

Segment- B

More crop per drop –More crop for less drop – Second and Third World Water Forum

a. Development of agriculture

I. Irrigation-crop sector- Not all is nice with rice

In order to step up food grain production from the level of about 40 lakh tonnes (2001-02) to about 54 lakh tonnes [about 10% annual growth] by 2005-06 following steps would help.

Those farmers who are willing to take up a comprehensive farming system adopting such cultural practices and produce for the market should be encouraged to go for paddy cultivation. Others may be sensitized to ***diversify to other food grains or non-food grains or cash crops or to a related sector like livestock or fisheries***. Similarly, the farmers in the flood prone areas may be weaned away by policy inducements from cultivation of paddy. When these measures are taken, it would help in attaining food security. The next stage would be to reach nutritional security. This could be achieved by educating the farmers about the use of various farm pract

ices, provision of extension services by private entrepreneurs, etc. This would lead to the economic betterment of the farmers who are engaged in paddy production in a traditional way. A chart indicating various stages leading to development of food sector over a two year horizon is given in Exhibit-3. A closer look at the irrigation –crop sector in the State would help in understanding the need for diversifying to other sectors.

Sectoral focus

Agriculture sector could be divided into two broad categories viz. Food sector [including sectors allied to agriculture] and the horticulture sector. Paddy dominates the food sector. In order to bring about change in the food sector, use of quality seeds [HYV], increase in irrigation, mechanisation, better fertilizer and water-management, etc., must be encouraged.

Studies have shown that high risk of flood and the consequential low inputs intensities characterize the stagnant yield rate of rice in Assam. According to an estimate, about 2.41 lakh ha of rice fields are chronically affected by floods. Besides, about a lakh ha are occasionally flood affected. Moreover, a large area under the standing crop quite often faces varied degree of submergence. Heavy rains during May to August cause flooding, adversely affecting the winter rice. Further, the flood wave coincides with the maturing and/or harvesting period of summer and autumn rice in many areas. This has an adverse impact on the farm income and more importantly on the food security at the household level.

The undependable input supply further accentuated the amplitude of fluctuations in area under HYV and render rice production risky. The boro paddy is an input intensive crop, where timely irrigation influences the yield pattern. With only about 10% of rice

area under irrigation, the yield of boro rice is severely constrained. This has also limited the adoption of HYV at about half of the total rice area in the State. Installation of STWs which in the recent years has facilitated the summer rice in limited areas, needs expansion. Providing assured irrigation could increase the adoption rate of HYV and insulate it from the risk of production. The Lower Brahmaputra Valley Zone [LBVZ] contributes maximum to the total rice area and production in the State while the Hill Zone [HZ] the least. However, the productivity of rice is the least in LBVZ. Frequent occurrences of flood is also considered as a major contributory factor for low productivity in LBVZ. The effect of critical interaction among the various factors is also responsible for the inter-zonal disparities. ***By raising the productivity level closer to the state average in these two zones [NBPZ & LBVZ], an additional 3 lakh tones of rice could be produced, which would potentially reduce the food deficit by over 30%.*** Given the present resource endowment of the zones, this option can easily be adopted, if necessary policy support is provided.

In Assam, among the various irrigation strategies, cost of operation of surface flow irrigation scheme has been considered relatively cheaper. However, the performance of these projects has not been encouraging due to operational problems, largely owing to non-payment of dues by farmers and lack of proper maintenance of the projects by the Government department. Similarly, operation of the electrically operated surface water schemes and deep tube well schemes were also not encouraging. On the other hand, the performance of diesel engine operated STWs through Field Management Committees [FMCs] appears to have done better. However, with the increase in the price of diesel, the farmers are finding it economically unviable to use their diesel engines to operate their STWs.

At present, the level of farm mechanization in Assam is very limited with a population of just over 6000 power tillers and 1500 tractors. There are practically no threshers, transplanters or other machinery being used in agricultural production. The need for mechanization and its role in increasing cropping intensity and crop productivity have been adequately documented the world over. With the increase in farm mechanization, Assam will be easily able to compare with the rest of the country. It is also crucial on two other fronts, viz., diversification and market access. With the support of NABARD and ARIASP, implementation of STWs programme in the state has boosted the production of rice within a very short time. However, this has also brought its own marketing problems which have to be tackled by suitable diversification of agriculture and ingenious marketing techniques.

The marketing problem is further exacerbated by the fact that there is

no system of procurement in the state either by the Government or the FCI, and hence in these difficult times, the farmer is the loser.

Rice and Fall

Even in States like Punjab, AP and MP, studies have shown that gross return on paddy [defined as the sum value of main product and value of by-product in rupees per hectare] actually fell in absolute terms. MP has moved to soya cultivation and taken a leading position in the country.

Considering the fact that paddy occupies about 70% of the gross cropped area of the State, indefinite production of rice on this scale is no longer an economically viable option and diversification into other crops particularly during the summer season has to be pursued vigorously. If diversification is to be successful, it is imperative that the farmers have some flexibility with regard to the cropping cycle. Here, mechanization coupled with additional irrigation will be of immense use for the farmers.

During Rabi Season, horticultural crops like cauliflower, pineapple, peas and other crops like ginger, turmeric and black pepper are ideally suited for production. Though, the state enjoys good productivity of these crops, the major problem is lack of marketing infrastructure and presence of middlemen, preventing the farmers from getting a better price for their produce. Hardly 2-3% of the produce are processed in the state. Though the State definitely has a role to play in building up marketing infrastructure, if adequate haulage capacity is available to the farmers through mechanization [replacing draught animal power], it will translate into immediate market access to farmers, ensuring better prices and giving a boost for diversification. Planned mechanization will help in increasing productivity, cropping intensity, diversification and easier market access would increase employment generation and the agricultural operations more sustainable.

It is estimated that Assam would require approximately 20000 power tillers and 5000 tractors within the X plan period to achieve a farm power availability of 1hp\ha in the state. But, in Assam where a large section of rural population is poor, they should be motivated to custom hire tractors/ power tillers depending upon their need for agricultural operations. They should be sensitized on the advantages of using such machinery for obtaining better productivity and higher return for their produce.