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**Some Observations on  
Food Security, Sufficiency and Safety**

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# **SOME OBSERVATIONS ON FOOD SECURITY, SUFFICIENCY AND SAFETY**

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## **Abstract**

After 35 years of experience with green revolution technologies in agriculture both educated and common men have realised the risks of consuming the foods produced based on the excessive use of chemical fertilisers and pesticides. Hence the agricultural scientists began advocating the use of bio-technologies in agriculture. Now, greater emphasis has been placed on the promotion of organic farming based on farm yard and green manures and herbicides, etc. Hence, people in general have realised the health hazards of consuming the foods produced based on the use of chemical fertilisers and pesticides. The green revolution technologies have also contributed to the environmental and ecological degradation in the countryside. Hence the country has passed a stage from merely increasing the quantity of food production in order to meet the consumption requirements of growing population to one of assuring the masses of better health and environment which would enable them to lead a productive life in the society. Hence the emphasis has been shifted from one of quantity of food to the quality of food produced and consumed by masses. The damage done to the health status of the people by the green revolution technologies in agriculture can be better gauged by the World Health Organisation's (WHO) finding that the Asian mothers' milk has the highest proportion of pesticide residues in it in comparison to the other continents mothers' milk.

The suspicions regarding the food security of our masses being affected by our entry into the World Trade Organisation (WTO) are found to be misplaced and unwarranted. This is because most of the problems relating to food security in the country are our own making. It is the total mismanagement of our domestic economy, especially the agricultural and rural sector that mainly explains why we are facing a curious situation of mounting foodgrain stocks and hungry millions. By any yardstick, today we found at least one-fourth of our population suffering from chronic malnutrition and hunger While the rural poor are

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threatened by food insecurity because of their weakening land base; the urban poor are facing food insecurity because of growing unemployment and deteriorating environment. In this context, it is a pity to note that the government has yet to come out with a National Food Policy which would go a long way in benefiting the poor. Even after 15 years of debate, the government could not finalise the food policy for approval by the parliament. Meanwhile, the country's food production, especially its rate of growth has been found to be slackening in per capita terms, during the decade of 1990s. And the people of this country have realised that they no longer can bother about the quantity of food produced without ensuring its quality. In this connection, it is worth pointing out that while developed countries bother about the quality; the developing countries bother about quantity. So, the time has come for the countries like India to bother more about the quality of what it produces rather than how much it is producing. In the changed context of our entry into WTO regime, it becomes all the more important to enhance the quality of our products so that we can benefit more from globalisation of our economy. Of course, first, we should try to produce qualitative foods for our masses by masses by using bio-technologies in the place of green revolution technologies in the countryside. The WTO Agreement on Agriculture (AOA) which was finalised in 1994 has nothing to do with the food insecurity of our people. Instead, the agreements contain provisions for the food security and safety of poor masses in the developing countries. Any country can ban imports of unhealthy foods into them by resorting to the application of phytosanitary measures. And all exports of food items should conform to the CODEX standards agreed by all countries while entering into the WTO. Within the countries, any financial allocations made for the alleviation of poverty and food security are exempt from the calculations of Aggregate Measure of Support (AMS). Hence the increased food insecurity of our poor masses can be attributed to the declining purchasing power in their hands. This has subsequently resulted in demand constraints for the food produced in the country. The same demand constraints also explain the glut in the market for foodgrains in the country. Even the distribution of foodgrains through PDS at low prices could not increase the offtake. Studies have already pointed many loopholes and inadequacies in the functioning of fair price shops run by PDS. Yet, they continue to be unresolved with negative consequences for the poor.

### **Some observations on food security, sufficiency and safety**

In the paradoxical situation of mounting foodgrains and hungry millions it becomes the duty of every sensible citizen to understand the various issues relating to the food security, sufficiency and safety in this country where one-seventh of the world population at present live and work. Though right to information is not in our constitution, it does not prevent individuals from seeking relevant information which affect their day to day lives in the society. Such acquisitions of information becomes necessary for initiating any result oriented actions in the society. Hence citizens cannot remain passive even to such mundane economic problems such as food security and safety. And the actions on such fronts cannot be left to be handled only by a few consumer action groups which are of course putting in a lot of effort in this regard.

First, let us take up the issue of whether country's membership in the World Trade Organisations (WTO) has endangered the food security of our population, especially after 1994 from when the WTOs Agreement on Agriculture (AOA) came into effect and mandated the nation states to follow its guidelines with respect to the world trade in agricultural commodities. Experts at the seminar argued that our entry into the WTO has nothing to do with food security of citizens in the country.

The country's problem with food security is largely its own making rather than due to its entry into WTO. Most of the problems relating to food security continue to be elusive because they are our own making. The government of India in accordance with the requirements of AOA had removed all quantitative restrictions (Q.Rs) on agricultural imports from April 2000. But India has not much to fear from the removal of Q.Rs because it can take recourse to the imposition of other tariffs and import duties which can touch the maximum of 300 per cent. Of course, the country has to provide for a minimum market access of 5 per cent of domestic market to the other countries' agricultural products. Barring this we can restrict the remaining 95 per cent of imports in agricultural commodities by suitably adjusting our tariffs and import duties. Right now, on most of the agricultural commodities they are upwards of 50 per cent. On rice and wheat which are our staple food items, we levy an import duty of 80 per cent. However, the data relating to imports of agricultural commodities, especially after lifting of Q.Rs show only marginal

increases with respect to different food items with the exception of large scale imports of edible oils like Palmolin from Malaysia for some time. But the Palmolin imports had affected mainly the coconut farmers of Kerala who experienced slumps in oil prices. Other than affecting a particular region's economy, it has not produced any visible adverse impact on the rest of the country's economy. The imports of milk and milk products, fruits and vegetables and other food products had a low value. And, in fact, their imports have come down substantially during the recent period. Very recently, oil imports have also fallen marginally. The smuggling of agricultural products is not significant as has been made out by some traders. However, the future of agricultural trade will be governed very much by the future agreements in agriculture. For the present, we have to evaluate only the WTOs AOA relating to the year 1994. Nevertheless, it has not produced any negative effect on the food security of India till now. But the individual countries have to reduce their Q.Rs and import tariffs and duties along with their reducing export subsidies in order to increase market access of agricultural exports coming from developing countries. In this connection, it is also worth noting the fact that 1994 AOA has not permitted India to provide any export subsidies to its agricultural products. But this has not affected the domestic food security. The latest round of negotiations at Doha tried to correct the 1994's AOA. This is because the last one (AOA) enabled the European Union, Japan and South Korea to provide more and more subsidies to their respective agricultural sectors. Hence the latest negotiations at Doha center around reductions in tariffs and import duties which are at present 80 per cent on rice and wheat in our country.

In the new negotiations, the issue of providing fertiliser and other subsidies and tariffs came into more force i.e, how long a country can continue with subsidies to its agricultural sector and how long a country can impose higher tariffs on imports of rice and wheat. Intellectual Property Rights (IPRS), geographical indications, new seed varieties, imposition of food standards, etc; will come into much more force hereafter. However, with the exception of last one, all the other three will have no bearing on the food security. Import liberalisation on agricultural products will only increase uncertainties and fears in the minds of farmers. In any case while discussing food security we should bear in mind the fact that about 25 per cent of our population suffer from chronic malnutrition. In the government's paying of higher procurement prices, only Punjab, Haryana and Western U.P farmer's are benefited the most while consumers of all other regions paid increased issue prices for PDS. So

one region and one group of farmers benefited at the cost of food consumers belonging to other regions.

Hence the country has come to a situation of accumulated food stocks of 68 million tonnes with the possibility of its going up to 80 million tonnes next year amidst widespread malnutrition. As far as food availability is concerned, it was argued that in comparison to the 1980s, in the 1990s there had been a slow phase of growth of foodgrain production which was accompanied by the increasing prices of cereals which threatened both the availability and security of food to the poor. Hence most of Indian agricultural and food security problems can be attributed to the mismanagement of domestic agricultural sector rather than to the opening up of the economy and entry into the WTO regime.

At present there are 68 million tonnes of foodgrains as bufferstocks with the government of India. This is in excess of 50 million tonnes compared to the requirement of only 18 million tonnes. The problem of lower prices received by farmers in rural areas and higher prices paid by urban consumers need to be examined and solved. The vast gap between the prices received by food producers and prices paid by food consumers had negative implications for food security of the poor. Added to this is the marketing of agricultural commodities which is very inefficient. We use diesel for transportation of foodgrains and other food items which very much added to the cost of food acquired by urban consumers. Since diesel prices had doubled during the recent years, the traders can use the conventional bullock cart transportation of foodgrains from rural to urban centers. It is said to be cheaper to import rice by ship from Thailand coasts to Tamil Nadu coasts rather than bringing the same from Punjab to Tamil Nadu by goods train. However, the problems of cereals and food insecurity are caused mainly by the mismanagement of domestic economy. The increased transportation costs and middlemen's and trader's margins have added more to the urban food insecurity rather than to the rural food insecurity. Tamil Nadu is said to be a food deficit state. Employment is not that much productive to provide the workers enough to eat and to keep them healthy. Food availability and access to it are important issues. Among the major states of India; Kerala, Maharashtra and Tamil Nadu are having deficits in their cereal production and their prices are higher which ultimately increase the food insecurity of people in these states. However, this is to some extent offset by PDS in a state like

Tamil Nadu where it has a good network. However, the policy would concentrate not only on food security and availability but also in providing better livelihood securities.

As far as demographic factors affecting food security are concerned, the sex-ratios are found to be adverse to women. Some studies have shown that females are discriminated in providing food. There is also female infanticide practised in Tamil Nadu. And, all these have implications for food security. Coupled with these adverse demographic factors are the health problems which affect the absorption or assimilation of food by the poor. The available statistics show that 13.4 per cent of Urban population consume less than 1890 kilo calories per capita which is almost the hunger line. In Tamil Nadu though urbanisation is growing at a faster rate, more than 10 per cent of its urban population are living in hunger. Thus despite the increase in food production there has been an increase observed in food insecurity too. Between 1985 and 2000, the per capita food consumption of urban people declined from 2500 kilo calories to 1890 kilo calories. In dealing with food security aspects we have to take into account the proportions of urban population living in slums. In Chennai alone 26 per cent of its population is living in slums which is more than the proportion of slum population in Andhra Pradesh. In food security, the people living in slums are considered important because of their unhygienic conditions, garbage accumulations and of polluted water bodies which would all threaten the health status of poor people and hence increases their food insecurity. Hence the basic policy should be cleaning of cities which would also simultaneously increase the employment of poor. At present garbage is not segregated and recycled. And, this should be done on a priority basis. There is also need to clean up water bodies. Air pollution should also be reduced in order to provide clean environment to the urban poor.

Coming back to the food security in WTO regime, there have been concerns expressed from the farmers point of view also. Farmers till date are not aware of what the WTO agreements on agriculture (AOA) are and how the removal of quantitative restrictions will affect their agricultural business and food security? The increasing dependence on the global market forces to determine the price of their commodities resulted in farmers looking for particular cash crops where thousands of rupees elude them. The ground level studies show that the farmers are not bothered

about the international markets for their produce. They are mainly concerned about the local markets for their produce. This is because the production is also taking place locally. Producing for international markets also means the changing of cropping pattern from foodgrains to fruits, vegetables and flowers etc.,. Thus ultimately threatens the food security of farming community in the country. For instance, the introduction of contract farming in the Kuppam region of Andhra Pradesh resulted in the production of mainly the fruits and vegetables and ultimately moving away from the production of foodgrains. Nevertheless, we have to consider the cost aspects of present day agriculture with their consequent effects on the economic conditions of small farmers in the country. With 60 to 70 per cent going to input costs, the farmers are only moving from one debt trap to the another. Such a situation has only increased the food insecurity among the small farm families in the rural areas. In addition to the non-profitability of raising crops, the small farmers have to face problems created by mechanisation, inequitable distribution of land ownership and lack of marketing facilities for their produce. In such a situation any of the younger generation male agricultural workers found it profitable to move away from agriculture into non-agricultural occupations leaving the former to the care of female and older workers in the villages. In this context, it is also worth mentioning that while losses in crop production led to suicides are widely reported in the front pages of print media; the passive deaths caused by the same food insecurity went largely unreported in the same print media.

Again, there are some other demographic factors which have a bearing on food security. For instance, during the last two to three decades, there has been an increase in the number of widows in the age-group of 20 to 30 years in Tamil Nadu. They have their children and families but have lost their adult males. This is because most of them consumed illicit liquor and died early in their lives. Added to this are the health problems of the poor caused by food insecurity which also hastened the process of early deaths among the bread winners of the poor families, especially in the rural areas. Another interesting factor relates to female agricultural labourers. They are no longer interested in back breaking agricultural works which need to be performed in the hot sun. Instead, they prefer to work inside their homes or under a roof such as in beedi rolling while watching the television serials. On the contrary, growing educational levels of the adolescents have encouraged them to seek employment in non-agricultural occupations available outside the village rather than



dirtying their hands by working in the agricultural fields. However, information technologies have created a positive impact both on agriculture and farmers. Government's failure to implement environmental laws and the shrinking of grazing lands have been mentioned as problems faced by the farmers, especially in Tamil Nadu . In addition, the government has not empowered the local level leadership to deal with the issues of development at the ground level effectively. This happened despite the 73<sup>rd</sup> and 74<sup>th</sup> amendments to the Constitution whose objective is to devolve enough powers to the panchayats in the state. For the promotion of organic farming and the cultivation of traditional varieties there is need to increase community control over farming. The government should also establish community seed and grain banks at the village level.

Karnataka has a much better system of Panchayati Raj Institutions compared to other states in the country. Karnataka has also a better list of Below Poverty Line (BPL) category in the state. The Karnataka government has identified a down -to-earth approach towards the identification of small farmers and agricultural labourers who are really in trouble and who need governmental help.

As far as subsidies are concerned, the government should provide only the necessary subsidies. It should not provide all less important subsidies. Even if the subsidies provided by the government are less than the ceiling levels imposed by WTO, that does not mean we can increase all our subsidies. Instead, we should be choosy about which subsidies should be increased and which should not be. European Union has not reduced the subsidies for the last 10 years and they are not going to reduce them for the next 10 years. Within the country, despite the increase in the prices of agricultural commodities, the net incomes earned by farmers either per unit of land or per unit of output was declining in the 1990s. As far as crisis in oil seed sector is concerned, it is going to stay with us for some more time to come.

Even if you take a longer period of time between 1825 and 2000; the average cereal yield rate was increasing while the extent of arable land available for cultivation in the country stagnated at sometime in the middle of 20<sup>th</sup> century itself. Further, the green revolution ushered in the country from the middle of 1960s has had its negative effects both on the environment and economic conditions of different sections of agricultural community. Some of the major criticisms of green

revolution relate to a) its destruction of forests and grass lands, b) acceleration of soil erosion and salination, c) increased use of chemical fertilisers and pesticides with consequent health problems to the food consumers, d) preference to the cultivation of cereal crops rather than non-cereal crops and e) the requirement of intensive irrigation, etc

There will be an increased demand for food due to the rapid growth of population in the near future. The world's population is estimated to increase from the present six billions to eight billions by the year 2020. In addition, the increased urbanisation has improved the purchasing power of population with the consequent increase in demand for food. Over the years, there has also been an increase in the consumption of animal foods. But the 1990s had witnessed the declines both in animal population and marine fish catches in the country. In fact, the latter had stagnated in the early 1990s itself. However, ecological foundations which are essential for sustainable development of agriculture is getting eroded at an unhealthy phase. These ecological degradations mainly related to a) land, b) water and c) bio-diversity. For example, the per acre/hectare yield rates of major crops like rice and wheat are far lower compared to their yield rates in Thailand, China, Sri Lanka and U.S.A.. Of course, they may still be higher compared to some of the developing countries in the world. But it is no consolation for not improving the productivity of our agricultural sector. Nevertheless, bio-technology is found to be a potential tool for increasing our agricultural output. It has the advantage of reducing costs of production, increasing per acre yield rates and improving the nutritive values of foods produced based on such technologies. But before switching over from green revolution technologies to bio-technologies, we should ask ourselves why, the agricultural sector has failed to achieve higher per acre yield rates which the above mentioned countries could achieve in no time. And why not agricultural scientists study those countries' agricultural performance and suggest remedial measures which our farmers have to adopt in order to catch up with those countries' yield levels.

At present there is a raging controversy going on in the country about the negative effects of cultivation of Bt-cotton largely in Gujarat. While this bio-technology was found to be economically profitable to the farmers; the same was not found to be sustainable both ecologically and environmentally. The actual benefit for Bt cotton is said to be reducing the pesticide cost and improving the yield rates and

incomes. But the government is objecting to its environmental and ecological damage that it may cause. In Bt cotton- the mechanism of action is stated to be as follows. "The caterpillar consumes foliage with Bt protein. This protein binds the receptors in the gut wall. Then, the gut wall breaks down and cause caterpillar to die in one to two days". However, the government cannot ignore some of the economic benefits of Bt cotton to the farmers.

Right now, the cotton crop in the country is valued at Rs.15000 crores. And the cultivation of Bt cotton is estimated to fetch a net income of Rs.4500 per acre. Its yield rate will go up by one-third of the present level or by 150 kgs per acre. At the same time the expenditure incurred on pesticides will be reduced by Rs.1500 per acre. These data are obtained by testing Bt cotton in 23 out of 25 experimental locations in the country mostly from Andhra Pradesh. Based on such advantages some scientists argue that there is no alternative to bio-technology.

As far as Genetically Modified Organisms (GMOs) food coming into the market is concerned, it has not yet been shown that those food stuffs have a negative impact on human and animal health status. The tests all over the world have authenticated the 100 per cent safety of GMO foods. But, of late, a few American companies have set the safety standards of GMO foods to three per cent (i.e., 97% GMO and two to three per cent organisms).

This led the European Union to ban the imports of GMO foods into its countries. India has also banned the imports of GMO foods for the time being. The Consumer Action groups (CAG) in the country are adopting wait and watch policy for now. Of course, they are not against recommending the consumption of GMO foods to the consumers. But what they argue now is that the GMO foods should be tested for their health standards by independent organisations and laboratories rather than simply going by the companies' statements or findings of the health aspects of their GMO foods which they manufacture and market. This is because most of their findings were kept as secrets and they do not reveal the negative aspects of their tests. Moreover, they do not put all their Findings on GMO foods in public domain. Hence the testing of GMO foods by independent agencies becomes all the more desirable before recommending the same for human and animal consumption. However, the government and consumer action groups should educate the public

about the differences between bio-diversity and bio-safety. In this context, there is also need to amend our laws suitably so as to protect our bio-diversity and indigenous technologies from their possible misuse by others and unnecessary economic benefits accruing to those who are not directly involved in the production of such knowledge. It is also worth noting the fact that there were more than 10,000 scientists discussing various bio-diversity aspects at Rio's earth summit meeting in 1991. There was also a Convention on Bio-Diversity (CBD) to discuss specially these issues.

Coming to the India's food production and WTO prescriptions for trade in food, some experts emphasised the point that the time has come not only to look at the quantities of food that are produced in the country but also to look at the quality of food which is produced in the country. If country wants to take advantage of liberalisation in food trade then quality maintenance on par with the developed countries becomes a must. So we cannot simply aim at increasing the food production without simultaneously increasing its quality and safety from the taste and health points of view. Hence the country has to take a hard look at the production of quality food to the masses in the late 1990s, now in early 2000 and in the years to come. The quality aspect also becomes very important not only from the point of view of earning more foreign exchange but also from the point of view of ensuring both food security and safety to the masses or consumers.

There are technical issues to be dealt with in food production. There was a old saying that while developed countries look for quality; the developing countries look for quantity. Now the time has come even for the developing countries to look at both quantitative and qualitative aspects of food production. This also needs the introduction of appropriate technologies in agricultural sector. Recently, some of our food exports have been rejected on grounds of large proportions of pesticide residues and foreign material in them. Hence if we want to take advantage of WTO guided trade in food, then, our food production and exports should conform to international standards on its quality.

As far as production of foodgrains in the country is concerned, the available data show that there are limits to further production of food with the area under foodgrain production, intensity of cropping and per acre yield rates have all been

already stagnating in rural areas. For instance, between 1970-71 and 1990-91, area under foodgrains increased by only 2.2 per cent. In the same period, the net sown area had gone up by only 1.81 per cent and was declining. Again, in the same period, the gross cropped area had increased only by 13.48 per cent. Further, there has been an over exploitation of ground water for irrigation. One out of every three litres came from ground water aquifers for irrigation. This is not only unsustainable in the long run but it has also increased the salinity of soils in the short run. The latter impact had also affected the land productivity which in turn negatively affected the yield rates of crops. This is contrary to the experts opinion who argue that irrigation should stabilise crops rather than to augment them. Hence there is need to stop over exploitation of ground water with a simultaneous increase in the use of surface water sources (rivers, tanks and dams, etc) for irrigation. This switch in pattern of irrigation will improve the quality of land and enhance the yield rates of crops as well as total food production in the country. Otherwise, the country's growing population has to face the declining per capita net availability of quality foodgrains with all the attendant inflationary tendencies in the economy. And, all these have negative implications for the food security of both rural and urban poor.

One is also in a dilemma to suggest whether we should concentrate on large irrigation projects when we have a pretty well rainfed agriculture which offers enormous scope for the production of qualitative and nutritive cereals, millets, spices and fruits etc. The dry land agriculture can also be reoriented profitably towards export markets. The dry land agriculture also becomes important in the context of declining ground water tables and the environmental and ecological problems faced by the large irrigation projects in the country.

In order to overcome the food deficiencies in poor households, the government has introduced the Public Distribution System (PDS) so as to supply cheap food to them. But the studies conducted so far have pointed out to many deficiencies of PDS in meeting the food requirements of poor in the country. Some of the deficiencies relate to the wrong targeting, cross subsidisation of food and the siphoning of foodgrains meant for PDS into the open market by none else other than the fair price shops contractors. Thus, there are many loopholes to be plugged in PDS before it can effectively serve the poor in the country.

Right now, there are a few social scientists who argue that PDS is absolutely wasteful and it is not all targeted. But this is not the case in all the states of the country. But there are a few states like Tamil Nadu, Kerala and Andhra Pradesh where PDS is better targeted and benefiting the poor. In fact, in Andhra Pradesh PDS is providing rice to 80 per cent of the population whereas the needy may not exceed even 20 per cent. Nevertheless, it is up to the state governments to decide about whom to benefit and to what extent. But, right now, of all the major states, Andhra Pradesh is providing better food security to its population. It provides 25 kgs of rice per agricultural labourer household per month in addition to other food items and kerosene. It also provides to the households which are having school going children 3kgs of rice free per child, per month. This quantity of rice is supplied as a substitute for non-implementing the noon-meal scheme in the schools. However, since the staple food item of rice is supplied in considerable quantities at low prices it can significantly enhance the food security of poor in that state. Here it is worth noting the fact that Andhra Pradesh is one among a few major states of India which has achieved a lower incidence of poverty in the 1990s.

Another factor which has a significant impact on the food security of rural people relates to their declining access to the common property resources. The shrinkage of grazing lands in the villages has led to increased maintenance cost of income earning milch animals, bullocks, sheep and goats owned earlier by the poor. The declining ownership of livestock even at a macro level in the 1990s has been well recorded. However, in addition to the increased maintenance cost of animals their prices also went up several times during the last two decades. Hence the declines in livestock owned by the poor led to their food insecurity in the villages. They can no longer hope to consume more of animal foods in their households. Now their food basket contains mostly vegetarian items. In addition to the depletion of livestock resources, the declining access to common property resources has also affected the bio-mass systems of semi-arid zones. The semi arid environment is also eroding over the years.

A few other developments in the agricultural sector of the country had also affected the landless agricultural labourers, artisans and those engaged in services at the village level. First, the increased mechanisation of agriculture had reduced the productive employment of both male and draught animal labour power in the

countryside. Secondly, the increased degree of monetisation of wage payments has been associated with the declining kind wage payments and the zero stocks of foodgrains in the landless labour households. Thirdly, agricultural labourers are no longer served with food on the farm by the employer – cultivator households in the villages. Fourthly, the annual kind wages paid to artisans and services people (Jajmani system) earlier have been discontinued for a long time. And, all these factors either individually or in combination with each other have threatened the food security of different sections of village population over the years.

There is also gender bias in food security at the household level. Some studies have reported the discrimination of females in the intra household distribution of food. The preference given to male children in the serving of food at the household level can severally affect the food security and the health status of female belonging to the poorer groups. In some places of Tamil Nadu people are already resorting to female infanticides. The infant mortality rates have also been found to be higher among poorer groups. The nutrition programmes implemented for the sake of poor pregnant women and children by the central government (intensive child care development scheme - ICDS) has been found to be inadequate. For instance, the pregnant women are provided each with only a laddu prepared from pulses powder once in a week. Definitely these centres are not substituting for the lack of nutritive food provided to females in their households. Hence the government has to pay some attention to the food security of females, especially belonging to poor families living in rural and urban areas.

Coming to the food procurement, distribution and the management of whole food sector, some economists have already argued that most of the problems in this area are our own making rather than caused by our entry into WTO. The latter may at best cause a shift in government fiscal support to cash crops from cereal crops in the years to come. And this will be done to increase our agricultural exports to other countries. Other than this, the internal operations in food procurement and distribution suffer form many inadequacies. Many problems of food are caused mainly by the mismanagement of domestic economy and in particular the agricultural sector. Now the government and the country are witnessing a peculiar situation of mounting foodgrains and hungry millions. With foodgrains stocks touching 68 million tonnes this year as against the required quantity of only 18 to 20

million tonnes; the government is in a piquant situation as to how to handle such a large quantity of foodgrain stocks. In fact, it is a pity to note that a considerable part of these foodgrains are being stored in the open for want of godowns. And, this open storage of foodgrains has negative implications for its quality. Already the foodgrains stored for more than a year loses 50 per cent of its original quality. The rice and wheat stored for a long time also decolours and raises the suspicion of consumers about their quality. However, it is only the central government which is primarily responsible for the mounting foodgrain stocks in the country. This is because it has acceded to the requests of farm lobbies belonging to Punjab and Haryana and western U.P. and procured foodgrains far exceeding all norms set for such an operation. During the recent years not only the government has procured more but it has also paid higher prices to the farmers' outputs in comparison to the prices prescribed by the Agricultural Costs and Prices Commission (ACPC). Since the government has paid higher prices to the farmers it has also hiked up the issue prices of foodgrains supplied by PDS thus squarely affecting the food security of poor consumers. However, some state governments like Tamil Nadu paid for this increased price hikes on its own and supplied the foodgrains to the card holders at the same old lower prices. In addition to paying higher prices for the foodgrains, the Food Corporation of India (FCI) has procured them at 20 per cent moisture level which experts say is bad for its quality in the long run. However, in the short run, the FCI is benefiting the farmers with one-fifth of the invisible quantities marketed by him. Hence a section of the farming community not only benefited from a higher price to their produce but also from invisible quantities marketed. Since the 20 per cent moisture level causes pollination and quality deterioration when stored for some time, the consumer suffers on account of paying more and receiving less of both quantity and quality. Moreover, the FCI is accredited with procuring the best and distributing the worst among the consumers. And the present mounting of foodgrain stocks is caused mainly by the demand constraints where by the government could not sell all the stocks that it has even at lower prices to the consumers. There is also a lack of purchasing power in the hands of non-producers of food in the country. Thus, the country has landed up in a wonderful situation of macro level food surpluses and micro level food deficits where at least one-third of its population is suffering from malnutrition and hunger. Even if central government wants to supply foodgrains to the really needy and poor at free of cost, most of the state governments with the exception of Karnataka and a few others do not maintain the accurate lists of below



poverty line (BPL) groups in them. Hence the central government has to stop procuring foodgrains above the prescribed limits and pay the producers only the prices recommended by the legally constituted ACPC which does a lot of work before arriving at such crucial figures. The political considerations in food management should subserve only economic considerations. With regard to open market operations in foodgrains, some studies have already pointed out the vast gap between the producers' and consumers' prices in the country. The middlemen and traders have kept to themselves enormous margins in food trade. Hence, they have not allowed either food producers or consumers to benefit from food management. The recent hikes in diesel prices have also added to the transportation costs of foodgrains. Hence the government has to fix up both producers' and consumers' prices at reasonable levels by regulating trade in foodgrains.

Moreover, the vast gap between the PDS and open market prices also led to smuggling of foodgrains both across and within states. There has also been a considerable siphoning of PDS foodgrains into the open market by the fair price shop contractors. The Controller and Auditor Generals (CAGs) should also bring to the notice of the government about the low quality of PDS rice and wheat and the malpractices committed by them in the distribution of food.

Now let us examine some of the problems confronting The Bt cotton which after some hesitation has been officially introduced in the country. Some private companies have introduced the genetically modified cotton in Gujarat. However, some experts do not agree with the fact that the farmers do not know about new seeds or technologies. This is because the farmers cannot indulge in options or in exploring the possibility of cultivating different crops. For instance, farmers cultivating Bt cotton are agitating why? This is because they are not allowed to continue with the cultivation of Bt cotton in Gujarat. However, one should acquire some basic knowledge of biology and the science of genetically modified crops before accepting or opposing the bio-technology, bio-diversity, genetically modified foods, organisms, hybrid seeds in tomato or in other vegetables or fruits promoted by a private company. All these require the learning of science and the testing methods of genetically modified foods, etc. At the same time, we should also understand the economic and financial implications of genetically modified crops. This is because the farmer is more concerned about the marketability of his crops and the agri-

business rather than the environmental effects of these crops. The arguments made for the cultivation of Bt cotton crop also holds good even for the cultivation of Bt maize which some foreign companies are trying to introduce in the country very recently.

Right now, European Union has rejected the imports of genetically modified crops or foods and organisms, (GMOs) why? Despite an highly subsidised agriculture, European Union is highly opposed to the imports of GMOs from U.S.A. because it fears increased unemployment in its agricultural sector. In addition, European Union is opposing the genetically modified foods from U.S.A because, of late, certain U.S. companies are setting 5 per cent safety margins which is not acceptable to European Union. (i.e, genetically modified is 95 per cent and organisms is 5 per cent which is not acceptable to EU). Again, one of the arguments that genetically modified crops can lead to monoculture is also not correct. This is because even traditional hybrid varieties are also monoculture. As far as economics of scale are concerned, like green revolution technologies, the bio-technologies or genetically modified organisms (GMO) technologies are all found to be scale neutral.

Coming to the food procurement and distribution within the country are concerned, it has been found that the quality control mechanisms of Food Corporation of India (FCI) are more-effective and stringent while procuring foodgrains but not in distributing the same to the poor and needy. Thus, the government procures the best and distributes the worst. The FCI is also procuring and selling foodgrains with high (20 per cent) moisture content. This adds to the weight of foodgrains and benefits the seller and affects the consumers, especially the PDS consumers. In addition, the high moisture content leads to pollination of rice and wheat and attracts rodents or pests which all have negative consequences for the quality of food ultimately distributed to the poor consumers. It is also jocularly said that the FCI has bigger rodents to eat and spoil the food within a short time of its storage. But, it is surprising that the government is supporting the groups which are against G.M.crops and food, etc., because such foods are short of quality. However, in opposing the G.M.crops and foods the country is very much on the side of European Union rather than on the side of U.S.A.

We need more data and information on linkages between food contamination and health impacts, food safety in marketing and distribution etc. We should also provide the consumer with more data and information on food safety and security. There is also need to integrate food safety with other policies and programmes of the government. The government should also think of setting standards with food safety as a barometer. It should also insist on safe material like corrugated (with less moisture) material for packaging. Right now, there is no set standard for packaging food. As far as genetically modified foods are concerned, we should insist on a particular company's laboratory's findings to be put in the public domain before it markets its G.M. foods. The government on its part should insist on conducting tests relating to health standards on G.M. foods done by independent agencies other than the companies' laboratories which are marketing G.M. foods. As a member of WTO we cannot restrict the entry of G.M. foods into our country for a long time. But, we can insist on their health standards. Right now, all the laboratory tests are only with the companies producing G.M. foods. They have not yet been put in public domain.

Another aspect relates to the quality of platform food, especially in cities or in urban areas. The food sold by vendors or hawkers are much less in quality and unhygienic. They also supply contaminated water for drinking. This is more so in a city like Chennai which is often witnessing the scarcity of safe drinking water. Despite the less quality of food and water supplied by street vendors most of the poor consumers are attracted to it because such foods are sold at cheaper prices. But consumers are risking their health while eating such platform food. Hence corporations, municipalities and other civic bodies have to interfere and set safety standards for the sale of such foods. Here, it is worth noting the fact that the city state of Singapore has successfully regulated the sale of such foods to its population. Hence our country should also follow the example of Singapore in this regard. In fact, Singapore has virtually eliminated such street vendors in food sales. In our cities, especially urban poor males who live mainly in slums are becoming victims of such unhealthy foods sold in the streets. And the lifting of prohibition and the availability of cheap liquor add to the woes of already suffering urban and rural poor in the country. One another aspect which causes a potential danger to the health of urban poor relates to the accumulations of garbage and wasted food in the streets. These should be handled on a priority basis. First, garbage and waste foods should be segregated and recycled for suitable use as fertilisers and pesticides by the

agricultural sector. Recently, the employment of females and children on contract basis by hazardous industries like leather tanning and match making, etc, in urban centres had very much affected their health conditions with negative consequences for food assimilation and absorption by them. Some studies conducted on these industries showed that the untimely taking of meals and use of toilets coupled with increased dust, smoke and bad smells have all affected the very food digestive systems in the bodies of these groups of employees. Hence the government and consumer groups should draw suitable plans for the poor women and children working in hazardous industries. And the government should also insist on testing of all food and drinking water before they are marketed and consumed.

There are also structural problems found in food security of rural and urban poor. While the rural poor need the productive asset base and employment, the urban poor need healthy environment and productive employment. Hence the structural problems like land redistribution and land reforms should be addressed before deliberating on any food issues. And, all food issues should be communicated to the common man in such a way that he/ she can understand them easily. Such a communication can also help in building trust between consumers and producers as well as action groups in the society.

As far as the availability of food is concerned, we are living in a syndrome of macro level food surpluses and micro level food deficits. While we have 68 million tonnes of foodgrains stocks at present on hand, we have about 35 per cent of country's population suffering from hunger and malnutrition. They do not have adequate food to engage themselves in any productive employment. Hence one-third of the country's population is caught in the vicious circle of poverty and food insecurity because for them it has become a day-to-day affair. With the exception of a few states like Gujarat and Kerala, all other states are having food surpluses. Even, Orissa is not a food deficit state. But, there the problem is one of lack of purchasing power rather than the availability of enough food as such. In the whole country's food operations, FCI is loosing more than Rs.1000 cores a year to the exchequer. However, it is a pity to note that the government has yet to formulate a National Food Policy. For the last 15 years or so, it is only talking about the formulation of such a policy without finalising any one. Recently, the central government has also proposed to decentralise food procurement and distribution to be carried out by the

state governments. But, not many states have come forward to implement such a scheme both for want of funds, manpower and political will. In this connection, it is worth pointing out that the state of Madhya Pradesh has decentralised all food procurement and distribution to a level of village panchayat, while Karnataka's food procurement system gives priority to the produce marketed by its small and marginal farmers. Nevertheless, the Madhya Pradesh experiments in decentralisation of food management is worth emulation by other states. In addition, there is also need to bring some fundamental changes in national policy on food. There is also need to rectify many loopholes found in the present provision of food to the poor through PDS. For instance, studies conducted on PDS in different states found that the fair price shops have long back became unfair price shops, especially in the countryside. Many malpractices and the siphoning of rice and wheat meant for PDS into the open market and their less quality have all been well documented by them. Moreover, most of the PDS cards are used for identity purposes as residence proofs for applying loans, and in obtaining government benefits, etc. Hence most of the non-poor also acquire PDS cards for different reasons. Again, since the PDS employees are paid low salaries, they are tempted to earn extra incomes by engaging themselves in all kinds of malpractices. Hence the increases in their salaries can to some extent avert such malpractices committed by them. For the non-poor, the government can think of providing multi purpose cards rather than PDS cards for their use in securing loan and other benefits. This can also check the cross subsidisation of food to the non-poor sections of population. The state governments on their part should strictly identify who the poor are? And, who really needs their help. This means the preparation of more or less accurate lists of those who are Below the Poverty Line (BPL) both in rural and urban areas. Again, in this regard, Karnataka is said to have already prepared a better BPL list compared to other states in the country.

However, in implementing many policies and programmes relating to food not only the consumer action groups (CAGs) but also each and every food consumer is expected to be active and alive to the current problems on hand. Right now, both producers and consumers of food are adopting a passive approach even to the crucial issues of food security, sufficiency and safety. And such passive attitudes of producers and consumers must change for the better.

Just like consumer action groups, farmer's associations should also be formed to check malpractices committed by businessmen and traders both in input and output markets. Farmers associations should ensure the quality of food marketed and secure better prices for the produce supplied by the farming community. Government should involve these farmers associations in its marketing efforts of foodgrains in the state. In this connection, it is worth mentioning the formation of farmer's associations and Self Help Groups (SHGs) in Nilgiris district recently both to check the adulteration of tea and to ensure its quality to consumers.

In order to promote quality food production, government should encourage farmers to take to organic farming. The respective state governments should extend all economic and technical help to the farmers to switch over from the using of chemical fertiliser technologies to the adoption of bio-technologies and organic farming techniques. If this is done, quality of food to a larger extent can be assured at production stage itself. The government on its part should provide labeling and marks on the lines of Agmark and testing facilities for organically produced foods. It should also open special counters for marketing organic farm produce. The marketing of dehydrated vegetables and fruits should also be encouraged. One of the factors accounting for low quality of our foods right now is the over use of chemical fertilisers and pesticides which leave large pesticide residues in foods produced. Very often our food exports are also rejected on this ground by the developed countries which are eager to apply phyto sanitary measures provided under the WTO Agreements on Agriculture (AOA). Even animal feeds are not escaping from the over spraying of chemical pesticides which again leave large pesticide residues in their feeds affecting their health. Hence there is need to switch over from poisonous chemical pesticides to eco-friendly herbicides both in the cultivation of foodgrains for human consumption and in the production of feeds for animal consumption. The government on its part should provide enough of cold storage facilities not only at particular locations but also while transporting the perishable food items such as fruits, flowers and milk, etc. For instance, while milk is stored in cold conditions through the installation of chilling plants at the collection centers, the same is transported even for a few hundred kilometres without refrigeration of containers. This would lead to the spoiling of milk even while transported to the urban centres from the various rural centres. Further some milk co-operatives are selling milk at high (4 to 4.5%) fat contents. The health conscious consumers should purchase and

consume the toned milk which has less than 3 per cent fat content in it. However, it is pertinent to note a World Health Organisation's (WHO) finding with regard to the quality of milk provided by Asian mothers who ate the over pesticide sprayed foods in the countries of this region. WHO found the larger proportion of DDT residues in the Asian Mothers' milk which will affect the health of future generations very much in comparison to other regions mothers' milk. This is contrary to our promoting of mothers' milk as best food for babies in comparison to prepared foods for them. Now, even the quality of mothers' milk is suspect and this is a direct consequence of consuming low quality foods which have high Proportions of pesticide residuals in them.

A few years back European Union had banned the imports of beef from India on grounds of less quality which could cause health problems to the humans if consumed. The imports of fruits, milk and milk products from India have also been banned by some other countries. Hence there is glut in the domestic market for these food items. Consequently, the producers of horticultural products are incurring huge losses in their production. The government has yet to provide enough testing and laboratory facilities for the exports of even good fruit varieties from the country. The imports of mangoes from India which has a large marketable surpluses were banned on the ground of possessing large proportions of pesticide residues in them which can affect both human and animal health standards. Hence other countries are banning imports of many perishable foods from India by resorting to pyto-sanitary measures. But the same is consumed within the country, especially by the poor because they are available at rock bottom prices in some seasons of a year. But such consumption of fruit varieties has implications not only for their food security but also for their health standards. This has also implications for the food assimilation capacities of the poor. Recently, Iraq has rejected the consignments of wheat to that country by private exporters from Mumbai on grounds of foodgrains containing a more than allowable proportion of foreign material in them. Hence the shipments of wheat were returned to the country. Again, a few days back, Iraq had announced the import of 6 lakh tonnes of our wheat from our two export companies provided they send the wheat at only 0.5 per cent foreign material. But, this time, the government is not willing to license the private exporters unless they get assurances from Iraq government about the quality of Indian wheat to be shipped.

For the past few years, many companies have started producing and marketing the iodised salt in order to overcome the deficiency of iodine which has negative consequences for the health of humans. But a large proportion of rural poor continue to use rocky salt instead of iodised salt. Hence there is need to increase consumer awareness about the health advantages of common salts. Recently, a few companies have also started producing and marketing B.P. salt. But how far this salt can reduce blood pressure has yet to be established. Since this B.P. salt is priced high at Rs.80 per kg only high income earning consumers can prefer to purchase and use this salt.

As far as the consumption of mineral waters supplied in bottles and sachets are concerned, the consumers should be aware of the fact that their quality is not uniform across the country. Since many brand names produce and supply bottled drinks, their quality varies very much from those marketed in Tamil Nadu to those marketed in Rajasthan. In the case of many packeted water suppliers it has been found that many have yet to adhere to the health standards prescribed by the government. Hence the government should be strict in enforcing the health standards for both bottled and packeted drinking waters. The government should also discourage the use of plastic bottles in the marketing of water because they are found to have harmful effects on both human and animal health. Though the drinking water is marketed as mineral water, it is no longer 100 per cent mineral. Hence many brands are only declaring them as purified or fresh water. Hence the consumer should not be carried away by the popular sentiments of drinking mineral water. Instead, some times, the consumer may be drinking only less purified water.

In promoting coffee and tea, the respective companies can think of marketing decocainated coffee and dia tea (for diabetics). They should be promoted not merely as hot drinks but also as health drinks. The decocainated coffee has already captured the world market as a health drink. Since our coffee contains a high level of alcoholic substance (2.5%) in it, the foreign consumers are not interested in buying this. If we decocain it to 1 per cent alcoholic substance, then, it will be acceptable to both domestic and international consumers. Even the domestic consumption of coffee is very much skewed. It is already observed that three-fourths of the coffee produced in the country is consumed by four states of South India with all other states accounting for only the remaining one-fourth. However, coffee has



almost become a South Indian drink. Nevertheless, right now, there is a glut in coffee market both within and outside the country. Hence it becomes all the more important to produce and market coffee as a health drink.

As far as tea is concerned, the health experts have already identified its health advantages in reducing cardiac, diabetic and respiratory risks. Hence the tea should be marketed more as a health drink. And, it should be suitably processed to take advantage of both domestic and international markets. Right now, our tea is fetching lower prices compared to other country's tea in international markets. Hence suitable steps have to be taken to capture both domestic and international markets. Of late, there are also instances of adulteration of tea being noticed, especially by the small producers in the Nilgiris district. Such malpractices committed by small farmers could further deteriorate its quality and it needs to be checked effectively both by the governmental and non-governmental agencies. In this connection, it is also worth noting the fact that some producers associations and self help groups have already started checking tea adulteration in Nilgiris district. And, some commercial banks have also come forward to assist the small producers of tea to enhance its quality.

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