



# EXECUTIVE SUMMARY

## TITLE OF THE STUDY

### IMPACT OF GREEN REVOLUTION IN ASSAM WITH SPECIAL REFERENCE TO MANAGEMENT OF MARKETABLE SURPLUS

The Pre Investment Feasibility Study on Impact of Green Revolution in Assam with Special Reference to Management of Marketable Surplus of Agro Products has been carried out with focus on two major parameters :

- a) Assessment of Available Marketable Surplus (as a result of the Green Revolution) with Identification of Major Production Hubs and the prevailing Levels of Post harvest losses;
- b) Opportunities for Value-added Projects based on the identified surplus raw material in the state.

Assessment of Potential for setting up of Agri business projects in various parts of the state was initiated by earmarking the specific produce in surplus and their major production clusters. For this historical production data was supplemented by inputs from various stakeholders in the supply chain covering farmers, agents, transporters, private entrepreneurs and government experts to get a realistic picture at the ground level. A specially designed "walk - thru test" was planned for seeking information from the identified target groups in various parts of the state based on a detailed questionnaire. The available secondary data with the departments was analysed for the past 5 years i.e. 1995-96 till 1999-2000 to identify the major production zones for various agro produce in the state.

One of the major achievements of Agriculture in Assam has been the quantum jump in the Production of Rice (main Cereal crop), Spices, Fruits and Vegetables. Rice being the main Cereal crop has been the key crop to meet the foodgrain requirements in the state ( 95% of the total foodgrain production and 92% of the total area under foodgrain is contributed by Rice) and other Cereals like Wheat and Maize have marginal importance. The Production of 39.9 lac MT of Rice in 2000-2001 indicates the double digit growth rates over the last five decades particularly during the last two decades facilitated by introduction of HYV seeds and special initiative to promote cultivation of Summer Rice by introduction of Shallow Tube Well. Rice is mainly a Kharif crop, of which Winter (Sali) Rice occupies 17.67 lac hectares & Production of 26.93 lac tonnes and Autumn (Ahu) Rice occupies 5.48 lac hectares & Production of 5.14 lac tonnes. In Rabi crop, Summer Rice, is gaining strength due to improved irrigation facilities and occupies 2.94 lac hectares & Production of 6.54 lac tonnes. However, the threat of floods on the agriculture production remains a major untackled issue and the impressive gains in Rice production have been achieved under favourable conditions. Amongst other Cereals, Wheat and Maize with production of 0.86 lac MT and 0.15 lac MT respectively are far short of the requirements.

Pulses are mainly Rabi crops and the Production of Pulses in the state has been stagnating around 0.62 lac tonnes ( far less than the requirements) due to unfavourable soil (acidic) and climatic (prolonged rains) conditions.

Oilseeds are mainly Rabi crops ( Rape & Mustard is the main crop) and the production of

1.75 lac MT is short of the state's requirements.

Jute, one of the major fibre crops, is a distress zone for the farmers due to lower realisations and resultant falling production levels in the state. The area under jute production has also been falling due to diversion to Paddy crop by farmers, especially after introduction of STW scheme in the state.

Sugarcane, is another commercial crop, which has been affected by sickness of sugar mills in the state and resultant reduction in production figures to 11.54 lac MT.

In Spices (Ginger is the major crop contributing 60% of the total production) the production of 1.85 lac MT is in excess of the total requirements.

Fruits with 12.47 lac MT are a major surplus in the state. Banana is the main fruit with production of 5.83 lac tonnes followed by Pineapple with production of 2.08 lac tonnes and Jackfruit with production of 1.54 lac tonnes.

Vegetables with a total production of 31.33 lac tonnes are the main surplus produce in the state. Of this Rabi Vegetables are a major contributor with production of 18.48 lac tonnes.

Analysis of the district wise production data of various crops revealed that of the 23 districts in the state, 14 districts can be classified as major production clusters for various crops grown in the state. Of these 9 districts, namely, Barpeta, Bongaigaon, Dhubri, Darrang, Goalpara, Kamrup, Kokrajhar Nalbari and Nagaon were covered under the "walk thru test". Vital information was collected on the production practices, yield, varieties grown, emerging trends, grading and packaging practices, market linkages, transport modes and costs, transport bottlenecks, material movements and role of market functionaries. A major common finding in these tests was the vulnerability of the grower to external factors both relating to lack of infrastructure and powerful role of middlemen.

The study of select market prices at major market in Assam over the past five years (1997 to 2001) indicated the gaps in marketing network and price information resulting in price variations across the markets during the same period and price variations during the year in individual markets. CIC (Community Information Centres) have as yet not become effective in information dissemination and awareness about these centres was virtually non-existent amongst the farmers.

Evaluation of the share of various stakeholders in the product pricing was done through observation of material movement from farmgate to the markets. It was observed that the material followed four levels in this process and in each process the price escalation invariably benefitted the middlemen or agents. It was observed that farmers could largely get a much higher share of the consumer rupee for produce like Paddy, Pulses and Oilseeds which were relatively less perishable, were being stored by the farmers for varying periods after harvest and were not major surpluses. On the other hands farmers were facing a major problem in fruits and vegetables, which given high surpluses and perishable nature of produce, led to distress sales leaving the farmers with less than 10% share in the consumer rupee. The estimated share of the farmer in the various marketing channels remained low and the bulk of the revenue was accounted for by expenses and middlemen.

Assessment of Marketable Surplus for the last five years ( 1996 to 2000) was carried out based on the Consumption requirements of the local Population and additional requirements including losses and wastages for various produce. It was observed that the state has a deficit in production in the case of Rice, Wheat, Pulses and Oilseeds whereas it has surplus of Spices, Fruits and Vegetables. The surplus identified on the basis of secondary data were cross checked with the live situation on surplus collected during the walk thru tests and it was found that the ground situation was confirming the status of surplus. The leading districts of the state with major surplus in Spices, Fruits and Vegetables have been identified as Barpeta, Cachar, Darrang, Dhubri, Golaghat, Goalpara, Jorhat, Kamrup, Karbi Anglong, N.C. Hills, Nagaon, Nalbari, Sonitpur and Tinsukia. The existing volumes of surplus were calculated under each category.

Identification of Major clusters or Hubs for setting up of agri projects was done based on the existing surplus belts and five locations were earmarked – Guwahati (covering districts of Kamrup, Goalpara and Dhubri), Barpeta (covering districts of Barpeta, Bongaigaon, Kokrajhar and Nalbari), Tezpur ( covering districts of Sonitpur, Darrang, Nagaon and Morigaon), Jorhat (covering districts of Jorhat, Tinsukia, Golaghat, Sibsagar, Dibrugarh, Lakhimpur and Upper Assam) and Manja (covering districts of Karbi Anglong, Cachar, N.C.Hills, Karimganj and Hailakandi).

Assessment of Wastages and Losses were carried out during the walk thru test and it was observed that the losses were highest ( upto 45%) in Fruits and Vegetables, followed by Spices like Ginger ( upto 37%) and on the lower side for Cereals, Pulses and Oilseeds ( upto 16%). It is estimated that approximately Rs 1,200 crores worth of Food grains, Spices, Fruits and Vegetables are lost by Assam every year. Pareto analysis of the losses was carried out to identify the major causes of these losses for various crops.

The Projections for Production for the next ten years (2001 to 2010) have been worked out based on the analysis of the existing growth rates in Area

and Yield, inputs collected during the *walk thru* test and the initiatives planned by the State Government for various crops in the next Plan period. The calculation of available surplus based on the production projections revealed that the existing trend of surplus continues – Rice, Wheat, Pulses and Oilseeds will be in deficit whereas Spices, Fruits and Vegetables will create a big surplus in the state.

Assessment of Existing infrastructure facilities in the state revealed major shortcomings in basic facilities like linkages, power supply, markets, storage facilities and processing units.

The difficulties and bottlenecks faced by the existing entrepreneurs in running of Cold Stores and Food Processing units were tabulated for problem solving.

In the Solution Assessment, strategies were framed out for setting up of agri projects in the state based on a SWOT analysis. Use of modern technologies for reduction of wastages has also been planned to enhance the available surplus of raw materials in the state. Lastly, Products and Projects were identified to create value-addition to the large surplus available in the state.