

Country	Calories (Kcal)	Proteins		
		Total (g)	Vegetable (g)	Animal (g)
Pakistan	2300	60.2	46.1	14.1
India	1998	48.5	43.9	4.6
Afghanistan	1833	56.9	48.6	8.3
Iran	2912	76.4	60.3	16.1
China	2472	65.4	53.5	11.9
Nepal	1914	45.6	39.0	6.6
Indonesia	2295	47.2	41.9	5.3
Malaysia	2650	59.1	35.4	23.7
Nigeria	2335	53.2	43.9	9.3
USA	3652	106.7	34.7	72.0

Source: FAO Production Year Book, 1981

NUTRITIVE VALUE OF PAKISTANI DIET

In a well-balanced diet, 10-15 percent of the total energy is usually dervied from protein, 55-70 percent from carbo hydrates and 20-30 percent from fat. The percentages of calories provided by the average national diet from protein, carbohydrates and fats are 13, 61 and 11 respectively. It is evident that national diet is low in fat but is adequate to meet the dietary protein requirements. According to FAO, the protein allowances for different age groups in terms of net dietary protein calorie percent (NDp cal%) are 8.0, 7.8, 5.7, 8.4, 4.6, and 9.5 for infants, toddler, child, adolescent, adult and lactating mother respectively. The NDpcal% value of national diet is 8.5 and is adequate for all different age groups except lactating mothers.

It appears that protien is not a limiting factor in our national diet. There is strong evidence that the Pakistan food problem, from the standpoint of a balanced diet is not one of protein deficiency but caloric inadequacy, If sufficient calories are provided through conventional cereals or edible fats, there would be no protein problem. Indeed it has been demonstrated that much of the clinically observed protein malnutrition is the secondary consequence of a caloric inadequacy with people whose diet contain sufficient protein but which they are unable to assimilate when caloric intake is inadequate.

MALNUTRITION

Malnutrition, particularly protein caloric malnutrition (PCM) among the pre-school children (0-5 years) has been found widespread in Pakistan. Vital statistics have been accepted as an index of malnutrition in a community. The mortality

rate among children under five years of age is 22.4 percent and is 40 times higher than Japan and 80 times higher than Sweden.

The growth status of Pakistani children under five is not satisfactory. Only 40 percent of the children have satisfactory development and 60 percent are deficient in growth due to imbalanced food, poverty, ignorance and infections. In Pakistan, about 80 percent of children under five regularly suffer from diarrhoea and respiratory infection. Diarrhoea alone kills 30 percent of malnourished babies. Parasitic load ia also very heavy in children. The Pakistani children still grow at a rate well below those in Western countries. The weight of an average Pakistani two years old baby is only 75 percent of an American child of the same age. However, it has been shown in a study that Pakistani children, if fed properly, have the potentialities of growth comparable with American children.

The per capita recommended daily allowances of iron for Pakistan is estimated to be 30 mg. Average intake of iron per person as reported in survey is almost equal the recommended allowance. The prevalence of anaemia as indicated by haemoglobin levels indicates that 59.3 percent of population is having adequate haemoglobin level. In spite of adequate intake of iron, prevalence of anaemia in the nation in general and children, pregnant and lactating women in particular has been reported.

The low intake of dietary iron, aggravated by parasitic infestation, phytates and drinking of tea with meal based on cereals are responsible for high incidence of anaemia in Gilgit, Hunza, Skardu and other parts of Northern areas. It appears that anaemia, which hampers the work output of the individual, is a serious nutritional problem facing the country.

Vitamin A deficiency is an important cause of corneal destruction and childhood blindness in many parts of the developing world. In Pakistan for the population as a whole the prevalence of sub-normal Vitamin A levels in the blood is 13 percent. The worst affected groups were pre-school children, pregnant and lactating women. A recent study to assess the plasma Vitamin A status indicated that children under 15 years of the age were at risk. The diets consumed in areas with xerophthalmia show multiple deficiencies not only of Vitamin A but also often of calories and proteins and fat.

About 3 percent of the population suffer from some grade of goitre. The Micro-nutrient Survey did not inlcude the mountainous region of the country where the incidence of goitre was very high (57 percent) affecting growing children and adults. This nutritional deficiency causes not only the enlargement of thyroid gland but also results in growth retardation, mental stagnation and cretinism.

In spite of the fact that adequate food is available, malnutrition is still prevalent in the country. It adversely affects mental as well as physical development, productivity, the span of working years— all of which significantly influence the economic potential of man. Malnutrition during the foetal period and in infancy is associated with intellectual impairment. Severely malnourished children have brain smaller than average size and have been found to have 15-20 percent fewer brain cells than well-nourished children. Malnourished children miss their school frequently and usually repeat their first school year. In Pakistan, 60 percent of first graders dropped out before the end of the first year.

Man is subject to the laws of thermodynamics: he must absorb energy to produce energy. Men living on 1800 calories a day as found in Northern areas, have been shown to lose 30 percent of their muscle strength and 15 percent for their precision of movement, speed coordination. Many behavioural characteristics have also have been altered. However, improvements in clearly inadequate diet have often been found to bring increase in work output and work attendance.

It is evident from the available information that there are four deficiency diseases of public health importance widely prevalent: namely protein calorie malnutrition (PCM), nutritional anaemia, Vitamin A deficiency and goitre in some localized areas.

SUGGESTED STRATEGY OF FOOD PRODUCTION

Increased production of crops can come from a combinations of three approaches. These are: (i) bring more land into

production, (ii) enhance yields per unit land area and (iii) increase the number of crops produced per year.

The livestock production depends on the factors such as improved nutrition, genetic gain, better environment and disease control. The productivity of the individual farmer must be increased. This can be achieved by the development of new techniques by teaching farmers how to use them and providing incentives to them to put these to use.

In order to overcome the nutritional problems in the country, efforts in food production should be concentrated on the priorities given below.

CEREALS

Although Pakistan has become self-sufficient in wheat production, however, to meet the needs of its rapidly growing population it would have to produce more wheat and other cereals in the coming years. There is a need to develop rust-resistant varieties with more proteins and more of the essential amino acid: lysine. In order to reduce pressure on the consumption of wheat, diversification of our dietary habits must be introduced.

PULSES

The low intake of pulses leads to lowering of the protein quality of our cereal and legume diet. There is need to evolve high-yielding disease-resistant varieties of pulses. The major pulse grown in Pakistan is chickpea which being a *Rabi* crop competes with wheat in acreage. At the same time, production of chickpea has declined in the past few years. The area under *Kharif* crop should be increased to boost the production of *mash* and *mung*.

Soybean represents the important source of oil seed protein for both animal and man consumption. Research is needed to solve problem involving flavour, colour, anti-nutritional factors processing technology. The increase in pulses output will not only increase the protein quality of our diet but also reduce the requirement of wheat. The optimum nutritional combination is provided by a diet composed of roughly 65 percent cereal and 35 percent legume. The ratio of cereal to legume production should aim at 2:1.

EDIBLE OIL

As fat is the limiting factor in our diet there is great need to increase the production of this important food. The home production of edible oils is only 30 percent of the national requirements and the rest is imported at a cost of 300 million dollars every year. Efforts have to be made to raise the output from the traditional sources.

Rice bran, a by-product of rice milling, has 10-20 percent oil which can be used for industrial purposes. In this way, edible oil can be released for human consumption.

There is a need to explore the possibility of growing olive plants in *barani* areas. Another plant, *Joioba*, the seeds of which contain 53 percent edible oil, may be tried in the country. One thousand bushes can be grown in one acre and yield around 3000 lbs of seeds. The plant is suitable only for poor soil having low rainfall.

ANIMAL FOODS

Milk which has been the main source of animal protein has shown a consistant and continuous decline from 266 g per capita per day in 1971/72 to 247 g per capita per day in 1976/77. This is due to the fact that its rate of increase in production has been less than the rate of increase of population. Besides the poor yield of milk, an important cause of milk shortage in the country is poor collection, processing and distribution. Although milk has a higher rate of protein conversion than other animal foods, it is still an expensive form of protein, and is not a suitable food for every low income group.

To encourage milk production, a farmer must be guaranteed a market for milk he wishes to sell at a price related to the cost of production.

There is a great scope for increased production of poultry and fish in the country which hold promise for increasing the animal proteins supply in shortest possible time.

Private breeding farms for teddy goats, rabbits and cattle be encouraged to increase the meat production. A small unit of teddy goats and rabbits are suitable for backyard rearing. The productivity of animals can be achieved through increased research in:

*Recycling of animals waste.
*Further use of by-products, waste and other alternative feed sources.

*Improvement of animal reproduction and growth efficiency.
*Greater use of forage of high-yielding varieties in animal ration.
*Increased efficiency of non-protein nitrogen utilization by animals.
*Improving range lands as a source of feed for animals.
*Development through breeding programme of high efficiency animals that can effectively utilize more forages.

PREVENTION OF FOOD LOSSES

Prevention of food losses through pre and post-harvest conservation and processing should receive as much attention as increasing agricultural production as a means of increasing food availability. It is estimated that pre and post-harvest losses can be as high as 20-40 percent. The post-harvest losses of cereal and legume grains have been reported to be 5-10 percent in this country. As much as 8.4 percent of animal foods and 30-60 percent of fruits and vegetables are wasted at various stages due to defective packaging, handling, transport, stroage and distribution. Similarly, 35 percent of sugar and 40 percent of edible oil are lost during the processing of sugarcane and oil seeds at village level.

There is, therefore, an urgent need to reduce the food losses between harvest and consumption and increase food availability to raise the degree of self-reliance and improve the standard of nutrition. There is little information available about losses and loss reduction of grains. More information is needed about perishable and socio-economic factors affecting food conservation. Efforts should be directed to improve storage, transportation, marketing and processing of foods. Applied research is needed to improve food processing equipment so that it works efficiently under local conditions. Biodegradable pesticides (insecticides, rodenticides and fungicides) be used in integrated systems of pest control, replacing toxic chemicals to which many pests are becoming resistant and which may be threat to the health of people and livestock. A course on post-harvest technology may be introduced in the training of agriculture graduates and extension workers.

There is also little purpose in increasing grain production in order to enhance the caloric intake of rodents, insects and micro-organisms. For these reasons, post-harvest system research that encompasses the total food system from the time it is harvested till it is delivered as food to the table must become part and parcel of research programme. An inter-disciplinary approach to agricultural research involving plant breeders, agronomists, nutritionists and economists is needed to bridge the gap between the nutritional needs and food supply.

PAKISTAN'S POPULATION IS 92 MILLION

According to official sources, Pakistan's estimated population is about 92 million and it is the ninth most populous country of the world.

According to the census of 1981, released in December last, the density of population has gone up from 82 per kilometre in 1972 to 106 per kilometre in 1981. The highest density was recorded in the Punjab (230), followed by NWFP (148), Sind (135) and Baluchistan (12) on per kilometre basis.

Pakistan's population has been growing at a rate of 3 percent per annum during 1961—81 period, a significant acceleration from the growth rate of 1.7 percent in 1951—61 period, largely due to allowing slowly falling birthrate and rapidly declining mortality. While the birthrate displayed a marginal change from 50 to 42 per thousand, the death rate plummeted from 30 per thousand in 1947 to 12 per thousand at present, primarily because of extended heath facilities. —*Dawn*