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A GLOBAL PERSPECTIVE OF ORGANIC FARMING MOVEMENTS: A REVIEW**DEEPAK SRIVASTAVA AND PRABHAT K DWIVEDI**

“When it is understood that one loses joy and happiness in the attempt to possess them, the essence of natural farming will be realized. The ultimate goal of farming is not the growing of crops, but the cultivation and perfection of human beings.”

— Masanobu Fukuoka, *The One-Straw Revolution*

ABSTRACT

According to the United Nations the current World population is 7.9 billion as of August 2021 which is expected to reach 8 billion in 2023, 9 billion by the year 2037 and it is expected reach 10 billion in the year 2057. Global demand for food is on the rise and is likely to become double in the years to come on the other hand due to rapid urbanization and constant industrialisation the arable land in conventional agriculture countries is declining alarmingly. According to the recent resource outlook report released by FAO, only 12% of global land surface is arable and there is very less scope of its increasing any further. It becomes obvious that this land would be expected to increase its productivity by using all the chemical, clinical and artificial means to ensure food for all even at the cost of Nutrition. Between 720 and 811 million people faced hunger, while the prevalence of undernourishment climbed to around 9.9 % in 2020 from 8.4 % a year earlier. Per capita arable land is decreasing and demand for food is increasing globally. It is therefore evident that there is a dire need of conserving soil and increasing the arable land to ensure your a sustainable food and nutrition sufficient word. This paper highlights and organises the thought of pro nature farming. An effort has been made to create timeline of thought development and the road ahead.

Keywords: Food, Neutriton, Organic, Farming, Idin

INTRODUCTION

Farming has a very close relationship with human civilization. Knowledge of agriculture differentiated well between primitives and Neolithic, ever since then the journey continues. The very familiarity with agriculture led the then civilization(s) to create a settlement, giving up a nomadic lifestyle and giving way to organized, settled farming-based society. Populations boomed and those settlements turned into mega-settlements. Further, knowledge of manure not only provided food security by excess production but also accelerated cross civilization trading of grains and pulses. Civilizations boomed, grew, developed and flocked into what we call continents and countries today.

This growth of the human population, at times, raised concerns about food security which was aptly answered by the introduction of chemical fertilizers into farming. Of late, fertilizer-based farming has become inevitable and conventional, and India, the land of farmers, where more than 60% population directly or indirectly depends on farming, is no exception.

This article is a concerted effort to bring forward the evolution of organic farming as a faction of sustainable agriculture which has a symbiotic harmony with nature. This piece of work tries to incorporate carefully various phases of the dramatic journey of the concept from the primordial form of farming to the nascent yet persuasive conscious farming of the day, through highly chemical and inorganic way of modern farming midway.

SOME DEFINITIONS

Conceptually, *organic farming* is very close to natural farming with a proper emphasis on soil conditioning and food cycle, right from earthworms to plants helping pollination. As per the definition of the United States Department of Agriculture (USDA) study team on organic farming, “*organic farming is a system which avoids or largely excludes the use of synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc.) and to the maximum extent feasible rely upon crop rotations, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection*”.

Food and Agriculture Organization (FAO) of United Nations (2014) suggests that “*organic agriculture is a unique production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity, and this is accomplished by using on-farm agronomic, biological and mechanical methods in exclusion of all synthetic off-farm inputs*”.

International Federation of Organic Agriculture Movements (IFOAM) (2005) views organic agriculture as a production system that sustains the health of soils, ecosystems and people. It relies on ecological processes, biodiversity and cycles adapted to local conditions, rather than the use of inputs with adverse effects.

All the above definitions are congruent to one common point that organic farming is a holistic concept and a practice which is ecologically more sustainable against the fertiliser based modern (now termed as conventional) agricultural which has been a splurge in taking off-farm inputs for the sake of increasing productivity.

HISTORICAL BACKDROP

The knowledge and usage of organic manure are not new; it dates back to the Vedic period. Mention of organic manure is found in *Rig Veda* (1, 161, 10, 2500- 1500 BC) and as Green Manure in *Atharva Veda* (II, 8.3, 1000 BC). In *Sukra* (IV, V, 94, 107-112), it is stated that the plants should be nourished by dungs of goat, sheep, cow, water as well as meat to cause healthy growth. A reference of manure is also found in *Vrkshayurveda* by surpala (manuscript, Oxford, No 324 B, Six, 107-164)

In the first quarter of the twentieth century, leadership in agricultural research was provided by British scientists at the Imperial Agricultural Research Institute, Pusa. The most prominent among them were five persons, namely Sir Albert Howard who worked on wheat; John Walters Leather who developed soil science; Harold Maxwell-Lefroy and Thomas Bainbridge Fletcher who worked on Indian insect/ pests, and Sir Edwin John Butler who worked on fungus (Randhawa, 1983).

Sir Albert Howard (1900-1947), the father of modern organic Agriculture, developed organic composting process (mycorrhizal fungi) at Pusa, Samastipur, India and published his work as 'An Agriculture Testament' in (1940).

Making it India specific would be to talk about the post-independence era where feeding a newly liberated country of 30 crores plus populace was one of the biggest questions. Green Revolution (GR), postulated by Norman Borrough, caught fancy and imagination of the then Indian policymakers, India welcomed the thought, and so attained food independence. All this seems a fable, to many it is. India presently is one of the biggest producers and exporters of certain food grains, agriculture contributes to nearly 14% of the Indian economy, and employs almost 70% of its population directly or indirectly.

Almost at the same time when India was dabbling over the concept of Green Revolution (GR), countries like Australia, Estonia, and a hand full of European countries had started to undertake the projects related to Organic Farming. Which is the purest form can be defined as the process of farming that relies on techniques such as green manure, crop rotation, compost, and biological pest control.

In his Magnum Opus on Organic Farming, "An Agricultural Testament", Sir Albert Howard critiques civilizations by judging them for their worth based on the soil heritage they handed over to the next generation.

Fertilizer- based, off-farm input farming is not something uncalled for, feeding a seven billion plus population is a pertinent challenge for all times, but the big question arises that is it wise and strategically correct to ensure food security at the cost of nutrition security along with the additional costs of health hazards being caused. A UN report at the same time suggests that if the amount of food wasted around the world were reduced by just 25%, there would be enough food to feed all the people who are malnourished.

"The side-effects of the modern agricultural chemicals and machines raise serious questions about the overall benefits of the new technology. Chemical fertilizers and pesticides pollute our air and water. Agricultural chemicals, including hormones and antibiotics, leave residue in food that may cause cancer or genetic damage. Soil and energy resources are being depleted. Instead of recycling our wastes back onto land as fertilizer, we allow them to pollute our water. We use non-renewable energy resources to produce artificial fertilizer. In the future we may be forced to make radical adjustments on such agricultural practices." (Oelhaf, 1978).

EVOLUTION

Organic farming and its variants were reinvented by a handful of spiritually motivated agriculturist in the western countries In 1921, though organic was the only way of agriculture in the oldest civilizations like India and China, it was declared obsolete with advent of inorganic fertilizers, pesticides and modern farming techniques. Albert Howard and his wife Gabrielle Howard, proficient botanists, founded an Institute of Plant Industry in Indore (India) to improve traditional farming methods. For 11 years they worked on collecting cow dung, urine, farm residues to transform them in to organic manure, they brought improved implements and improved animal husbandry methods from their scientific training; then by incorporating aspects of the local

conventional methods developed erosion prevention techniques, protocols for the rotation of crops, and the systematic use of composts and manures.

Their seminal work on organic manure is regarded and documented as Indore Method of Compost Making.

In 1924 it was Rudolf Steiner, who initiated the first modern system of agriculture that focused exclusively on Organic methods and he named it Biodynamic Agriculture. Inspired and motivated by the concept of sustainable agriculture Lord Northbourne (Walter James; 1896-1982) coined and gifted to the world the term 'Organic Farming'. His 1940 book *Look to the Land* is a manifesto of organic agriculture. In it he mooted a contest of "organic versus chemical farming."

In July 1939, Ehrenfried Pfeiffer, the author of the standard work on biodynamic agriculture (*Bio-Dynamic Farming and Gardening*), was invited as a presenter at a Conference on Biodynamic Farming at Northbourne's farm in Kent. One of the major objectives of the conference was to provide a common platform to the advocates of various approaches to organic agriculture to transform it into a larger movement. Howard attended the conference, where he met Pfeiffer. In the following year, Northbourne published his manifesto of organic farming, *Look to the Land*, in which he coined the term "organic farming."

In 1940 Howard published his landmark work *An Agricultural Testament*. In this book, Sir Howard adopted Northbourne's terminology of "organic farming." His work spread widely, and by the time he was being regarded as the "The Father of Modern Agriculture" Primarily for the reason that his works were based on the realistic assimilation of various scientific approaches accumulated till then.

In 1977 the first International conference of Organic Agriculture Movements (IFOAM) was held in Switzerland in which 25 presentations were made. In 2000 when the conference returned to the same venue the number of presentations offered had crossed 500 mark, that aptly describes the growing interest of researchers in this field.

In his celebrated book 'A brief overview of the history and philosophy of organic agriculture' George Kuepper (2010) busts the myth of 'The Influence of the '60s and '70s Counterculture' "Obviously, this is not true. What the counterculture did, instead, was to co-opt what was then a small and rather obscure organic movement whose political and social tendencies were ultraconservative and even reactionary." It is thereby so suggested that if you don't buy the argument that the '60s counterculture invented organic farming, it is reasonable to say that it created the organic industry.

Conventional Farming- Few Statistics

As an innovative response to a threatening Asian famine in the 1960s, Introduction of synthetic fertilizers in food production led to a phenomenal growth in agricultural yields. It was celebrated and termed as Green Revolution, that comprised of three components, namely: agrochemicals; irrigation; and, high-yield seed varieties including both pesticides and chemical fertilizers.

Rachel Carson's *Silent Spring*, published in 1962, highlighted the real and perceived dangers of pesticides, making organic agriculture especially attractive, as it advocated to abstain from the use of most synthetic pesticides.

An unbiased facelift of the issue would call for questioning the production, and supply feasibility of organic produces and the concern that whether it would be able to feed the burgeoning global population; experts have contrary views.

The very thought and proposal of the concept encounter the question of decreased productivity perceptually associated with organic farming and the resultant scary picture of demand-supply gap of food products across the globe. But a deeper plunge into the issue explores sustainability and health hazard issues inherent with the conventional farming.

Moreover, there arises a question that wouldn't it be strategically myopic to declare and deem organic farming inferior to conventional farming productivity-wise. "In a review of 286 projects in 57 countries, farmers were found to have increased agricultural productivity by an average of 79%, by adopting 'resource-conserving' or ecological agriculture" (Pretty et al., 2006).

World Resources Institute in its significant study (2005) revealed that industrialised agricultural production and the global commoditization of basic food staples have not helped improve domestic food consumption in many developing countries, especially among net food importers. Neither has higher production demonstrated long-term efficiency or sustainability: the short-term gains of increased productivity are often offset by the high costs of inputs and environmental degradation.

If the health hazard associated with food contamination caused by fertilizer and pesticide residue are also taken into account, the cost pretty well surmounts the short-term benefits associated with increased productivity. The major factors that lead to growing interest in the alternative forms of agriculture in the world are: increasing consciousness about conservation of environment as well as health hazards associated with agrochemicals, and consumers' preference to safe and hazard-free food.

Organic agriculture is one among the broad spectrum of production methods that are supportive of the environment. The demand for organic food is increasing gradually in both the developed and developing countries at an annual average growth rate of 20-25 per cent (Ramesh et al., 2005). Considering the potential environmental benefits of organic production and its compatibility with integrated agricultural approaches to rural development, organic agriculture may be considered as a development vehicle for developing countries such as India.

CONCLUSION

It is therefore so arrived at that organic farming has now become a movement the impressive growth rate is getting coupled by the increasing awareness amongst the various stakeholders thereof namely the producers, the consumers, the governments and the ecology at large. The journey of organic farming can also be termed as the rediscovery of primordial farming agriculture with advanced knowledge and research. The rising concerns about sustainable development is fuelling the mission across the globe. India has been home to the maximum number of organic farmers in the world and he still contributes to a very meager portion of the world organic agriculture this anomaly or paradox is highly tempting to the researchers and academicians. India has been greatly benefitted yet adversely affected by inclusion of fertilizers and other artificial measures of increasing output in agriculture.

The Government of India has duly recognised the importance of organic farming for sustainable agriculture. National Centre Of Organic Farming is continuing Central sector scheme is tenth five year plan. National Project on Organic Farming (NPOF) is being implemented by National Centre of Organic Farming.

Most recently the government has initiated flagship project in the name of Unnat Bharat Abhiyan which is inspired by the vision of transformational change in rural development processes by leveraging knowledge Institutions to help build the architecture of an inclusive India.

Unnat Bharat Abhiyan (UBA) has its different themes namely *Organic Farming*, *Water Management*, *Energy Sources*, *Aartisane*, *Industries & Livelihood*, *Basic Amenities* and *Convergence* the first theme that is documented in this expedition is *Organic Farming* this is termed as one of the most ambitious plans of any government for inclusive growth of India by the means of rural upliftment. Although the mission is in its beginning phase but is expected deliver for rural development.

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