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Towards A Healthier Nation: Organic Farming and Government Policies in India

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ABSTRACT

In the words of shri Bankim Chand Chatterji, we have nature's bounties in form of
"vandematram !
Sujalam, suphalm, malayaja shitalam,
Shasyashyalam mataram !"

In the rapid pace of development we have inflicted serious damage to the natural resources and consequently, we have now faced the question as where is that sujalam (clean water); where is that suphlam (health crop) and where is that malayaj shitalam (refreshing air). These questions have given rise to a procedure of serious thinking to safe guard the environment and natural resources for sustainability. As a result, more and more emphasis being given towards returning to nature and adoption of organic agriculture. This paper discusses the concept, aims, and scope of organic farming in the context of the Indian subcontinent. Government policies to encourage the task of practicing organic farming on a wider scale have also been discussed in wider context. A number of books, journals, newspapers etc have been extensively studied for this purpose.

Keywords: Organic; Farming; Green Revolution; Agriculture; Policies.

1. INTRODUCTION

Organic farming is practiced in India for thousands of years. The great Indian civilization thrived on organic farming and was one of the most prosperous countries in the world. In additional India, the entire agriculture was practiced using organic techniques, where the fertilizers, pesticides etc. were obtained from plant and animals products. At that time organic farming is the backbone of the India economy. The country had witnessed a tragic Bengal farming in 1942-43 that claimed millions of lives due to starvation. India's annual food production in modern agriculture played a vital role in alleviating the hunger through green revolution. For a growing population in India, the food grain production is not sufficient in 1950 and 1960. Green revolution techniques increased food production and helped India to achieve self-reliance in 1980.

Technologies that powered the green revolution such as the use of high yielding varieties, chemical fertilizers and pesticides, coupled with the expansion of the area under irrigation transformed India from a food importer to a self-sufficient nation. The green revolution of India has undoubtedly changed the scenario. This marvelous achievement in agriculture production was mainly due to use of input like fertilizers, pesticides HYV seeds and farm machinery. As time went by expensive dependence on chemical fertilizers and pesticides showed its darker side. The land losing its fertility and is demanding larger quantities of fertilizers, pests are becoming resistant and warrant frequent sprays resulted in residues much above non-organic food in the European and US market have led to rejection to many Indian food consignments in the recent past, and this brought to paved the way of organic farming.

The techniques that were used to increase agriculture yield have led to significant surface and ground water contamination, an increased incidence of pests and disease and loss of biodiversity**.**Increased production cost and indebtedness are other problems faced by farmers in India. This becomes a big reason of farmer's suicides in India. All these problems have created an interest in organic agriculture among farmers, researcher's policymakers, and other stakeholders.

To increase the agriculture production in the country and to meet the requirements of the expanding population, it becomes imperative to change the methodologies. These involved the use of high yielding varieties and higher fertilize dosages, increasing the irrigated area and intensive cropping, and bringing large area under one crop, growing crops in non-conventional areas and changing the crop sequences. The green revolution followed the development of commercial agriculture in the developed countries,

after World War-1I. Chemical companies that developed highly toxic and life damaging chemicals for the purpose of increasing food production. The food grain production increased dramatically as the policies of green revolution began to take effect.
The introduction of chemical fertilizers, pesticides, and high-yielding varieties changed the agriculture environment leading to numerous pest problems of economic importance. Many of these are either unknown or were minor importance in early 1960. Increased irrigation, higher usage of fertilizer and wide adoption of high yielding varieties led to a resurgence of pests. The high yielding varieties and the monoculture practices led to material changes in the pest complex.

2. REVIVAL OF ORGANIC FARMING

After nearly five decades of globally acclaimed agro-technological revolution termed as green revolution, Indian agriculture is again at crossroads. On one side of the spectrum are the developed countries with almost a zero growth rate of agriculture and of environmental degradation owing to extensive industrialization and indiscriminate use of agriculture chemicals. On the other side are the developing countries with population growth outstripping agricultural produce growth and required to produce more and more food, fiber & fuel from ever shrinking agricultural land. The post green revolution problems presently threatening sustainability of Indian agriculture as a whole and raising a serious concerns about national food security include stagnation or even declines in production and productivity growth rates of major crops, receding ground water tables in many agriculturally important areas, deterioration of soil fertility , decline in factor productivity, low diversity of production systems, and increasing production costs, leaving agriculture as and economically non-viable enterprises for resource-poor farmers. It is due to these problems that the echo of sustainable and eco- friendly agriculture became louder. In the name of sustainability and Eco-friendliness, various new farming concept ***viz***, organic agriculture, natural farming, biodynamic agriculture, eco collectively known as "organic farming" have been proposed in recent years. Organic farming has the twin objective of the system is sustainable and environmentally benign.

3. CONCEPT

The concept of organic agriculture has been received differently by different people. To most of them, it implies the use of organic manures and natural methods of plant protection instead of using synthetic fertilizers and pesticides. It is regarded by some as farming involving the integrated use of fertilizers and organic manures as well as of chemical and natural input of plant protection. In either case, the concept has been understanding only partially.
Organic agriculture has been defined differently, but the description offered by Lumpkin (1990) appears to be most the comprehensive one covering all essential features. According to this description, organic agriculture is a production system which avoids or largely excludes the use of synthetic compounded fertilizers, pesticides, growth regulators, and livestock feed additives. To the maximum extent feasible, the organic system relies on crop rotation, crop residues, animal's manures, legumes, green manures, off farming organic wastes and aspect of biological pest control to maintain soil productivity and tilth, to supply plant nutrients and to control insect, weeds and other pests. The concept of soil as a living system that develops the activities of beneficial organisms is central to this definition.
Organic agriculture is a holistic production management system which promotes and enhances agro-ecosystem health including biodiversity, biological cycles, and soil biological activities. It emphasized the use of management practices in preference to the use of off-farm input taking into account that regional conditions require locally adapted system. This is accomplished by using where possible agronomic, biological and mechanical methods as opposed to using synthetic methods to full-fill any specific function with the system. (Government of India, 2001). Hence, organic farming is a form of agriculture which excludes the use of synthetic fertilizers, pesticides and plant growth regulators.
The term organic farming describes system that works to mimic and optimize the natural process for the production of agricultural crops (Kepper, 1998). Organic growers utilize a wide range of cultural practices and natural inputs to manage crops in a manner, they consider safe for environment and consumer. The use of synthetic pesticides and fertilizers is minimized or where necessary avoided. Organic farming encompasses adoption of some common practices and agronomic aspect like crop rotation, composting, use of livestock manure, organic farming can improve the soil by lowering bulk density, and they can reduce soil erosion and improve soil fertility. Organic matter encourages the formation of crumb soil structure, thus improving soil drainage, infiltration, and aeration. (e. svotwa and others, 2008).
The organic farming system is holistic in that it employs a number of strategies for maintaining as well as improving land productivity. Organic farming is an integrated production system based on active agroecosystem management rather than external inputs. Organic agriculture includes both certified and uncertified food systems. A farming system that activity follow organic principles are considered organic, even if the agroecosystem or the farm is not formally certified as organic.

4. CHARACTERSTICS OF ORGANIC FARMING

The most important characteristics of organic farming are as follows:-

1. Maximal but sustainable use of local resources.
2. Minimal use of purchased input, only as complementary to local resources.
3. Ensuring the basic biological functions of soil water nutrients humus continuum.
4. Maintain a diversity of plant and animal species as a basis for ecological balance and economic stability.
5. Creating an attractive overall landscape which gives satisfaction to the local people.
6. Increasing crop and animal diversity in the form of polyculture, agroforestry systems, integrated crop/livestock systems, etc. to minimize risk.

Organic agriculture systems are based on the three strongly interrelated principles under autonomous ecosystem management: mixed farming, crop rotation, and organic cycle optimization. Hence, organic farming has emerged as an important priority area globally

in view of the growing demand for safe and healthy food and concern on environmental pollution associated with the indiscriminate use of agrochemicals. Increasing consciousness about conservation of environment as well as health hazards associated with agrochemical and consumer preference to safe and hazard free food are major factors for growing interest in organic agriculture. Studies globally have shown that both economic factors such as increased income, reduction in the input cost and the opportunity to get a premium price for the harvest and the non-economic factors like improved soil fertility environmental protection, quality food products, and health, influenced the farmer's decision to adopt organic farming.

5. SCOPE OF ORGANIC FARMING

Only 35 percent of India's total cultivable area is covered with fertilizers where irrigation facilities are available and in the remaining 65 percent of arable land, which is mainly the rainfed negligible amount of fertilizers are being used. Farmers in these areas often use organic manure as a source of nutrients that are readily available either on their own farm or in their locality. The north eastern region of India provides considerable opportunities for organic farming due to least utilization of chemical inputs. It is estimated that a million hectares of such lands available in which can be exploited for organic production. With the sizable acreage under naturally organic/default organic cultivation, India has tremendous potential to grow crops organically and encore as a major supplier of organic products in the world's organic market.

The report of the task force on organic farming appointed by the governments of India also observed that in vast area of country, where limited amount of chemical is used and have low productivity, could be exploited as potential areas for organic agriculture, arresting the decline of soil organic matter is the most potent weapon in fighting against unabated soil degradation and imperiled sustainability of agriculture in tropical region of India, particularly those under the influence of arid, semi- arid and sub- humid climate. Application of organic manure is the only option to improve the soil organic carbon for the sustenance of soil quality and future agricultural productivity.

For the promotion of organic farming, identification of potential areas and crops are crucial. The government's strategy to promote organic farming for the crops having market potential like fruits, spices, oilseeds, pulses vegetables, wheat, cotton, basmati rice etc. As far as potential areas are concerned, three priority zones have already been identified

Category – I The top priority areas for promotion of organic farming are the rainfed areas where fertilizer and agro- chemicals consumption is already very low,

Category – II Areas are primarily under rainfed farming with little irrigation support.

Category – III The last priority areas are those with moderate to heavy use of fertilizer and pesticides, mostly multiple cropped areas.

The interest in organic agriculture in developing countries is growing because it requires less financial input and places more reliance on the natural and human resources available. Because the food produced by organic methods tastes better and contain a better balance of vitamins and minerals than conventionally grown food.

A crude analysis of the literature, however, favors organic products. This leads to an increased engagement in farming, which can trigger greater opportunities for rural employment and economic upliftment. Thus, through greater emphasis on the use of local resources and self-reliance, conversion to organic agriculture definitely, contributes to the empowerment of farmers and local communities.

6. AIMS OF ORGANIC FARMING

Organic farming tries to bridge the widening gap between man and nature with the following broader aims. However, the relative importance of an individual or a community of farmers may vary.

6.1) Sustainability of Natural Resources: organic agriculture is a holistic way of farming and besides the production of goods of high quality. It primarily aims at conservative of the natural resources (soil, water, climate, biodiversity and non-renewable energy) for sustainable production in agriculture. In the context of organic farming, the term "sustainability" is used in a wider sense, to encompass not just conservation of non-renewable resources (soil, water, minerals, energy, biodiversity) but also the issues of environmental and social sustainability. The very basic approach to organic farming envisages to:

- **a)** Improve and maintain the natural landscape and agroecosystem.
- **b)** Avoid over exploitation and pollution of natural resources.
- **c)** Minimize the consumption of no- renewable energy resources.
- **d)** Exploit synergies that exist in a natural ecosystem.
- **e)** Maintain and improve soil health by stimulating activity or soil organic manures and avoid harming them with pesticides.
- **f)** Obtain optimum economic returns, with a safe, secure and healthy working environment
- **g)** Acknowledge the virtues of indigenous knowledge and traditional farming system.

6.2) Minimizing the cost of cultivation: organic farming is one of the environment-friendly approaches of reducing dependency on external inputs and achieving the optimum productivity by making the best use of ecological principals and processes, leading to reduced costs of cultivations. This is very important for resource poor farmer especially for those who are operating a high-risk prone areas of dry land and rain-fed agriculture.

6.3) Healthy Food: Healthy food means a food that is free from harmful chemicals and heavy elements and is tasteful and nutritious. Nevertheless, the organic agriculture practices cannot ensure that products are "completely free" of harmful residues, as they

may possibly into the organic production systems through general environmental pollution also. But this is one of the major aims of organic farming and all feasible methods are used to minimize pollution of not only farm products but also of surrounding environment, including air, soil and water.

6.4) Augmentation of policy: Organically produced foods have a great demand in export markets, especially those of European and North- American countries, and they fetch a sizeable premium as compared with conventionally grown farm products. In domestic sector also the demand for organic food as increasing tremendously, especially among mid and high-income segments, which has become more cautious about harmful effects of food grown with the use of pesticides and synthetic fertilizers and potential hazards of environmental pollution caused due to modern practices in agriculture.'

7. GOVERNMENT PROGRAMS AND SCHEMES FOR BOOSTING ORGANIC FARMING

The Government of India, keeping in mind the fore-mentioned advantages, have started a number of schemes and programs because of which the area under cultivation of certified organic farming has grown 17 fold in the past one decade from 42 thousand hectare in 2003-04 to 7.23 lakh hectare in 2013-14 government of India has implemented several other programmers and schemes for boosting organic farming such as –

1. The Paramparagat Krishi Viaks Yojana.
2. Organic Value Chain Development in North Eastern Region Scheme.
3. Rastriya Krishi Vikas Yojana.
4. The mission for Integrated Development of Horticulture.
5. National Programme for Organic Production.
6. National Project on Organic Farming.
7. National Mission for Sustainable Agriculture.

According to an assocham report area under organic certification 4.72 mhac in 2013-14, cultivated area was 0.72 m hectare and forest area was 4.00 m hact. In 2013-14 as per assochem report quantity exported was 1, 94,087 mt of which food was 1,77,765 mt and textile was 16322 mt. This signifies an increase of 17.4 percent and export valued at Rs. 2428 crore.

As on march 2014, India has brought 4.72 million ha, the area under organic certification process, which includes 06. Million hectares of cultivated agriculture land and 4.12 million hectare of wild harvest collection area in forests. During 2012-13, India exported 1,65,262 mt of organic products belonging to 135 commodities valuing at us $ 312 million (Approx Rs. 1900 crore) domestic market is also growing at annual growth of 15-25% As per survey conducted by ICCOA. Banglore.

On Feb 29, when prime minister Narendra Modi led NDA presented budget for year 2016-17, it gives a clear message to the world that this fast growing economy was serious about living in harmony with nature one of the major highlight of this year budget was an impressive budgetary provision for promoting organic farming in the country and increasing the overall funding for agriculture by over 44 percent from Rs. 24,909 crore in 2015-16 to Rs 35984 crore in 2016-17. To increase crop yield in rainfed areas which account for nearly 55 percent of the country's arable land, organic farming is the being promoted. The government of India has launched two important schemes:

7.1 The pramparagat krishi vikas yojana : This is a cluster passed program for the promotion of organic farming. This scheme will bring 500,000 acres under organic farm over a 3 year period. 50 or more farmers will form a cluster and farmers will have no liability for expenditure on certification. As per the scheme, each farmer will be given Rs. 20,000 per acre in three years for the seed to harvesting of crops and transport of produce to the market. Organic farming will also be promoted via rational resources as part of the scheme. Linkages will be formed between organic products and the market as per the scheme. The scheme will also increase domestic production and certification of organic produce through the medium of farmers. The government has sanctioned an amount of Rs. 300 crore for this scheme in 2015-16.

7.2 Organic value chain development in Northeastern Region Scheme: The government has launched a value chain based organic farming scheme in the northeastern region. A total sum of Rs. 115 crore has been allocated to this scheme. The mission has been launched with an aim to develop certified organic produce is value chain model to link growers with consumers to support the development of entire value chain starting from inputs, seeds certification, to create facilities for collection aggregation, processing marketing, and brand building initiatives. Under the scheme, 30,000 to 50,000 farmers of northeast region would be empowered through the creation of about 100 farmer producer organizations and equip such companies with fall value chain under their ownership.During 2015-16 against the budget allocation of Rs. 158.87 crore, fund release was Rs. 112.11 crore. During 2016-17, against the budget allocation of Rs. 176.75 crore, fund release is Rs. 28.70 crore. This organic value chain scheme not only helps in boosting the enormous an explained political of organic entrepreneurship in the region but would also comfort the entire region into favorite destinations for new start up from across the country to come to northeast.

7.3 The mission for integrated development of horticulture. This scheme has been implemented from 2014-15. It is a centrally sponsored scheme for the holistic development of horticulture in the nation during the XIIth plan. It integrated the following six schemes:

(1) National horticulture mission.
(2) Horticulture mission for north east and Himalayan states.
(3) National bamboo mission.
(4) National horticulture board.

(5) Coconut development board.
(6) Central institute for horticulture, Nagaland.

This mission seeks to provide technical advice and administrative support to the state government or SHM or state horticulture mission for programs such as saffron mission and vegetable initiative for urban clusters. It also encourages the aggregation of farms into groups such as FIAS/FPOS and FPCS to facilitate economy of scale and scope. The main objective of this mission is by increasing horticulture production augments security, to support job creation, especially in cold chain sector and boost productivity.

7.4 Rastriya krishi vikas yojana: It is a state plan scheme of additional central assistance launched is August 2007 as a part of the 11th five-year plan by the government of India. Launched under the aegis of the national development council, it seeks to achieve percent annual growth in agriculture through development of agriculture and its allied sectors. The scheme is fund annually a state plan scheme.

The scheme is launched to promote the use of organic farming and reduce dependence on a chemical input. Under this scheme, soil health card will be issued to 3 crore farmers during 2014 and 5.5 crore cards each during next two years. Also, 100 mobile soil testing laboratories will be made available during the current year in August 2014, five new customized fertilizers have been approved, so that farmers may get required nutrient for their fields.

Recently the government has launched a saffron park at pampering (J&k). In this scheme facility for processing, packing, end re-education of saffron will be available.

7.5 National project on organic farming: In 2004-05 a national center for organic farming was established under the ministry of agriculture at Ghaziabad to provide institutional support and to facilitate farmer to more into organic crop production, by providing suitable logistics of knowledge and materials input like biofertilizer.

Department of agriculture and cooperation, the Ministry of Agriculture, Govt. of India has launched a central sector scheme "national project on organic farming" during Xth Five year plan 1st October 2004, the objective of this scheme are as follows.

a) Capacity building through service providers.
b) Financial support to different production units engaged in the production of biofertilizers compos and vermin composer.
c) Human resource development through organizing training on certification and inspection. Production and quality control of organic input, training of extension officer/field functionaries, farmers training on organic farming etc.
d) Field demonstration on organic inputs and enriched biogas slurry.
e) Salting up of model organic farms.
f) Market development for organic produce.
g) Development of domestic standards.
h) Support for a new initiative on technology related to organic farming.
i) Awareness programs etc.
j) Quality control of various bio fertilizers and organic fertilizers as per fertilizers control order.

7.6 National program for organic production: Looking the tremendous scope for cultivation and export of wide range of organic products in India, the ministry of commerce, the government of India launched National Programme for Organic Production (NPOP) in 2000, policy on accreditation system, inspection were the major objectives of this program.

This program was implemented in 2001. Through this program 11 states have been promoting organic farming in the country. These states are Kerala, Gujarat Uttaranchal, Madhya prides, Maharashtra, karaka, Rajasthan, Tamil nadir, Sikkim, Nagaland, and Mizoram. This program provides information on organic production, standards, criteria, and produces for accreditation of inspection and certification bodies, standards and procedures have been involved in line with global standards, like codex. A national organic logo "India Organic" was also developed that has been in use for certified organic products.

As of 2004, agricultural and processed food product export development authority coffee board, spices board, tea board, coconut development board coca and cashew nut board were authorized by the ministry of commerce, Government of India as accreditation agencies for agriculture.

At present, there are many accredited certification bodies in India. In 2001 a group of organizations and corporate bodies took the initiative to set up the Indian Organic Certification Agency (INDOCERT). It has become an important aliment of the organic movement in India and mobilize new forces and partnership. In 2003 together with other partners, INDOCERT created the international competence center for organic agriculture (ICCOA), a service provider for networking, capacity, building and market development to the organic sector in India. Among other activities, ICCOA implements the Indian organic market department project (2005-07), the activities of which were forced on awakener rising. Market intelligence, developing organic market initiatives and the India organic trade fair.

7.7 The National mission for sustainable agriculture: - Main features of this scheme are followed:-

(1) This scheme works towards making organic farming sustainable, remunerative and climate resistant.
(2) Efforts are also to develop natural resources and promote efficient water use of "More crop per drop" for organic farmers.
(3) The scheme also works to develop the capacity of organic farmers and stack holder in conjunction with other mission.
(4) It will also leverage another scheme such as IWMP, RKVY, and MGNREA.
(5) It will also establish departmental/ ministerial coordination to deliverable under the scheme.
(6) It will work towards the development of know-how and R&D for organic farmers.

(7) The mission specifically involves soil health management through residence management and organic farming practices.

This scheme will be implemented by the state government national center of organic farming, central fertilizer quality control, and training institute as well as soil and land use survey of India.

8. PROBLEMS IN ADOPTING ORGANIC FARMING

Farmers perceived this technology as a complex, less productive, costly, less suitable and low profitable business. This was attributed to lack of farmers knowledge, on production and management techniques of organic farming. There are some reasons behind less adoption of organic farming.

(1) Low opportunities to them to participle in organic farming rotated training and visits.
(2) Lack of any formal group of non-adoption like that of adopters.
(3) Less attention paid by the organic agriculture promotional organization them into organic farmers.
(4) Input cost in organic farming is generally higher than the conventional. Higher input costs are also found for casual labor, especially for hand weeding.
(5) Labor is a major type of input costs in organic production.
(6) Lack of knowledge on production technologies, compost management, and pest control are the major reasons behind non-adoption of organic farming.

Despite this, low productivity and production and the most important constraint felt in the program of organic farming is India is the in the ability of government policy making levels to take a firm decision to promote organic farming. Large farmers associated with big explorers hare not worry about the sale. But the small and marginal farmers harrowed lot. For export, an aggressive strategy demanding free access needs to be allowed.

9. SUGGESTIONS

It appears that India is lagging far behind the adoption or organic farming following are some of the issues which require attention at the government policy making levels to spread organic agriculture:-

(1) Substantial financial support by the govt. at central state as well as at local level is necessary to promote organic agriculture.
(2) Market development for the organic produce is a crucial factor to promote the domestic sale.
(3) The producer organization must be encouraged to get accredited for inspection and certification in accordance with NSOP. This may reduce the cost of certification besides the simplification of the process.
(4) A vigorous campaign to high light the benefits of organic farming against the conventional system is essential to increase the awareness of farmers and can summers.
(5) Identification of crops for cultivation on the organic farmer important.

10. CONCLUSION

The green revolution technologies involving greater use of synthetic agrochemicals such as fertilizer and pesticides with the adoption of nutrient-responsive high yielding vanities of crops have bowled the production output per hectare in most of the cars. However, this increase in production has slowed down and in some came there are an indication of decline in growth of productivity and producer. Priorities in agriculture research are gradually moving from a focus on individual crop performance to a total system productivity with due attention to product quality and environment safely. Environmental and health problems associated with agriculture have been increasingly well documented, but it is only recently that the scale of the cost has attracted the attention of panniers and scientists.

Nevertheless, the government of India implemented the national program for organic production (NPOP), a national project on organic farming rastriya krishi vikas yojana, the national mission for sustainable agriculture and in the recent budget 2016-17 two new schemes have been launched. Pramparagat krishi vikas yojana and organic value chain development in the northeastern region. The central government has always prioritises the agriculture sector as the “backbone of the country’s food security” an ethos truly reflected in the higher allocation of Rs. 35984 crore this year. A special allocation of 412 crores the total agriculture budget dedicated to the organic farming sector is one of the most futuristics and appropriate steps taken by the government to the tap the growth potential of organic crop production in India.

One of the India’s northeast state Sikkim became a completely organic farmer state in January 2016 and how buoyed by the union government’s resolve other states have begun making similar attempts.

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