Sustainable Development of Agriculture

Integrated Basin Development and Livelihoods Programme

Meghalaya Basin Development Authority

Government of Meghalaya

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1.1. Background

Sustainable agriculture development integrates three main goals--environmental health, economic prosperity and livelihood sustainability. In other words, sustainability rests on the principle that we must meet the needs of the present without compromising the ability of future generations to meet their own needs. Therefore, *stewardship of both natural and human resources* is of prime importance. Stewardship of human resources includes consideration of social responsibilities such as working and living conditions of farm families, the needs of rural communities, and consumer health and safety both in the present and the future. Stewardship of land and natural resources involves maintaining and/ or enhancing this vital resource base for the long term.

Agriculture in India has a significant history. Today, India ranks second worldwide in farm output. Agriculture and allied sectors accounted for 14.2% of the GDP (at constraint prices of 2004-05), 58 % of the employment (as per 2001 census) and despite a steady decline of its share in the GDP, is still the largest economic sector and plays a significant role in the overall socio-economic development of India. Moreover, this sector is a supplier of food, fodder, and raw materials for a vast segment of industry. Hence the sustainable development of Indian agriculture is considered to be a necessary condition for “inclusive growth”. In the process of agricultural development, the adoption of modern technologies have had many positive effects and reduced many risks in farming, but there have also been significant costs. Prominent among these are top-soil depletion, groundwater contamination & depletion, environmental degradation, decline in farm sizes, continued neglect of the living and working conditions for farm households, increasing costs of production, and the disintegration of economic and social conditions in rural

communities. Hence, a growing movement has emerged during the past few decades to question the role of the agricultural establishment in promoting practices that contribute to these crucial problems.

More recently, the rural sector (including agriculture) is being seen as a potential source of domestic demand, a recognition that is even shaping the marketing strategies of entrepreneurs wishing to widen the demand for goods and services. However, the share of gross capital formation (GCF) in agriculture and allied sector in total GCF has remained almost constant (2.6 %) over the years. There is need to step up investment in agriculture significantly, both by the private and public sectors to ensure sustained target growth of 4 per cent per annum.

Meghalaya state in North Eastern region presents a paradoxical picture of economic backwardness amidst plenty. Despite being endowed with vast natural resources and abundant bio-diversity, the state has largely been bypassed in the developmental process in the past, the results of which are increasingly explicit in terms of low agricultural productivity and rampant poverty as more than one third of population is below poverty line. Inclusive growth with a focus on poverty reduction, employment generation and livelihood provision is highlighted by the Planning Commission, Government of India in the Approach Paper for the 12th Plan. Keeping this in view, the Government of Meghalaya have planned a massive programme entitled "*Integrated Basin and Livelihood Development Programme*" to be implemented during the 12th Plan period. The programme mainly aims at promoting optimal and effective development and utilization of the State's natural resources to ensure livelihood security and inclusive growth within the framework of sustainable development. A notable feature of the programme is that it would included relevant mission mode interventions in the fields of Sustainable Agriculture, Horticulture, Forest and Plantation crops, Aquaculture, Livestock, Sericulture & weaving, Apiculture, Energy, Water, Tourism Knowledge Management, etc. The core objective of these missions is

to facilitate promotion of sustainable livelihoods for the people leveraging on the opportunities and strengths of the State's natural resources. The Programme seeks to provide an enabling framework for uplifting the socio-economic condition of the people which will ultimately raise the Gross Domestic Product (GDP) of the State. The Programme seeks to achieve this by strong entrepreneurship and capacity building with the pro-active involvement of the communities which is ultimately expected to empower the common man.

Sustainable development of Agriculture is one of the major thrust of the mission. Meghalaya is basically an Agricultural State with about 80% of its total population depending entirely on agriculture and its allied sector for their livelihood, but the state has also been experiencing distorted growth in this sector. Vast potential of state agriculture is contrasted by the low levels of productivity and entrepreneurship. The productivity of most of the field crops is much lower than the national averages, which determine the threats for food and nutritional security in the state. This warrants the necessity for an integrated approach and renewed initiatives for convergence while undertaking sustainable agricultural development and natural resources management. The Meghalaya Basin Development Authority would provide leadership and support to the various missions and facilitate platform for convergence and co-ordinated action. The Programme and Missions under the Integrated Basin Development and Livelihood would facilitate Participatory Integrated approach for the sustainable development of agriculture and its allied sector to meet the growing demand for food and nutrition security, and livelihood sustainability of rural households.

1.2. Status and Prospects for Sustainable Development

Meghalaya is predominantly an agrarian economy. Agriculture and allied activities engage nearly two-thirds of the total work force in Meghalaya. However, the contribution of this sector to the grass state domestic product

(GSDP) is only 17.84 per cent. Agriculture in the state is characterized by low productivity and unsustainable farm practices, giving rise to a high incidence of rural poverty. A substantial portion of the cultivated area is under the traditional shifting agriculture known locally as “Jhum” cultivation. As a result, despite the large percentage of population engaged in agriculture, the state is still dependent upon imports from other states for most food items such as meat, eggs, food grains etc. Infrastructural constraints have also prevented the economy of the state from growing at a pace commensurate with that of the rest of the country.

The total geographical area of the state is reported to be 2.24 million hectare, of which about 10 per cent (about 0.22 million ha.) is brought under cultivation. However, the total cropped area has not been changed much and remains 0.27 million ha (12 per cent of the reported geographical area). This is an indicative that very small fraction of cultivated land is put under more than one cropping, whereas state agriculture is still continuing predominantly mono-cropping system. Food grains productions dominate the cropping system of the state, accounting for over 60 per cent of the total crop area in the state. The production of food grains is over 230 thousand tonnes. Rice being the major food grains occupying 80 per cent of the food grain production with an average yields of only 1.89 tons per ha in the state. Other important food grain crops are maize, wheat and a few other cereals and pulses, which average yields are also lover than national average. Rapeseed and mustard, linseed, soybean, castor and sesame are the important oil seeds grown in the state, accounting for well over two-thirds of the oilseed production of nearly 6.5 thousand tonnes with low realisation of yields, ranging from 0.55 ton to 0.68 ton per ha. However, the demand and supply equation shows that demand for food out strips the production and the gap is increasing over time. Most disturbing fact is that if the present scenario of adoption of agricultural technology continue, it will be difficult to catch up with required rate of productivity to meet the demand of food arising from the growing population.

The existing yield gap between potential yield and average yield is estimated to be about 72 per cent in autumn rice and 62 per cent in winter rice. The situation of wheat, maize and other crops are almost the same. In order to achieve self-sufficiency in food-grains, can easily be achieved if necessary policy support systems gear up to bridge the gaps.

Fibre crops such as cotton, jute and Mesta had traditionally been among the cash crops and grown almost exclusively in Garo Hills, the productivities of these crops reported to be as low as 0.13 ton/ ha of cotton, 0.82 ton/ ha of Mesta and 1.58 tons/ ha of Jute, which are much lower than the national average productivities. These have however been losing their importance in recent years. Climatic conditions in Meghalaya also permit a large variety of horticulture crops including fruits, vegetables, flowers, spices and medicinal plants. These are considered to be higher value crops but traditional values and food security concerns have prevented farmers at large from embracing these crops.

1. Despite being endowed with vast natural resources and abundant bio-diversity, the state has been experiencing distorted growth in agriculture and its allied sector. The vast potential of agriculture of the Meghalaya state is contrasted by the low levels of productivity and entrepreneurship. The productivity of most of the field crops is much lower than the national averages, which determine the threats for food and nutritional security in the state. This calls for special attention to look into an integrated approach for the development of agriculture and its allied activities to help in achieving the food and nutrition security and livelihood sustainability. Watershed development, micro-irrigation/Sprinkler, supply of quality seeds of improved cultivars and planting materials, promotion of allied enterprises/activities, development of appropriate rural infrastructures, land reforms, market reforms, backward and forward linkages with corporate/plantation agriculture, peoples Institutions (traditional knowledge, self-help groups, farm management committee are the some suggested policy interventions to be undertaken by the Integrated

Basin Development Mission for achieving the food and nutritional security and livelihood sustainability of rural households.

1.3. Objectives:

i. Identify and prioritize constraints, and schematize strategic action plans for conservation of natural resources, enhancement of agricultural production, promotion of traditional food crops, value addition and marketing of produce,

ii. Formulate action plan for intercropping under plantation crops to earn livelihood during gestation period of plantation crops,

iii. Promote double cropping with legume and/ or vegetable crops to realise the benefits of additional earning, nutritional security and improved soil fertility,

iv. Implement action plan involving local and various other stakeholders,

v. Facilitate technical and material supports and regular monitoring of programme implementation and mid course review, and

vi. Assess the impact of the program on livelihood status of the rural household.

1.4. Strategic Action Plans/ Conceptual framework:

1. ***Production Enhancement-Transfer of Production Technologies*:**

   Promotion of soil & water management, high yielding cultivars, improved agronomical practices, plant protection measures, diversification of enterprises and risk aversion technologies.

2. ***Nature and Environment-Conservation Technologies:***

   Conservation and promotion of natural resources, eco-system, integrated farming system, traditional food crops and native culture.

   Reform water management institutions and design water pricing system on the basis of water rights to cope with increasingly scarce water supplies to various activities- drinking, agriculture, fisheries and other activities.

3. ***Postharvest and value addition- Transfer of Technologies****:*

Promote improved harvesting process, drying & storage of farm produce, value addition of traditional and non-traditional food grains through efficient processing systems, grading and packaging, etc.

4. ***Dissemination of marketing information-input and output:***

Exploration of potential markets (domestic and external), simplified and collective marketing system, expanding marketing network, maintaining differential prices, improve easy accessibility to financial institution and provide efficient transportation system for farm produce.

Capital formation-Investment

Promote pro-poor rural and agricultural development through increased investments in rural infrastructure, capacity building and innovative activities through public-private partnership,

Exploit new opportunities to private participation in the production and marketing of high value farm products (food crops, oilseeds, fibber crops, vegetables, fruits, livestock products, fish and fishery products through capacity building.

1.5. Rational:

- Generating newer avenues for income generation, skill development and employment opportunities in order to reduce regional imbalances in the state,
- Empowering Rural households in general and rural women particularly for their better livelihoods through knowledge dissemination,
- Increased productivity and value output of crop enterprises, leading to food and nutritional security,
- Developed entrepreneurship, increased value addition and reduction in post harvest losses through technological dissemination ,
- Enhanced economic welfare livelihoods of households through capacity strengthening and increased employment potential in rural area,
- Sustainability of production and environment through resource conservation and better management, and
- Dissemination of information on use of science/ technologies for livelihood sustainability.