Need for Organic Farming Strategy in Manipur

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Concept of Organic Farming

Organic farming is a holistic production management system based on basic principle of minimizing the use of external inputs and avoiding the use of synthetic fertilizers and pesticides to ensure sustainability of agriculture.
Organic agriculture finds reference only in one place under the chapter "Sustainable Agriculture". The history and traditional knowledge of agriculture, particularly of tribal communities, relating to organic farming, preservation and processing of food for nutritional and medicinal purposes is one of the oldest in the world. Concerted efforts are being made to pool, distill and evaluate traditional practices, knowledge and wisdom and to harness them for sustainable agricultural growth.

Advantage of using organic farming

1. Increase availability of nutrients, specially nitrogen and phosphorus
2. Can replace 25-30% chemical fertilizers
3. Increase farm productivity. Generally 10-40% in grain yield and 25-30 in vegetative growth
4. Activate the soils biologically, thereby increasing natural fertility in soil.
5. Help in decomposing plant residues, thereby improving C/N ratio of soil, improving soil texture and structure, increasing water holding capacity.
6. Help in stimulating plant growth in general and roots in particular as they secrete various growth hormones, providing better nutrient uptake and increase tolerance toward drought and moisture stress.
7. Some manuring organisms also secrete some fungitic and antibiotic like substances which reduces the incidence of certain diseases and increase disease resistance.

Relevance of Organic Farming in Manipur

Manipur is characterized by certain features which may be seen as major constraints to development, but which can be used to the advantage of the region in the globalised economic scenario. The low input intensity of agriculture of the state makes it ideally suited for organic cultivation. By capitalizing on the organic and eco-friendly nature of agricultural and horticultural produce of the state, significant gains may be achieved in the burgeoning market for organic products.

Manipur falls under the Eastern Himalayan agro-climatic zone with two broad topographic divisions viz., plains and hills. The valley is often referred to as the "Rice Bowl" of

the state. Manipur is within the monsoon belt of the country with sub-tropical to semi-temperate climate in the valley and semi-temperate to temperate climate in the higher altitudes. It has a predominantly agricultural economy. Agriculture is the main occupation of the people and rice (*Oryza sativa* L.) is their staple food. Sustainable agriculture is an essential prerequisite for rural development in the state. Sustainability requires systems which are environmentally sound, economically feasible and socially acceptable.

Manipur is characterized by several peculiar features that constitute its limitations and strengths and that have important bearing on the adjoining plains too. These ecological relations tend to drastically limit the choices available to the hill systems in terms of technology and products and this may be looked essentially as a form of service rendered or a cost borne by the hill people. The region has remarkable advantages of fertile and organically rich soils, ample rainfall and water resources, river valleys, swamps and streams and great climatic diversity supporting diverse cropping possibilities. On the other hand the slopes and heavy rain make soil matters unstable and acidic and conditions favorable to rapid vegetative proliferation make agriculture and land management tedious and highly labour intensive process. Given the extensity of geographical area relative to population, the forested and sloppy terrains and the land rights, the farm size could even incorporate an element of choice. Irrigation intensity is low as the mountain terrain has somehow made it difficult to exploit the ground water potential and in most sources other than canals and wells supply most of all the irrigation water.

Table 1: Area, Production and Yield of rice by Type of Cultivation

Year	Area under Rice ('000hectares)					Production ('000MT)		Yield (kg/ha)	
	Valley	Hill			Manipur Total				
	Perma-nent	Permanent Jhum				Valley	Hill	Manipur	All-India
2001-02	91	29.2	42.5	(26.1)	162.6	249.4	137.9	2382	2086
2002-03	80.38	29.55	43.18		153.11			2192	
2003-04	80.78	35.26	41.79		157.83	226.95	154.29	2416	

Note: Figure in parenthesis indicated percentage of Jhum area to total area cultivated under rice
Source: RCES (various issues) & SAM 2004

Table 2: Agro-Economic Indicators of Manipur

State	Aver. farm size (ha)	Crop area irrigated (%)	Fert. Inten. sity NKP (kg/ha)	Popn. Density / sq km.	Forest/ Repo. Area (%)	NSA/ Geog. Area (%)	Cropping Pattern percentage of Gross cropped area				
							Rice (%)	Maize (%)	Pulse/ oilseeds (%)	Fruit (%)	Vegetables (%)
Manipur	2.2	34.7	105	107	27.2	6.3	76.3	1.4	4.3	3.9	14

Source: RCES (various issues) & SAM 2004

Table 3: Distribution of agricultural land over districts of Manipur (in hectares)

District	Area	Agri. Land	Water logged area converted to new agri. Land	Total agri. land	% of agri. Land to total area
Valley					
Thoubal	51400	21496.50	1470.50	22967	44.68
Bishnupur	49600	26138.60	-	26138.60	52.70
Imphal*	122800	60616	267.60	60884.40	49.58
Total	223800	108251.90	1738.10	109990	49.15
	(10.02)			(73.18)	
Hill					
Senapati	327100	11101.82	-	11101.82	3.39
Tamenglong	439100	6907.89	-	6907.89	1.58
Churchandpur	457000	9675.02	-	9675.02	2.12
Chandel	331300	6192.82	-	6192.82	1.87
Ukhrul	454400	6442.92	-	6442.92	1.42
Total	2008900	40320.47	-	40320.47	2.00
	(89.98)			(26.82)	
Manipur	2232700	148572.62	1738.1	150310.72	6.73
	(100)				

*Combined figure of Imphal-East & Imphal-West.
Source: MRSAC

The agro-ecology and the social customs of this region differ from the rest of the country and land scarcity does not appear to be the binding constraint in agriculture so much as the ability to make gainful use of available land. There is a need for careful planning out alternative and suitable strategies for the development of the region that takes full view of the strengths and limitations of agro-ecology, the market potentials of the emerging era and above all take account of the crucial interactions amounting to externalities of the hill activities with the ecology of the country.

Manipur is one place where the farmers are still using different varieties of chemical fertiliser and pesticide inspite of the blanket ban imposed on use of these harmful chemicals all over India since 1988. Use of chemical fertilizers in agriculture enhances yields but also undermines the quality of life through possible contamination of soil, water and air and even the final products that retain their residues. Excessive application of pesticides and fertilizers has caused damaged to the soil and environment. Pesticides residue is the second largest agent causing cancer, next to cigarettes. Besides pesticides and fertilizers residuals that persist in the soil are harmful to the beneficial soil microorganism and earthworms thereby resulting in degradation of soil fertility. Fertilizers have a short term positive effect on productivity but a long term negative effect on the environment where they remain for years after leaching and running off, contaminating ground water and water bodies. As far as the cost of fertilizer is concerned, its trouble will worsen. Per hectare consumption of fertilizers has increased from 69.8

kg in 1991-92 to 113.3 kg in 2006-07 at an average rate of 3.3 per cent. A bag of Diammonium Phosphate today costs Rs.490 officially. In black, it sells for around Rs.600-700.We stepped up the use of chemical fertilizers and pesticides. Lakhs of farmers are shifted to a much higher –cost economy where costs are crippling.

Inspite of this, the state has retained traditional practices and shows an inclination towards organic agriculture that can be harnessed for the development of the state with ecological benefits. Such activities in this state can have external effects on other regions as well. It is a well-known fact that the fertilizer based technology of the green revolution and the much promoted growth oriented strategy pursued in agriculture has so far proved to be inappropriate for several agricultural systems in the developing world including India. It is evident that farmers of the state are accustomed to cultivating the land with traditional practices using mostly organic manures like farm-yard manure, crop residue etc. It may be noted that apart from Central Government, five states have their state policies on organic farming this includes Gujarat, Maharashtra, Karnataka, Madhya Pradesh and Uttaranchal. Andhra Pradesh is in the mid of drafting process. Moreover, Himachal Pradesh has initiated a state level project on organic farming. The North-Eastern states had also prepared an elaborative plan for organic farming promotion. One of the major problems being faced in the study on organic farming activities in the state is the absence of reliable database on production. The state government is not maintaining the reliable data on organic farming though the state has great potential in the organic farming. Some NGOs are actively engaged in this field.

There is a need for careful planning out alternative and suitable strategies for the development of the state that takes full view of the strengths and limitations of agro-ecology, the market potentials of the emerging era and above all take account of the crucial interactions amounting to externalities of the activities with the ecology of the country. The largest share of crop enterprises and that of the crop area too is devoted to purely traditional method based on non-use of external soil fertilization followed by another traditional method of organic farming with manure. Use of fertilizer is the least prevalent of practices adopted more commonly by the smallest size class of farmers. However the practice accompanies greater ownership of farm assets and access to irrigation, which is itself a scarce resource in hill agriculture. The fertilizer using enterprises also constitute those using other modern technology including chemical pesticides.

Organic farming is however positively associated with ownership of livestock, and the effect of this resource increases for smaller farm size classes. Coarse cereals and fodder and vegetable are preferred crops for the organic practice while oilseeds, pulses, mixed crops and fruits are preferred for the purely traditional method. Rice and sugarcane are crops likely for use of fertilizer. Considering the ecology, the possible adverse effects of most modern methods in industry and agriculture on the plains, its abundance of difficult yet fertile tracts of land, its tribal customs of land tenure, its economic strength in terms of livestock ownership and limitations of terrain and irrigation, organic farming seems as a promising avenue to development of the state. The naturally evolved technology practice can be guided to follow a more organized course for greater benefit in national and international markets.

Empirical analysis also reveals the relative potentials of vegetables and fodder in the line. The advantages that these crops also have in recycling wastes directly into crop bio-mass or indirectly through animals suggest a synergic relation that can be tapped. The practice being preferred against the modern method by the classes less endowed in scarce resources such as farm assets and irrigation makes the strategy a powerful instrument to combat poverty. At the same time livestock and vegetable products promote value addition through processing activities and promotion of systematic organic farming and food processing can help in drawing investment which will enable meaningful participation of the labour force with gender equity and integration of the region with outside economy while retaining indigenous characters that deserve conservation. The strengths of the region lie in its serenity, naturalness and traditions and translate to external benefits to people on the plains through lesser ecologically adverse spill-over's and the existence of natural beauty, placidity and prosperity in the neighbourhood. This in essence in a service rendered by this region to the nation where varied modern technology may be used for economic development.

Concluding Remarks

Organic farming responds positively to all sustainable agriculture and rural development objectives and helps in maintaining soil fertility to improve crop production and socio-economic conditions of the farmers. One of the biggest rewards of organic farming is healthy soil that is alive with beneficial organisms. These healthy microbes, fungi and bacteria keep the harmful bacteria and fungi that cause disease in check. Properly managed organic farming reduces or eliminates water pollution and helps conserve water and soil on the farm thereby enhances sustainability and agro-biodiversity. Commitment to nature protection is a pre-requisite to organic farming.

Considering the special nature and location of the state of Manipur, emphasis should be on introduction of organic farming, use of bio-fertiliser and organic manure in these areas which in turn could be advantageous for export. Efforts are required for promotion of organic sources of plant nutrients.. The state has comparative advantage because of the vast cultivated area, which has remained free of contamination from chemicals, spread over distinctly varying agro climatic conditions, for example, large area in this region with very low or zero use of agro chemicals, can be instantly converted to organic farming. Farmers of the state often use organic manure as a source of nutrients that are readily available either in their own farm or in their locality. There is, indeed, enormous scope of adopting organic farming systems in Manipur with special emphasis on rural and urban composts, crop-residue, legumes, bio-fertilizer etc. The people of the state demands resources and policy attention to attain development in ecologically compatible way and call for careful planning in harnessing the potential of the region and market. The cost of inputs in agriculture is increasing day-by-day; land holdings are simultaneously decreasing making agriculture unviable for majority of farmers. Baring some big few farmers, almost all are caught in the debt trap and are unable to repay their loans. The land is mortgaged with the moneylenders, who sometimes use hard tactics for recovery. Farmers live in the fear of losing their lands. To accomplish this very difficult but urgently required task two things are very important -the will to work and a congenial environment for growth of organic movement in the state.

The Organic Farming vision of the policy should be mission-oriented and farmer-cantered, unlike the popular view of organic farming that has a commercial orientation and is corporate-cantered. Making agriculture sustainable economically & ecologically- The modern agriculture systems now proved to be exhaustive, exploitative and abusive towards nature, man and civilization. Therefore, we have to adopt a perspective and agriculture system, which can bring back the very pride of our farmer, his self-respect, his self-confidence, and his faith in the agriculture heritage of his own ancestors. There is a need to earnestly plan an organic farming revolution in Manipur.