

# **Accelerated Agricultural Progress & Poverty Elimination in Jharkhand**

1. Jharkhand is blessed with abundant natural and mineral resources as well as a cheerful and hard working human population, mostly of tribal families with a rich cultural heritage and traditional knowledge. Out of a total geographical area of 7.9 million ha, nearly 2.6 million ha are cultivated, while 2.3 million ha (29% of total area) are under forests. The area under assured irrigation is less than 10 percent. Out of a total population of 27 million, 21 million (78%) live in villages, while about 6 million (22%) reside in urban areas. Nearly 49% of the population lives below the poverty line. Rural poverty is greater than urban poverty. The most important rural professions are crop and animal husbandry, fisheries and agro-forestry. Nearly 67% of the total labour force is dependent on agriculture for their income and work security.
2. Out of the 22 districts of State, Gumla and Simdega districts have more than 85% of the total workforce engaged in agriculture. The State falls under agro-climatic region VII, known as the Eastern Plateau and Hill region. Average annual rainfall varies from 1300 mm to 1400 mm, nearly 80% of which is received during the SW Monsoon (June to September). There are two river systems in the State, Damodar and Swarnarekha, but most of the agriculture is rain dependent. Most of the farm families fall under the category of small and marginal farmers, with nearly 83% of the operational holdings below 2.0 ha.
3. About 92% of the cropped area is under paddy, wheat, maize, pulses and oilseeds (Niger, linseed and mustard). The productivity of crops is low and the deficit with reference to demand and supply is as high as 52% in the case of cereals, 65% in the case of fruits, 51% in the case of milk and 34% in the case of fish. Only one crop is taken during the kharif season in most parts of the State and current fallow and other fallow lands contribute 2.0 million ha (about 25% of the area). It is thus clear that accelerated agriculture development holds the key to poverty eradication and employment generation in the State.
4. The Government of India placed in Parliament, in November 2007, a National Policy for Farmers which calls for a paradigm shift from a purely commodity centred approach to agricultural development to a human centred approach. The policy calls for 'improving the economic viability of farming by substantially increasing the net income of farmers and to ensuring that agricultural progress is measured by advances made in this income'. The economic wellbeing of the farming family should become the major goal of agricultural development strategies and programs. Only then, we will be able to eradicate the pervasive poverty and malnutrition prevailing in the country. The Government of India has also initiated the following programs for strengthening the farmers' livelihood and income security:

- Bharat Nirman, with special emphasis on rural roads and additional irrigation covering 10 million ha.
- National Rural Employment Guarantee Program
- National Horticulture Mission
- Expansion of institutional credit to farmers
- Establishment of a National Rainfed Area Authority
- Establishment of a National Fisheries Development Board
- Watershed Development and Micro-irrigation program
- Reforms in Agricultural Marketing and Development of Market infrastructure
- Agribusiness development through venture capital participation by the Small Farmer Agribusiness Consortium (SFAC)
- Reform and support for Agriculture Extension Services
- National Food Security Mission
- Rashtriya Krishi Vikas Yojana
- Integrated Food Law
- Legislative framework for Warehousing Development and Regulation
- National Bee Board
- National Bamboo Mission
- Knowledge connectivity through Gyan Chaupals
- Protection of Plant Varieties and Farmers' Rights Act (2001)
- Biodiversity Act (2002)

All the above programs are relevant to Jharkhand and effective use should be made of them. There are many other schemes of the Ministries of Food Processing and Rural Development which are also important for ushering in an era of agrarian prosperity. The Rural godowns and warehouses schemes as well as the Scheme to establish Agro-processing Parks are particularly relevant.

5. Prof. M.S. Swaminathan, MP, Ms. Mabel Rebello, MP and Dr. Suman Sahai, President, Gene Campaign, visited Jharkhand at the invitation of the State Government from 19 to 22 December, 2007 to study the agricultural situation and offer suggestions for using accelerated agricultural development as the key to poverty eradication. Broad based consultations were held with officials, scientists, farm women and men, representatives of financial institutions and civil society organizations as well as field administrative and technical staff. Our particular thanks go to Sri P.P. Sharma, Chief Secretary, Sri A.K. Sarkar, Principal Secretary Agriculture, Dr. N.N. Singh, Vice Chancellor, Birsa Agriculture University, Smt. Aradhana Patnaik, Deputy Commissioner, Gumla district, Shri B.R. Ambastha, Deputy Commissioner, Simdega district and Neil Tirkey, MLA, Simdega for sharing their valuable insights and experience with reference to the agriculture of Jharkhand.

Gumla and Simdega districts were selected for visits and detailed studies since they have the greatest pressure of population on land as well as over 76% of the population below the poverty line. Based on the field visits and the consultations held, we suggest the following

seven point Action Plan for speeding up agricultural progress and bringing agrarian prosperity. A vital requirement for ensuring speedy progress in rural prosperity is the improvement of rural roads and communication, irrigation and rural electrification. The State Government should fully utilize the funds available under Bharat Nirman for this purpose.

### **SEVEN POINT ACTION PLAN FOR ACCELERATED AGRICULTURE PROGRESS LINKED WITH AGRARIAN PROSPERITY**

The average productivity of paddy (1832 kg/ha), wheat (1204 kg/ha), oilseeds (574 kg/ha), maize (1204 kg/ha) and pulses (597 kg/ha) is low. Most of the cultivated area of 2.12 million ha is under a single crop during the months of June to September. Farmers are idle from September to May and men usually migrate to other cities or other states in search of jobs. The National Rural Employment Guarantee Program will help to alleviate this situation to some extent. The agriculture production strategy should be three pronged, consisting of:

- Improve the productivity of crops during SW Monsoon period
- Introduce a second crop which is high value but with low water requirement during the Rabi season from November to April
- Create opportunities for multiple livelihoods through crop-livestock integrated farming, poultry rearing, lac production, sericulture (both tussar and mulberry), mushroom cultivation, floriculture, vegetable production and agro-processing, all based on assured linkages to markets.
- The following seven steps adopted in an integrated manner based on a system or symphony approach will help to achieve the above goals.

#### **(a) Land use and Soil Health Care**

Conservation farming should be the pathway to sustainable advances in productivity and profitability. There is need for providing farmers with Soil Health Cards, which provide information on the physics, chemistry, microbiology and erosion susceptibility of the soils. The status of soil organic matter content, micronutrients (boron and zinc) and macro-nutrients (N,P,K) as well as soil pH will have to be indicated on the Soil Health Card. Since most of the Jharkhand soils are acidic, ameliorative measures like lime application and micro-nutrient application will have to be recommended. In addition, soil organic matter content will have to be improved through composts (vermicompost etc.) and farmyard manure. By restructuring the methodology of delivery of government support in the form of subsidy (direct payment to farmers rather than through fertilizer companies), it will be possible for farmers to buy the needed micro and macro-nutrients in a manner that promotes balanced fertilization. Modern Soil Testing Laboratories should be established in every district with funds from the Rashtriya Kisan Vikas Yojana.

Land use advice for the second crop should be based both on assessment of water availability and market demand. The cost-risk-return structure of farming should be kept in view while offering advice on cropping patterns. Wasteland and fallow land development will also need appropriate advice on soil health enhancement. Thus soil health advice

should cover both cultivated land and waste and fallow land. More phosphorus will be needed for pulses and oilseeds, balanced nutrients as well as irrigation water.

### **(b) Jal Swaraj**

Water security is necessary both for agriculture and domestic needs. Several programs are already underway for watershed management. Pani Panchayats will have to be set up with the help of Gram Sabhas for the sustainable and equitable use of the available water.

Action on the setting up of Pani Panchayats should be included under the Panchayati Raj rules. A second crop can be taken both by saving water in farm ponds and wells during the SW Monsoon period and by the judicious use of groundwater through tube wells from November to April. Fortunately, the groundwater availability is good in almost all districts. In view of the shortage of electricity, diesel and solar pumps should be provided along with manual treadle pumps which are effective for small land holdings. Lift irrigation from Tanks and rivulets should be facilitated. The Pani Panchayat should be assisted with the science and art of rainwater harvesting and aquifer recharge as also with the sustainable management of aquifers and stored water. Equity in the sharing of harvested water is essential to ensure cooperation in water saving.

Watershed management should be linked to the use of the water for growing high value crops like medicinal plants, vegetables, flowers etc. as well as for seed production, which can provide opportunities for microenterprises based on micro-credit. If this is done, they will become Bio-industrial watersheds. The emphasis should be on more income and employment per unit water.

In order to expose farmers to successful Jal Swaraj programs, visits of men and women farmers can be arranged to successful water conservation programs as in Hiware Bazar Panchayat in Ahmednagar district of Maharashtra (Sarpanch Sri Popatrao Pawar), Alwar in Rajasthan (Sri Rajendra Singh) and Dahod in Gujarat. The first National Water Prize awarded by the President of India in September 2007 went to the Hiware Bazar Panchayat. With much lower rainfall than in Jharkhand, Hiware Bazar farmers are taking 2 to 3 crops a year. As a result, there is nobody below the poverty line in the village. Farmer to farmer learning is the most powerful method of motivating farmers.

### **(c) Redit and Insurance**

Credit and insurance literacy needs to be strengthened. Every farm family may be issued an Entitlement Passbook which lists all the government schemes (including credit and insurance schemes) available to them. Kisan Credit Cards should be issued to Mahila Kisans, even if there are no joint pattas with reference to land ownership.

### **(d) Technology, Technoinfrastructure, Training and Inputs**

Technology is the prime mover of progress. Since a vast majority of farmers in Jharkhand are poor, the technologies proposed should be in the low risk and high income category. The agro-biodiversity of Jharkhand should be conserved both through in situ and ex situ methods. The Seed-Gene Bank methods of conservation promoted by the Gene Campaign

should be extended to more crops and areas. Native breeds of poultry and cattle should be preserved. Crop-livestock integrated production system will help to promote organic farming which will be valuable across a range of crops. Certification for organic products should be introduced. Collections of landraces of rice in Seed Banks available with Gene Campaign, BAU and NBPGR should be analyzed for identifying speciality rices like aromatic and medicinal rices. Many traditional rice varieties with properties to withstand drought and higher temperatures will be valuable to breed varieties to cope with Global Warming and Climate Change. Birsa Agricultural University and ICAR institutes should undertake this task. In the case of potato, the True Potato Seed (TPS) method adopted in Orissa may be popularized to ensure that young plants are disease free. Quality protein maize (QPM) will help to increase the productivity and quality of poultry products. Fortunately good QPM varieties are available in the Birsa Agricultural University.

Scientists should adopt participatory breeding and knowledge management procedures in order to combine traditional wisdom and ecological prudence with modern science. A pro-nature, pro-poor, pro-women orientation is necessary in technology development and dissemination. The best in modern communication and information technology, biotechnology, space technology, renewable energy technologies and other methods of technological upgrading of small farm agriculture should be adopted in order to make farming both intellectually satisfying and economically rewarding. Without such an approach, it will be difficult to attract and retain educated youth in farming. Agro forestry will help to combine both long term environmental benefits with meeting short term requirements of food and fodder. Green agriculture involving integrated pest management and integrated nutrient supply needs to be popularized. Training in conservation/sustainable agriculture needs to be intensified. In the case of Organic and Green agriculture, certification agencies should be set up by the State to make certification affordable for small farmers.

For use under the Horticulture Mission, good quality planting material and seeds should be produced. This holds true for Jatropha and other economically useful plants.

#### **(e) Post Harvest technology, value addition, storage and marketing**

At present there is a mismatch between production and post-harvest technologies, with the result that neither producer nor consumer get the full benefit from production. Avenues for non-farm employment can also be created only through attention to processing, value addition, storage and marketing. This is particularly important in the case of perishable commodities like milk, meat, eggs, vegetables and fruits and flowers. Krishi Vigyan Kendras should be developed into Krishi and Udyog Vigyan Kendras, by adding a wing for post-harvest technology. A Vidya Dairy may be established modeled along the one in Anand, Gujarat. The Vidya Dairy will help to impart training in all aspects of dairy farming as well as milk processing and value addition. In general the training and capacity building programs should adopt an end to end approach, including concurrent attention to conservation, cultivation, consumption and commerce or what is sometimes called the Farm to Fork approach.

Trade and Quality Literacy are particularly important. Educated youth can be enabled to establish Agri-clinics and Agri-business Centres with support from NABARD. Home Science graduates can be assisted in establishing Health and Nutrition Gardens to provide home remedies for the major nutritional and other simple maladies prevalent in the area. Above all, safe storage and sanitary and phytosanitary measures are important. Advantage may be taken of the Rural Godowns and Warehousing schemes of the Government of India. Such safe storage facilities should be established in every block.

#### **(f) Organisation and Management**

This program should lead to a small farm management revolution. This will be possible only if steps are taken to provide the power of economy and scale to the 80% of the farm families belonging to the small and marginal farm categories. The methods adopted for this purpose could vary from contract farming (with safeguards), cooperative farming and group farming by SHGs leading to a win-win situation for producer and purchaser, farmers' companies and Small Holder Estates which provide centralized services like farm implements and machinery to support decentralized production. The choice of the method adopted to mobilize the power of partnership could be based on the preference of the stakeholders. Computerised accounting software may be provided to ensure transparency in the maintenance of accounts. A training of trainers' program for women should be organized.

#### **(g) Monitoring and Evaluation**

This should relate to both ecology and economics. In the area of ecology, the impact of more diversified and intensive agriculture on land, water and biodiversity will have to be monitored. From the economic angle, the main criteria should relate to a reduction in poverty and malnutrition. The aim should be to ensure that there is nobody below the poverty line by 2015. A gender audit will also have to be done, in view of the very significant role of women in Jharkhand's agriculture.

#### **Resources**

As mentioned earlier there are a large number of Central Government Schemes which can be utilized for implementing the Agrarian Prosperity program. In addition, the resources of NABARD, financial institutions and the corporate sector under their Corporate Social Responsibility (CSR) initiatives can be mobilized. Technical rather than financial resources may be the major constraint. Peripatetic teams of inter-disciplinary experts may have to be organized. In order to develop an integrated data base on all available technical and financial resources relevant to this program, a senior officer may be assigned whole time to function as Principal Coordinator (Resource Mobilization). This Officer's main duty would be to harness the funds available from all GOI schemes, from financial institutions and from the private sector, and to ensure the effective implementation of the program.

We wish to emphasize that the internal security of Jharkhand can be strengthened only through greater attention to the work and income security of the rural population through accelerated agricultural progress and rural communication and electrification. Opportunities for rapid agricultural progress are great. Progress will however depend on the fusion of

political will and action, professional skills and people's participation, Let 2008 mark the beginning of an era of cheer and hope for rural Jharkhand.