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Organic Farming- A New Way of Agriculture

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Green revolution although paved way for developing countries in self-sufficiency of food but sustaining production against the limited natural resource base demands has shifted steadily from “resource degrading” chemical agriculture to “resource protective” organic agriculture. The essential concept remains the same, i.e., to go back to the arms of nature and take up organic farming to restore the loss. Organic farming emphasizes on rotating crops, managing pests, diversifying crops and livestock and improving the soil. The rainfed areas particularly north-eastern regions where least or no utilization of chemical inputs due to poor resources provides considerable opportunity for promotion of organic farming thereby reflecting its vast but unexplored scope. However, significant barriers like yield reduction, soil fertility enhancement, integration of livestock, marketing and policy etc., arise at both macroscopic and microscopic levels; making practically impossible the complete adoption of ‘pure organic farming’; rather some specific area can be diverted to organic farming and thus a blend of organic and other innovative farming systems is needed. Adoption of Integrated Green Revolution Farming can be possible to a large extent, where the basic trends of green revolution are retained with greater efficiency and closer compatibility to the environment. This review paper attempts to present the recent global and regional scenario of organic farming particularly highlighting the scope, prospects and constraints in the northern areas.

Trend of Organic Food Consumption in India

The marketing of food is a matter of consideration as the production of food is determined by the vagaries of temperature as well as the various marketing constraints at national level as well as international level. The scope for marketing organic food in India is vast and still yet unexplored to its full potential. India experienced good growth in the organic business sector, with exports reportedly growing between 25 and 30 percent and domestic markets growing at about 40 percent (Hill, 2016). Two initiatives were launched by India's central government: allocation of 100 crore rupees for organic market development in the Northeast and launch of the government's Participatory Guarantee Systems (PGS) programme with a pledge of 300 crore rupees for 2015-16 (OFAI, 2016). Domestic market is also growing at an annual growth rate of 15- 25%. India produced around 1.35 million MT (2015- 16) of certified organic products which includes all varieties of food products namely sugarcane, oil seeds, cereals & millets, cotton, pulses, medicinal plants, tea, fruits, spices, dry fruits, vegetables, coffee, cotton, fibre etc. (Yadav, 2015). Though 50% of the organic food production in India is targeted towards exports, there are many who look towards organic food for domestic consumption (Rekha and Neeraj, 2013) and the increasing trend in organic food consumption is evident from the fact that many organic food stores are mushrooming in India. In India, consumers prefer organic marmalade, organic strawberry, organic tea, organic honey, organic cashew butter and organic flour (Rekha and Neeraj, 2013). The pattern of organic food consumption in India is much different than in the developed countries. However, for interest

of consumers the purchase decisions of organic food products are affected by external factors such as certification, labelling, packaging and accessibility which have influence on the awareness of the consumers (Janssen and Hamm, 2012). The differences exist between groups of consumers with respect to their experience in consuming organic products and the extent of available information on these food products (Ergonul and Ergonul, 2015). In this review the stress has been laid on to find out the various opportunities and avenues for promotion of organic farming in north-eastern region.

Scope and Prospects of Organic Farming

India is one of the leading fruit producing countries in the world, producing about 10% of the world's fruit production (Indian Horticulture Database, 2014). With agriculture as the backbone of the economy supported by the fact that nearly 67% of population and 55% of the total work force depending on agriculture and other allied activities, agriculture has the tremendous potential to meet the threshold for satisfying the needs of India's increasing population. It has been estimated that agricultural growth of 4% or more is required for India to achieve a double digit GDP growth rate (Chandrashekar, 2010). The scope and prospects of potential organic farming in India is signified by the fact that the farm sector has abundant organic resources like livestock, crop residue, water, aquatic weeds, forest litter, urban, rural solid wastes and agro industries, bio-products (Bhattacharya and Chakraborty, 2005). The adherence of huge population of the farmer to the natural law in ancient India has helped in maintaining the soil fertility over a relatively longer period of time (Chandra and Chauhan, 2004). Inherent advantages such as its varied agro-climatic regions, local self-sustaining agri-systems, sizeable number of progressive farmers and ready availability of inexpensive manpower translate into the potential to cultivate organically a vast basket of products (Munda, 2006). More than 65% of the country's cultivated area is rainfed on crop rotation, crop residues, animal manure, legumes and biological pest control. Most of the farms in remote and marginal areas are subsistence type. Organic farming is growing rapidly among Indian farmers and entrepreneurs, especially in low productivity areas, rain-fed zones, hilly areas and the northeastern states where fertilizer consumption is less than 25 kg/ha/year (Mitra and Devi, 2016). In fact, North Eastern Region (NER) is considered as home to some niche crops like Assam lemon, Joha rice, medicinal rice and passion fruits which has high market demands and accounts for 45 per cent of total pineapple production in India (Munda et al., 2007). Uttaranchal and Northeast states have declared themselves "organic-farming states" where as Mizoram and Sikkim declared their intentions to move to total organic farming (Mitra and Devi, 2016). Sikkim has become India's first fully organic state by implementing organic practices on approximately 75,000 ha of agricultural land (Sikkim, 2016). In Nagaland, 3000 ha area is under organic farming while as Meghalaya has committed to certifying 200,000 hectares of land as organic by 2020. These regions receive very high rainfall (2000 mm to 11000 mm per annum) and thus lead to abundant production of biomass including weeds, shrubs and herbs when a large part of the falls under pastures, forests, wastelands etc. Organic farming is better in areas having extreme rainfall because of the higher absorption and less run-off water in the field.

The promotion of organic farming is advocated initially in the rain-fed areas particularly in the hilly areas having little or no use of chemical fertilizers and other agro-chemicals due to poor resources with small holder farmers.

"Organic farming has the twin objective of the system sustainable and environmental sensitivity. In order to achieve these two goals, it has developed some rules and standards which must be strictly adhered to. There is very little scope for change and flexibility. Thus, organic farming does not require best use of options available rather the best use of options that have been approved. These options are usually more complex and less effective than the

conventional system. With ever increasing population having huge food requirements and meagre availability of organic resources and above mentioned constraints “pure Organic Farming” is not possible; rather some specific area can be diverted to organic farming for export of high quality horticultural and plantation crops in context of farming in northern states.

We can use all the organics that are available but we are not going to feed six billion people with organic fertilizers. Thus, adoption of ‘Pure Organic Farming’ is possible partially, more specifically crops having high export potential in International markets and will become less relevant in the future (Pickett, 2013). On the other hand, full adoption of Integrated Green Revolution Farming, another option of Organic Farming can be possible to a large extent, where the basic trends of the green revolution such as intensive use of external inputs, increased irrigation, development of high yielding and hybrid varieties as well as mechanizations of labour are retained with much greater efficiency on the use of these inputs with limited damage to the environment and human health.”