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SOME REFLECTIONS IN INDIAN AGRICULTURE A CRITICAL DILEMMA

Vinod Kumar*¹, Pramod Kumar Upadhyay¹

¹Lecturer, Sri Gandhi Vidhyalaya Inter College Dhanora, Amroha, India.

ABSTRACT

India's food grains production has increased dramatically from 50.82 million tonnes (mt) in 1950-51 to over 234 mt in 2009-10. But, food demand has been continuously rising due to population growth, increase in consumers' income, and other reasons. The projection made by the National Commission on Integrated Water Resources Development (NCIWRD) indicates that the total demand for food grains would be about 316 mt by 2025 and 441 mt by 2050. There are apprehensions now whether production of food grains can be increased to meet the projected level of demand given the recent dismal performance of Indian agriculture. On the one hand, the area allotted for food grain crops has been declining persistently in relation to gross cropped area, on the other hand, the growth rate in production and productivity of various food grain crops has decelerated during the last decade. Adding to this problem, now the paddy cultivating farmers from the state of Andhra Pradesh, which is the rice bowl of India, have declared themselves on crop holidays for the ongoing kharif season in an area of about four lakh hectares. The crop holidays, which are never heard in the history of Indian agriculture, declared by the farmers neither belong to rainfed areas nor the drought-prone regions but are from the districts of highly irrigated region in Andhra Pradesh. The farmers leading the crop holidays campaign have also urged their peers in Punjab, Tamil Nadu and Karnataka to go on crop holidays so as to protest against the poor remuneration from paddy cultivation. Since the contribution of irrigated agriculture to the total production of food grains is large, this move can potentially harm the production of food grains which may lead to food security problems as well.

INTRODUCTION: EMERGING ISSUES

During the last twenty-five years, farmers in the Third World have risen to an enormous global challenge. In stark contrast to the Malthusian scenario, the world currently produces huge surpluses of food. Although the global population has grown from 3.3 to 5.3 billion, food production per person has risen even more steeply. Farmers have both intensified the use of resources to produce more from the same amount of land and expanded into uncultivated lands. As a result, each one of us has on an average some 7 percent more food than people a generation ago at the same age.

There has been a significant change in the composition of food available for consumption. More and more people are consuming food which is not produced locally and in turn are becoming increasingly dependent on fluctuations in external mechanisms : National and International Trade policies, Public Distribution Systems, Subsidies etc., for procurement of their food. The trend is alarming, as in the whole process the prices of food commodities goes up and a large

proportion of a household income is spent on procurement of food, leaving the common man even worse off.

AGRICULTURE AND FOOD SECURITY

Though food production in India increased from 50 million tonnes in 1950-51 to a record 199 million tonnes in 1996-97, the problem of availability of enough food for the burgeoning population in future is coming to forefront. The potential of bringing more land under cultivation has almost been exhausted and in future the net sown area in the country may even decline because of increasing pressure on land for other than agricultural purposes.

As per the South Asian Declaration on Food Security (New Delhi, Aug. 1996), "food is central to human survival, cultural identity and sustainable livelihoods." Food is foremost a source of nutrition and only secondarily an item of trade. If India desires to achieve food security, then its agriculture has to produce more food from diminishing per capita arable land and irrigation water resources and generate more livelihood opportunities and income.

India's food security problem, at present, however relate more to economic access to food rather than the production aspect. It is a case of inequitable distribution of the benefits of growth in agriculture production. A few people are eating out from the food bowl of many. With a spur in the consumption of concentrated, superior food like meat, eggs etc., there has been a diversion of food grains from primary to the processed form. The National Sample Survey (1991) data has revealed that with rise in the per-capita income, urban consumers are spending a greater proportion of their income on superior foods and in many rich states, the per-capita consumption of primary food grains has actually gone down significantly.

An average Indian diet primarily consists of cereals and pulses, which contribute over 75% of the calorific supply. Though per- capita cereal consumption increased from 334 grams per day in 1951 to 471 grams per day in 1991, the per capita availability of pulses declined from 61 grams to 40 grams during the same period. Pulses enhance the sustainability of vulnerable agricultural system and provide for cheap and easily available protein. The production of pulses has however not kept pace with the population. The normal per capita per day requirement of pulses is 70 to 80 grams as against the actual availability of only 40 grams. Consumption of pulses has fallen due to stagnation in its production and the replacement of pulses by soybean cultivation which is more profitable.

Ironically, the increase in per-capita per diem availability of food grains in the country from 395 gm. in 1950-51 to 510 gms. in 1990-91 has not ensured food security for the poor. About half of the rural population still has inadequate access to food and an average household still spends about 60 percent of its total budget on food. According to G. S Bhalla and Peter Hazell, "rapid economic growth, particularly if accompanied by an increase in household income will lead to an escalating demand for milk, eggs and meat. These in turn will likely lead to much greater use of

cereals for livestock feed and make primary food grains even more inaccessible to those living in poverty."

The concept of food security in ancient India was visualised through diversification of produce through subsistence farming. It was a democratic, decentralised system of production and distribution with low risk factors and less expenditure on transport, storage and distribution. The green revolution of the sixties, structural adjustment programs of the eighties followed by the globalization policies of the nineties however contributed to the loss of this traditional system of ensuring food security. Ironically, after nearly three decades of Green Revolution, ninety-five percent of human food comes from just 30 kinds of plants, an extremely narrow dietary basis for the species. If a major epidemic were to strike any of the cereal crops - such as wheat, rice and maize - there would be death by famine on a cataclysmic scale.

Over the years, there has been a significant change in the way food is produced, distributed and consumed. The predominance of selective cropping and cash cropping has had serious implications on the magnitude and the diversity of the food grain produced. The area under food grains is going down and there has been a shift in food zones at the regional level. Government has created large infrastructure for the procurement and distribution of food grains through food corporations and public distribution systems, with large subsidies having been earmarked for the same. The result- today, even a marginal fall of 3- 4 % in food grains output cause prices of primary articles to escalate sharply, necessitating government interventions by the way of ordering larger draw on reserve stocks of food grains and even taking recourse to imports as happened in 1993 and yet again in 1996.

Policies thus need to be formulated to ensure food security, not just at the national, state or the aggregate level but more importantly at the household level. Food Security is essentially a question of Human Security, and is an adjunct of employment policies, infrastructural policies and the overall development policies for the Nation.

TOWARDS SUSTAINABLE AGRICULTURE

In the context of agriculture, "sustainability" refers to the capacity to remain productive while maintaining the resource base. According to Gips 1986, "agriculture is sustainable if it is ecologically sound, economically viable, socially just, humane and adaptable." Nevertheless, agriculture development in India, continues to be guided by the principle of increasing agricultural production rather than promoting sustainability.

Towards the end of the sixties, the government adopted the agricultural strategy which produced the "Green Revolution". Green Revolution in India ushered the use of hybrid seeds that were particularly responsive to chemical fertilizers. Crop production and crop productivity improved significantly but widened the regional imbalances. The benefits of green revolution remained largely confined to the North and North-West parts of the country.

The eighties saw the effect of green revolution waning, with problem of stagnation and decline of yields on irrigated land, rapid rate of land degradation, contamination and over-exploitation of groundwater resources which rendered large areas vulnerable to drought, coming to the forefront. The huge water requirement of the hybrid seed varieties propagated under green revolution led to conditions of water-logging, increased soil salinity and in extreme cases, even desertification. Extensive use of chemical inputs has polluted both surface water and groundwater, causing environmental and health hazards. After years of heavy use of fertilizers, the fertility of soil declined and progressively to obtain the same yields, chemical fertilizers need to be applied excessively. As a consequence, the organic matter in sandy loam soils reduced from normal 0.5% to 0.2%, and has encouraged luxuriant growth of weeds and their fast spread. Conventional methods such as manual weeding and inter-cultural operations have now become almost impractical.

Further, the application of pesticides led to increased pest resistance and development of new pest forms with aggravated virulence. The inappropriate and indiscriminate use of pesticides have become so widespread and an issue of serious concern that, the United Nations administered an international code of conduct on the distribution and use of pesticides. Strikingly, pesticide use in India is only 3.75% of the total quantity consumed in the world but almost half the world's pesticide poisoning cases and almost three quarters of the deaths take place in India as a result of improper handling by the farmers.

Today, agriculture experts, planners and policy-makers reluctantly acknowledge the failure of the green revolution and its lopsided concentration of resources on irrigated agriculture at the expense of rain fed agriculture which, paradoxically, constitutes 70% of India's cultivated area.

Over the last three decades, increased reliance on groundwater and surface irrigation, chemical fertilizers, pesticides and insecticides, transformed agriculture in India to a capital intensive occupation. The spread of Green Revolution has led to local-economies getting broken up. Farmers were encouraged and often coerced into producing goods primarily for the market. There was an erosion of indigenous, traditional agricultural practices and knowledge developed over the centuries. Taking their place was the quick technological fix provided by HYV agriculture with its heavy use of chemicals and pesticides on mono-cultured farms. The farmers became entirely dependent on the producers and distributors for these external inputs. The end result of such resource-intensive agriculture was the increased cost of production per unit of output, which in turn has led to higher consumer prices for food.

With recognition of the onset of "green revolution fatigue" evident in the stagnating yields of many crops, the impending task is to mitigate the ill-effects of green revolution, which if unchecked may wreck complete havoc with Indian agriculture. Simultaneous efforts need to be made to promote a more sustainable form of agricultural and identify sources for future spurt in agricultural productivity.

IMPACT OF WORLD TRADE ORGANISATION ON INDIAN AGRICULTURE

The current trend in agriculture is on making it easier for corporations to enter agri-business and transferring responsibility for infrastructural development to the private sector which generally has little interest in the rural areas. It has often led to farmers being squeezed of their land, or having lost the choice to take up more culturally and economically suited crops to the multi-national companies which dictate control over the cropping pattern. According to Dr. Ismail Serageldin, Chairman, Consultative Group on International Agricultural Research (CGIAR), "within the next 10-12 years, a new regime will be in place, with patents for most of the agricultural products held by a few transnational companies. And unless there is full participation from the South, the laws pertaining to Intellectual Property Rights would be dictated by these transnational companies and the American courts".

The WTO agreement on agriculture has just about written down the rules of international trade in agricultural commodities without bringing any relief to the ordinary consumers in terms of cheaper farm commodities - an axiom of free international trade. The agreement requires the conversion of all non-tariff barriers on agri-commodities trade into equivalent tariffs. These tariff rate equivalent are to be combined with existing tariffs and the resulting composite tariffs are to be bound at that rate. Each country is given the flexibility in distributing the average tariff cut over different commodities, as long as each individual tariff is reduced by at least 15% (10% for the developing countries) over the relevant period. Where the resulting tariff are prohibitive, a minimum level of imports, equal to 3% of domestic consumption is to be guaranteed. These "minimum access" quotas will rise to 5% of domestic consumption after six years. However for developing countries, the minimum allocation quotas constitute 2% of domestic consumption moving up to 4% after 10 years. The agreement also provides for a cut in the subsidies from the 1986-90 levels by 36% (24% for the developing countries) over six years (ten years for the developing countries) in equal annual installments. Developed countries are also required to reduce the volume of exports of each subsidized commodity by 21% over six years with average export levels of 1986-90. A corresponding reduction by 14% is required for the developing countries.

INDIAN AGRICULTURE - ISSUES AND REFORMS

As the last monsoon once again showed the vulnerability of Indian agriculture to the seasons, many issues related to performance of the agriculture sector have come up. In this interview with Gopal Naik, a Professor in the area of Economics & Social Sciences and Chairperson for the Centre for Public Policy at Indian Institute of Management, Bangalore, we attempt to understand the issues in Indian agriculture, the causes behind them and the effectiveness of initiatives and reforms that have been undertaken over the years. Simultaneously, we explore how can current policies and systems be better implemented to increase performance and reduce the vagaries of the monsoon over the sector.

Government failure is a major concern in agriculture because the high risks involved make help and facilitation necessary. Like any other business enterprise, agriculture is subjected to high risks because of the volatile nature of the factors involved. For instance, weather is often a problem - you have droughts in one year and heavy rains in the next. In both cases, farmers lose out, hence they have to look for a normal period to make money. Government, therefore, has to play a major role in providing support to farmers. This is true all over the world and there is hardly any country where government intervention is not present.

Irrigation in India can be broadly classified into two parts: the surface irrigation part and the ground water part. The issues related to each of these are completely different. As far as surface irrigation is concerned, there are a few major problems. One is the system management itself. We do not effectively manage water bodies, in terms of how much water is stored, how much is being used for irrigation, or what value we can add to this water. This is partly because it is seen more of an engineering kind of work rather than looking holistically that its main purpose is irrigation. We, therefore, do not have the mindset to make the best use of water for irrigation purposes. Consequently, water use efficiency is very poor in India and remains a major concern. According to many estimates, the extent of area irrigated compared to the capacity built is very low, averaging about 40%. We have problems like water logging at the head part of the water bodies and deficit at the tail-ends. Big dams have their own problems like rehabilitation of people, ecological concerns and whether they adequately serve their purpose. So these are issues with respect to surface irrigation.

The basic question is that whether the government should be doing so many things i.e. getting into PDS etc. or should it only come in when there is a drought or famine. The current debate is that we need to ensure that there is enough food for people and there is access to food. The issue is that we have a trend that focuses more on wheat & paddy and their growth rate and productivity has not been very high. There are concerns about whether we can actually feed the growing population or not. Some issues that are emerging are that should we also look at the local food sufficiency or not. Earlier every area would have one or the other food crop but because of the popularization of rice and wheat we may have lost many coarse cereals and therefore the ability to produce these coarse cereals. Though now we do realize that nutritionally they are important so should we have more of a local focus on food security depending on the requirement and ability to produce food grains? Should we see whether the food grain produced in that area is able to meet the requirement of that area and what could be done on say the technology front so that these cereals could be produced locally and in difficult areas and thus ensure food security.

EFFECTIVENESS OF AGRICULTURAL INSTITUTIONS

Creating new institutional arrangements with the hope that it will deliver results is quite common in the context of Indian agriculture. But as we have seen such arrangements often fail to create any tangible impact. Even though these arrangements are good conceptually, making them work

is a big challenge for the Indian government. ATMA as an initiative is yet to show any productive result. It has not been able to demonstrate a success story even though it is conceptually very sound. However, there has been some success with respect to the transfer of technology using the Krishi Vigyana Kendra (KVK). It has been observed that such schemes are more successful when they are run by NGO.

There are a number of issues with respect to private sector participation. One aspect is the government rules and regulations. Either there is no legislation or there exists a multitude of legislations. Getting through these complicated set of rules is difficult and poses a big problem for private players. Even simple things like a warehouse receipt system is a complicated issue in India. Ideally there should be a legislation which helps people to come forward and offer these services with ease.

Implementing legislation itself takes an extremely long time in India and even when established there is a lack of clarity which increases complexity. There is a high degree of risk involved. For example, the essential commodities act which says that at any point of time the government can actually come in and have a say on the amount of storage that is permissible for the good in question is a big demotivator for private players.

The second aspect which prevents private sector intervention is that most private players want quick returns. In agriculture most of the returns come in the long term and it requires a lot of time and effort in developing the markets. There exist many new concepts like commodity markets and futures. Good quality standards are also new to people, therefore it needs enormous effort on the part of private sector players to develop such markets in order to reap any profits. For example, consider the export markets for grapes. We finally understand the market and we now know the quality standard for serving the high end markets like Western Europe. It has taken us more than ten years to achieve this. Private players are not patient enough to wait for such long durations. Moreover if it is a small company then resources available to it will be limited and hence the individual company might not be able to put in the required effort to bear result.

There are certainly some very interesting traditional knowledge networks and grass root level innovations that are already in practice such as the HoneyBee network and other networks that are trying to put them together. One thing that has to happen is to screen these innovations to see the interesting ones and then channel them through the current networks such as Kisan Vigyan Kendras(KVKs) . Once these innovations are brought to the KVKs, these technologies can be transferred to the farmers and departments. The HoneyBee network has been documenting the same and disseminating them through their newsletter. However screening of technology is important since all innovations are not relevant or attractive to all areas. Hence it is important to screen them according to the geographical area and the local context of agriculture and use it for the local KVKs to promote.

PROVIDING SERVICES TO FARMERS

There is no point in protecting agriculture jobs if we want cheaper food. With NREGS rural wages have gone up including areas where there are fast growing urban centre. With higher wages there is no incentive to produce agriculture crops and so for cheaper food and cheaper agricultural produce the only option is to go for mechanization. It is correct to the extent that it releases people from rural to urban areas which require more people. These are difficult choices and the balancing that needs to be done involves a trade off between the long run and short run outlook. Also, it is increasingly very difficult and expensive to rear animals even in the rural areas. There are no common resources available any longer such as common forests or grazing lands so farmers have to go for confined feeding that means higher costs hence it is not feasible at all. Hence animal husbandry is no longer feasible except the milk animals and that too in some places. With all these changes mechanization is required.

That's one major issue that government has to address since there has to be a long term policy with respect to credit that can allow certain amount of flexibility e.g. the government might want to waive interest rate in a drought year or come up with some formula that for a particular set of conditions the government is ready to help to a certain extent. If that is very clear than institutions can also tune their operation to that and make it easy for them to work but the major issue they face is the uncertainty with respect to policy itself. So institutions have difficulty in predicting what the policy will be and so they shirk away from credit to agriculture. Hence, they avoid it and would like to provide it only to certain enterprises such as poultry which they call agriculture since they can get back their returns quickly. All these market distortions happen because of the uncertainty with respect to government policies and therefore defining long term policy with respect to credit is very important.

CONCLUSION

The critical issues in Indian agriculture are related to knowledge and infrastructure. Although there isn't a lack of initiatives and institutions to tackle these issues, we have to become better at managing big systems to achieve success in our endeavors. At the same time, we should look into new approaches like private sector participation and harnessing of indigenous knowlege to improve performance. Small farmers who are especially vulnerable to the monsoons should be focused upon and services like credit and crop insurance should be made more accessible. This will ensure that agricultural sector remains viable and caters to the country's needs.

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