CHAPTER - II

REVIEW OF LITERATURE

Review of literature paves way for a clear understanding of the areas of research already undertaken and throws light on the potential areas which are yet to be covered. Keeping this in mind, an attempt has been made to make a brief survey of the previous works undertaken in the related field of the present study. It is expected that the survey of related literature not only throws light on the issues relating to the study but also helps the researcher to go for a well conceived and planned approach in conducting the study. The review of literature presented in this Chapter covers earlier research studies relating to the nature and extent of organic farming, success stories of organic farmers and the role of NGOs and SHGs in the promotion of organic farming.

Purushoththom Rao, 1 (1989) who owned 10 acres of land in the Shimoga district took up organic farming in 1989. He raised coconut and paddy along with several other crops in place of Arecanut which was destroyed due to strong winds. The yield of coconut he obtained was 80 per cent more than that of his conventional farming friends. The cost of paddy cultivation incurred was 80 per cent lesser.

It has been confirmed that crop rotations and cover cropping (green manure), typical of organic farming, reduce soil erosion, pest problems, and

1. National Bank for Agriculture & Rural Development, Department of Economic Analysis & Research, Mumbai
pesticide use. Kundu and Pillai\(^2\) (1990) found that the productivity of soil is determined by its chemical and physical as well as biological properties. Inorganic fertilizers can take care of only the chemical aspects of soil fertility while organic manures on the other hand are capable of maintaining and improving biological properties of soils. Prolonged and overall availability of smaller amounts of nutrients over an extended period of time often contributes towards a sustained increase in grain yields.

Erik Van Der Werf\(^3\) (1990) has made a comparative study of ecological farming with conventional farming in South India and observed that one of the most important characteristics in which natural ecosystems differed from conventional agriculture is the continuous presence of vegetative cover on the land.

Gunjal\(^4\) (1991) impressed that organic farming promised a better and balanced environment, better food and much better living standard to masses in India. It also promised better long-term agriculture because of its low cost.

Save and Sanghavi\(^5\) (1991) are of the view that environmental costs and returns have to be internalized and it is quite possible that the organic farming will prove to be a far better alternative to the conventional one in the long run.


\(5\). Save, Bhaskar H and Sanghavi, Ashok V, 1991, Economic Viability of Sustainable Agriculture, Spice India, October, p.4.
Nagarajan (1992) presented the case of a progressive farmer of Hosahalli in Shimoga Taluk of Karnataka who raised sugarcane varieties on his farm without loss in yields or soil fertility by using the trash as manure without burning it, which is the common practice followed by farmer. Burning of cane fields leads to irreparable environmental damage and helps to increase the atmospheric temperature of the areas which is not desirable. The leaf trash mulched into the soil without burning, on complete decomposition supplies about 100 kg of Nitrogen and 100 kg of K20 per hectare. In this novel method, the farmer has been getting an average yield of 135 to 140 tonnes per hectare for the past 25 years when compared to national yield of cane per hectare (40 tonnes). It is very high.

Somani (1992) has published a collection of 42 papers presented at a National Seminar on Natural Farming in which Korah Mathen recounts several problems in evolving representative and rigorous yardsticks for comparison between modern and alternative farming. Yields cannot be compared, because of monoculture nature of chemical farming with those of multi crops raised under organic/natural farming. Economic analysis is also problematic because one has to quantify the intangibles. He advocated the resource use efficiency analysis. But the question of profitability of different systems of farming seems difficult to be examined in the absence of an economic analysis although the author does not rely upon it.

---

Save\textsuperscript{8} (1992) found that after three years of switching over to natural cultivation, the soil was still recovering from the after effects of chemical farming. When the soil regained its health, production increased and the use of inputs decreased. The farm, which was yielding 200 to 250 coconuts per tree, gave 350 to 400 per annum.

Rahudkar and Phate\textsuperscript{9} (1992) narrate the experiences of organic farming in Maharashtra. Individual farmers growing sugarcane and grapes, after using vermi compost, saw the soil fertility increased, irrigation decreased by 45 per cent and sugarcane quality improved. The authors say that net profits from both the sugarcane and grape crops are high in organic farms.

Regi Thames\textsuperscript{10} (1993), from his case study found that transition from conventional to ecological agriculture yielded more. In the first year, the result was poor, yields were still less. The second year onwards, yields and soil began to improve. By the third year, yields started showing significant improvement. Coconut yielded 240 per cent increase along with the increased yield of 480 per cent from inter crop. In rubber, the yield came down by 20 per cent, but when compared with the profit, it was remaining the same. He also concluded in his research that the alternative ecological practices were found to be superior to conventional agriculture.

\textsuperscript{10} Regi Thames, (1993), "National Agriculture Policy Impact Analysis and Policy Options for Sustainable Agriculture", M.Phil (Futurology) Dissertation (Unpublished), Gandhigram Rural University, Gandhigram, Dindigul, Tamil Nadu, India.
Anil Agarwal\textsuperscript{11} (1993) stated that in Tamil Nadu some Municipal Corporations have begun to sell organic manure to farmers which will not only solve the problem of waste disposal, but also supplement their budgets. He cited the case of Thanjavur Municipal Corporation which sold 14,790 tonnes of organic manure for Rs.1.69 lakhs in 1992-93. The manure consisted largely of wastes from slaughter houses and vegetable markets, besides domestic wastes.

Balaji and Latha Nagarajan\textsuperscript{12} (1994) conducted an experiment of energy analysis of various cultivation operations in an ecological farm and in a modern farm in Madurantagam for IR-20 rice crop under irrigation. Their study revealed that both the farms yielded 5,625 kgs. of paddy per hectare and the straw yield was 6,750 kgs. per hectare, while the cost of cultivation of rice in the ecological farm was Rs. 7,946.75 per hectare and it was Rs. 8,605.50 in the modern farm. Ecological farming offered excellent opportunities for the employment of skilled labour and it was one of the best way to put the vast animal power available in India to efficient use. The animal power used in the ecological farm was at least five times higher than of the modern farm. The energy study showed that 93 per cent of the energy used in the ecological rice farming went to meet the nutrition demand of the crop and in the modern farm the energy expended on this accounted for 87.14 per cent. Green manure and vermi-compost were quite conservative and that was the main reason for the high figure on the ecological farm. The energy values for the chemical

\begin{flushleft}
\textsuperscript{11} Anil A'garwal, (1993), "Down to Earth : Organic Manure a Source of income for civic bodies in Tamil Nadu", December issue, Sunita Narain for Society for Environmental Communications, New Delhi at Ajanta Offset and Packaging Ltd., 95-B, Wazirpur Industrial Area, Delhi- 110 052,
\textsuperscript{12} Balaji. V. and M.S. Latha Nagarajan, (1094), "agriculture : Ecological Rice Farming for Energy Efficiency". The Hindu. 24th August.
\end{flushleft}
fertilizers were also high and calculations showed that 25 per cent of the useful industrial energy in India went to the manufacture of chemical fertilizer.

Balasubramanian\textsuperscript{13} (1994) opined that the agricultural practices followed in organic farming are governed by the principles of ecology. It is not an alternative system of farming but part of the philosophy of life to know the true spirit and form of nature. Biologically active soil is the foundation of organic farming. Healthy plants grown in healthy soil are naturally more resistant to pests and diseases.

Kannan\textsuperscript{14} (1995) impressed that he has raised Basmati variety of paddy of 120 days duration during \textit{rabi} season (January to April) on three hectares and harvested an average of more than five tonnes per hectare. The crop was grown entirely on the basis of organic manure and bio-fertilizers and for plant protection eco-friendly botanical pesticides were used. Liberal quantities of farm yard manure, green leaf manure and neem cake formed the bulk of the basic application. The total cost of cultivation per hectare was about Rs. 9303.50 and a net profit of about Rs. 40,000.00 could easily he realised per hectare of basmati.

Margasagayam\textsuperscript{15} (1995) conducted a comparative study of modern farming and natural farming in Pudukottai district in Tamil Nadu and reported that there was less occurrence of pest incidence in natural farming because of the absence of fertilizer and pesticide applications. Six natural farmers claimed

\textsuperscript{13} Balasubramanian A, (1994), "National Training on Organic Farming", prospect and problems in Organic Farming-an overview", seminar proceedings of Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India.
to have achieved yields on a par with modern farming and others were confident that they would attain the break-even point within another few years.

Harender Raj\textsuperscript{16} (1996) found that Metropolitan cities like Bombay, Delhi, Calcutta and Madras, Organic Farmed vegetables and fruits are available in the market and the farmers are getting much higher prices for their produce.

Kaushik\textsuperscript{17} (1997) analyses the issues and policy implications in the adoption of sustainable agriculture. The concept of trades off has a forceful role to play in organic farming both at the individual and national decision making levels. Public vis-a-vis private benefits, current vis-a-vis future incomes, current consumption and future growths, etc. are very pertinent issues to be determined. The author also lists a host of other issues. While this study makes a contribution at the conceptual level, it has not attempted to answer the practical questions in the minds of the farmers and other sections of the people.

Anon\textsuperscript{18} (1998) emphasises on marketing the organic products on the basis of reputation and credibility. A farmer from UP who allotted a portion of his land exclusively for organic farming found that the yields of sugarcane, rice, wheat and vegetables were lower than those under chemical farming. An Englishman, settled in Tamil Nadu, who runs an organic farm in 70 acres planted with coffee, citrus, other fruits, rice, pepper and vegetables says that he does not earn a profit and does not have confidence in organic farming.

\textsuperscript{17} Kaushik, KK, 1997, Sustainable Agriculture: Issues and Policy Implications, Productivity, 37(4), Jan-Mar
Geier Bemwad\(^9\) (1999) is of the opinion that there is no other farming method so clearly regulated by standards and rules as organic agriculture. The organic movement has decades of experience through practicing ecologically sound agriculture and also in establishing inspection and certification schemes to give the consumers the guarantee and confidence in actuality. Organic farming reduces external inputs and it is based on a holistic approach to farming. He describes the worldwide success stories of organic farming based on the performance of important countries in the West. The magnitude of world trade in organic farming products is also mentioned. To the question of whether the organic farming can feed the world, he says that neither chemical nor organic farming systems can do it; but the farmers can.

Veeresh\(^{20}\) (1999) opines that both high technology and sustainable environment cannot go together. Organic farming is conceived as one of the alternatives to conventional agriculture in order to sustain production without seriously harming the environment and ecology. However, he says that in different countries organic farming is perceived differently. While in the advanced countries, its focus is on prevention of chemical contamination, we, in countries like India are concerned of the low soil productivity. Even the capacity to absorb fertilizers depends on the organic content of the soil. The principles of organic farming are more scientific than those of the conventional. India's productivity of many crops is the lowest in the world in spite of the increase in the conventional input use. The decline in soil


nutrients, particularly in areas where the chemical inputs are increasingly being used in the absence of adequate organic matter is cited as a reason for low productivity.

Sharma\textsuperscript{21} (2001) makes a case for organic farming as the most widely recognized alternative farming system to the conventional one. The disadvantages of the latter are described in detail. Other alternatives in the form of biological farming, natural farming and permaculture are also described. The focus is on the organic farming, which is considered as the best and thus is discussed extensively.

Sankaram Ayala\textsuperscript{22} (2001) is of the view that almost all benefits of high yielding varieties based farming accrue mostly in the short term and in the long term they cause adverse effects. There is an urgent need for a corrective action. The author rules out organic farming based on the absolute exclusion of fertilizers and chemicals, not only for the present, but also in the foreseeable future. There ought to be an appropriate blend of conventional farming system and its alternatives. The average yields under organic and conventional practices are almost the same and the declining yield rate over time is slightly lower in organic farming.

Singh\textsuperscript{23} (2001) recording the experiments on rice-chick pea cropping sequence using organic manure, found the yields substantially higher compared to the control group. Similar results were obtained for rice, ginger, sunflower, soyabean and sesame.

\begin{itemize}
\item \textsuperscript{21} Sharma, Arun, K, "2001, A Handbook of Organic Farming, Agrobios (India), Jodhpur.
\item \textsuperscript{22} Sankaram, Ayala, 2001, Organic Farming : Eco-Technological Focus for Stability and Sustainability, Indian Farming, June, pp. 7-11.
\item \textsuperscript{23} Singh, GR, 2001, Organic Farming for Sustainable Agriculture, Indian Farming, June, pp. 12-14.
\end{itemize}
Fargione and Tilman\textsuperscript{24} (2002) Crop diversity is a distinctive characteristic of organic farming. Conventional farming focuses on mass production of one crop in one location, a practice called monoculture. The science of agroecology has revealed the benefits of polyculture (multiple crops in the same space), which is often employed in organic farming. Planting a variety of vegetable crops supports a wider range of beneficial insects, soil microorganisms, and other factors that add up to overall farm health. Crop diversity helps environments thrive and protect species from going extinct. Organic farming relies heavily on the natural breakdown of organic matter, using techniques like green manure and composting, to replace nutrients taken from the soil by previous crops. This biological process, driven by microorganisms such as mycorrhiza, allows the natural production of nutrients in the soil throughout the growing season, and has been referred to as feeding the soil to feed the plant. Organic farming uses a variety of methods to improve soil fertility, including crop rotation, cover cropping, reduced tillage, and application of compost. By reducing tillage, soil is not inverted and exposed to air; less carbon is lost to the atmosphere resulting in more soil organic carbon. This has an added benefit of carbon sequestration which can reduce greenhouse gases and aid in reversing climate change.

Prakash\textsuperscript{25} (2003) analysed the inappropriateness of the cost and return accounting methods adopted to find out the economics of the organic farming. An economic evaluation of the bad effects of inorganic agriculture and their internalization through environmental taxes is proposed for a market based approach to promote organic farming in India.

Kumar and Jain,\textsuperscript{26} (2003) predicted that, there is a good demand for organic products in the domestic market, which is not matched by supplies. The linkages between the two do not exist which in turn discourage production. The wholesalers/traders play a major role in the distribution of organic produces as they originate from the small farms. Large farmers have access to supermarkets and own stalls for distribution. Mumbai, Delhi, Kolkota, Chennai, Bangalore and Hyderabad are the major domestic markets for organic products.

Rao\textsuperscript{27} (2003) has suggested that before the beginning of the cultivation of organic crops, its marketability over the conventional produce has to be assured. Inability to obtain a premium price, at least during the period required to achieve the productivity levels of the conventional crop will be a setback. It was found that the farmers of organic wheat in Rajasthan got lower prices than those of the conventional wheat. The cost of marketing of both types of


\textsuperscript{26} Kumar Sarvana, V and Jain, DK, 2003, Marketing of Organic Products and Minor Forest Produce, Indian Journal of Agriculture Marketing, Conference Number Special.

products was also same and the buyers of wheat were not prepared to pay higher prices to the organic variety.

Narayanan\textsuperscript{28} (2005) in his report said that a few farmers in Puliangudi village in Tirunelveli district have successfully adopted a package of eco-friendly technologies in the paddy cultivation. It is found that these practices show good results on the indigenous rice varieties. The cost of cultivation has substantially been reduced and the farmers receive a premium for the organic rice. The cost of cultivation worked out comes to about Rs 8,750 per hectare. The price of rice obtained was Rs 30 per kg. The cultivation turned out to be rewarding economically besides being environmentally acceptable. Several farmers are coming forward to practice the method of organic farming after witnessing the results. Another farmer of the same village revealed that he got about 9,250 kg of paddy per ha and no plant protection was done after adoption of the new method. His cost of cultivation worked out was about Rs 12,500 per ha.

Frank Eyhorn et al.\textsuperscript{29} (2005) research report analyses the impact of conversion to organic cotton farming on the livelihoods of smallholders in the Maikal bio Re organic cotton project in Madhya Pradesh, Central India. For that purpose, it compares farm profile data, material and financial input/output and soil parameters of organic and conventional farms over two cropping periods (2003-05). The results show that organic farms achieve cotton yields

\textsuperscript{28} Narayanan.S, 2005, “Organic farming in India : relevance, problems and constraints” Published by the National Bank for Agriculture & Rural Development, Department of Economic Analysis & Research, Mumbai.

that are on a par with those in conventional farms, though nutrient inputs are considerably lower. With less production cost and a 20 per cent organic price premium, gross margins from cotton are thus substantially higher than in the conventional system. Even if the crops grown in rotation with cotton are sold without organic price premium, profits in organic farms are higher. In the perception of most organic farmers, soil fertility significantly improved after conversion. However the analysis of soil fertility of parameters in soil samples from organic and conventional cotton fields has shown only minor differences in organic matters content and water retention. The research indicates that organic cotton farming can be a viable option to improve incomes and reduce vulnerability of smallholders in the tropics. To use this potential it is important to find suitable approaches to enable marginalised farmers managing the hurdles of conversion to the organic farming system.

Halberg\textsuperscript{30} (2006) has observed that Traditional organic farming is labour and knowledge-intensive whereas conventional farming is capital-intensive, requiring more energy and manufactured inputs. Organic farming methods combine scientific knowledge of ecology and modern technology with traditional farming practices based on naturally occurring biological processes. Organic farming methods are studied in the field of agro-ecology. While conventional agriculture uses synthetic pesticides and water-soluble synthetically purified fertilizers, organic farmers are restricted by regulations to using natural pesticides and fertilizers. The principal methods of organic farming include crop rotation, green manures and compost, biological pest

control, and mechanical cultivation. These measures use the natural environment to enhance agricultural productivity: legumes are planted to fix nitrogen into the soil, natural insect predators are encouraged, crops are rotated to confuse pests and renew soil, and natural materials such as potassium bicarbonate and mulches are used to control disease and weeds.

While organic is fundamentally different from conventional because of the use of carbon based fertilizers compared with highly soluble synthetic based fertilizers and biological pest control instead of synthetic pesticides, organic farming and large-scale conventional farming are not entirely mutually exclusive. Many of the methods developed for organic agriculture have been borrowed by more conventional agriculture. For example, Integrated Pest Management is a multifaceted strategy that uses various organic methods of pest control whenever possible, but in conventional farming could include synthetic pesticides only as a last resort.

IFOAM\textsuperscript{31} (2008) has commented that the economics of organic farming, a subfield of agricultural economics, encompasses the entire process and effects of organic farming in terms of human society, including social costs, opportunity costs, unintended consequences, information asymmetries, and economies of scale. Although the scope of economics is broad, agricultural economics tends to focus on maximizing yields and efficiency at the farm level. Economics takes an anthropocentric approach to the value of the natural world: biodiversity, for example, is considered beneficial only to the extent that it is valued by people and increases profits. Some entities such

\footnotesize{\textsuperscript{31} International Federation of Organic Agriculture Movements (IFOAM), (2008), Criticisms and Frequent Misconceptions about Organic Agriculture.}
as the European Union subsidize organic farming, in large part because these countries want to account for the externalities of reduced water use, reduced water contamination, reduced soil erosion, reduced carbon emissions, increased biodiversity, and assorted other benefits that result from organic farming.

Aulakh et al.\textsuperscript{32} (2009) has made a survey of forty seven organic growers during 2007-08 to get information on crops being grown and organic manures being used by the organic growers and to know the farmers’ perception about organic farming and constraints in its adoption. The survey indicated that 38.3 per cent of the organic growers were large farmers, 23.4 per cent medium and semi-medium each and 14.9 per cent small. Rice, wheat, pulses and vegetables were the prominent crops being grown under organic farming using organic manures like farm yard manure and vermi-compost. Most of the organic growers were managing insect pest and diseases by using neem based pesticides. Though the productivity level of organic crops was low yet the majority of organic farmers (62 per cent) were satisfied with organic farming and practicing it mainly due to the perception that organic farming improves the soil health, environment and human health (69.5 per cent). The improved market infrastructure for organic foods and the availability of quality bio-pesticides to farmers can help in adoption of organic farming as lack of market facilities (67.1 per cent) and difficulty in control of insect pest and disease (60.2 per cent) were the top most constraints expressed by the organic growers.

Subramanian, K et al.\textsuperscript{33}(2009) has reported that the Centre for Indian Knowledge Systems (CIKS) is involved in promoting organic farming in Tamil Nadu focusing on capacity building of farmers in organic farming, production of educational and training material, research in organic farming and the building up of organic farmers' institutions had made an impact analysis in the project area where organic farming project has been implemented between the years 2007-2009. This study was conducted in seven villages. The assessment utilized Sustainable Livelihood Framework (SLF) as a tool for impact assessment. The analysis revealed that organic farmers had improved levels of social assets, knowledge assets and physical assets. From the study, it was evident that empowerment, improvement in confidence and improvement in status \textit{vis-à-vis} conventional farmers were also noted. A project to promote organic farming in an area not only brings farm lands under organic production methods but also generates useful assets and empowers organic farmers.

Chouichom and Yamao\textsuperscript{34} (2010) Organic farming is becoming popular as part of sustainable agriculture systems. The interviews enabled to compare their attitudes towards organic farming based on four aspects, namely: organic farming knowledge, environment, marketing and costs and benefits. Comparisons were made not only of socio-economic indicators, but also their opinions. Chi-square and t-test were employed to quantify correlations in this study.


Sakthi Ganapathi\textsuperscript{35} (2011) argued that agricultural development in the country has mainly been focussing on maximising yields, especially during the past 5-6 decades. Though the yields increased substantially, farmers and the environment had to pay a heavy price for this development. With low prices being offered for farm produces and the rising costs of chemical inputs having made agriculture unprofitable, farmers sought new ways to increase their farm incomes in order to survive.

Surabhi Singh\textsuperscript{36} (2012) found that agriculture sector contributes a major portion in gross production of India. In spite of this, agriculture today is finding itself in increasing difficulties. The adverse impact of agriculture based on synthetic fertilisers and herbicides is visible in the degradation of soil fertility, quality of food, taste of food and so on. Organic agriculture may prove to be a boon to curb these adverse effects. The present study was conceived with the broad objective of building authentic database on demographic profile of farmers pursuing organic farming, their belief and awareness regarding organic farming in Uttarakhand, a hill state of North India. The study was conducted in plain and hills regions of Uttarakhand. The results showed that the farmers carried out organic farming in a relatively smaller proportion of their land holding. While the respondents were cognizant about some basic facts of organic farming, they were not aware of all the aspects related to certification and standards given by the different agencies. Respondents of the study were inclined to have favourable beliefs

\textsuperscript{35} Sakthi Ganapathi (2011), Ecological farm, Indian Organic Agriculturist Movement (IOAM), Pudukkottai district, Tamil Nadu
\textsuperscript{36} Surabhi Singh and Rachel George, OrganicFarming: Awareness and beliefs of farmers in Uttarakhand, India, \textit{Journal of Human Ecology}, 37(2), pp. 139-149.
towards organic farming. The respondents, by and large, revealed good faith in organic farming. To promote organic farming, government should make policies and plan training and educational modules for farmers.

According to Alagesan\(^{37}\) (2007) reducing input costs is the immediate need of the hour for farmers. Agriculture scientists would like the farmers to realise that reduction of chemical based fertilizers and pesticides can benefit both man and earth over the long run, and in particular for farmers, as a major portion of whose money is spent on buying these chemicals. The focus, they believe must shift to educating farmers on the value of waste matter being generated in both their fields and homes and the technology to convert these waste into wealth. An innovative model can be designed for improving farm productivity in a sustainable manner through integrating farm resources by recycling farm and home wastes.

Abraham \(^{38}\) (2007) has come up with the advantage with multicropping and some other allied activities such as dairy, poultry, and vermicompost units is that even if there is an unexpected loss from one of the crops, the income from the others will help the farmer to make up for it. He cited a case of a farmer who was growing about 500 areca nut palms in his 8-acre land and when a majority of the trees started to die due to yellow leaf infestations, he approached the Krishi Vigyan Kendra of the Indian Institute of Spices,(IISR) Kozhikode, for help. "Realising the benefits of organic farming, I formed a


young farmers’ SHG (self help group) for organic farming, and as a first step towards organic farming he was trained in vermin-composting and coirpith composting”.

Swahilya\(^{39}\) (2007) recapped a success story of organic farming in Tiruvallur district through a women SHG. The SHG was instrumental in turning a 1.50-acre field awash with chemical fertilizers into a fertile ground with organic compost and herbal vermin-wash for the cultivation of fragrant jasmine varieties. The team was trained in vermin-composting and organic farming and the SHG members were taught to prepare bio-dung and bio-pesticides. Following the success of the organic farming practice, many other families in the village are evincing interest as the overall immunity of the plant has increased with reduced usage of pesticides. The SHG now looks forward to support from the Government to increase the productivity of biodung compost and include more agricultural lands under the organic fold.

Somala Devi \(^{40}\) (2008) opined that self reliance is imperative for any farm related activity. Whether the farm is big or small, it really does not matter as long as it is self reliant. “What I mean by self reliance is that a farmer should not depend on any external sources for seeds, manures or other items. Everything must be available in the farm itself,” she said.

Arunachalam\(^{41}\) (2008) says fertile soil and adequate water resources, though important, cannot alone ensure a good yield. Inputs such as fertilizers and manures are essential. “Today chemical fertilizers cost a lot, and a sudden


shortage in their availability makes a small farmer desperate for an alternative”.

Organic practices avoid investment on costly chemicals. There is a growing body of evidence to suggest that in the past 4-5 decades there has been an excessive dumping of chemical toxins on the soil. As a result the soil has become barren and ground water toxic, in many places. Contrast this with organic inputs that are safe, non toxic, and cost much less. For example, if using chemical pesticides and fertilizers for growing a crop in a hectare works out to about Rs.6,000- Rs.7,000 the cost of growing the same crop using organic inputs may come to only about Rs.500 - Rs. 1,000, according to Rajareega\(^{42}\) (2008).

Balakrishnan, G\(^{43}\) (2009) has a tree farm with a variety of trees primarily timber and fodder rather than fruit trees. The trees include teak, eucalyptus, guava, maramalli, gooseberry, etc. He is very particular about using organic matter and collects whatever organic matter is available in the village and makes it into compost.

Nagaraj N\(^{44}\) (2009) is a well known jasmine flower grower. He grows banana, turmeric and vegetables organically. Panchakavya, herbal pesticide and vermi-compost are all prepared on the farm. Surplus is sold.

---

43. Balakrishnan, G, (2009), Putharam Farm,Nemam, Thirukkathipalli (Via), Thanjavur District, Tamil Nadu, Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu
44. Nagaraj N (2009), N. N. Farms, 244, Bahuttampalayam, Ekkaraithatthapalli, P.O. Bhavanisagar Via, Erode District, Tamil Nadu, Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.
Poongodi, S and Selvam, R\textsuperscript{45} (2009) have started a vermi farm with the aim of producing vermi-compost. They also wanted to create awareness and train farmers in vermi composting. The farm is 2.6 acres and has more than 400 trees of 80 different species. Around 1/4 portion of the farm is being developed as a model farm for training programmes.

Arunachalam V.S\textsuperscript{46} (2009) a small farmer from a rural background decided to farm and chooses to do it the ecological way. The special features of his farm are: Integrating goat rearing with crops; preparing panchakavya with goat products; mixing cattle urine with irrigation water; Vermiculture in between banana trees; Mulching in sugarcane; Single seedling plantation in rice; and Green manure preparation by sowing 20 kinds of crop seeds.

Mohanasundaram , K and Pushparani\textsuperscript{47} (2009) teach and train other farmers in natural/organic farming on their farm land of three and half acres.

Nallusamy R, and Shanti\textsuperscript{48} (2009) are tapioca farmers who have only recently converted their entire twenty-five acre farmland to organic. The benefits were immediately visible. Ten acres of the 25 acres farmland are under tapioca plantation, turmeric is grown on five acres, coconut plantation occupies another six acres and the remaining four acres have a mixture of paddy, onions and vegetables. They prepare herbal pesticide, panchgavya and

\textsuperscript{45} Poongodi S, and Selvam. R (2009), Pudhu Nilavu Organic Farm / Manonmani Vermi Farm, Thalavumalai, Arachaloor, Erode District, Tamil Nadu, Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.

\textsuperscript{46} Arunachalam V.S (2009), Elunkathir Organic Farm, P.Vellalapalayam Post, Gobichettipalayam, Erode District, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.

\textsuperscript{47} Mohanasundaram K, and Pushparani (2009), Amudha Surbhi Organic Farming Training Centre, 12, Thingalur Road, Nasiyanur Post, Erode District, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.

\textsuperscript{48} Nallusamy R, and Shanti (2009), Koppampatty Post, Thuraiyur Taluka, Trichy, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.
vermi-compost and claim that with this combination of organic nutrients and pest management strategies no insects dangerous to the crops visit their field. Even rats do not dare to visit the farm, they confidently assert.

Kannan V.C\(^49\) (2009) converted his six acre farm to ‘fully organic’ some years ago. Three acres are for sugarcane, one acre for paddy and two acres have a mixture of bananas, vegetables, turmeric, etc. He switched over to organic farming as he found that the chemical farming which he was earlier practicing was not profitable. Also he learnt of the negative effects of chemical farming and how it degrades the soil.

Reeta Ganapathy\(^50\) (2009) has a five acre plot of farmland and has become organic farmer since the past ten years. Earlier she used chemical fertilizers and with it one naturally had to also use pesticides and so on. Finding the fertilizer cost very high she switched to organic farming. She also realized that chemical farming spoils the soil which is why more and more chemicals are needed each year to give the same results and this is what makes chemical farming so costly. Now with the cattle she own she is able to prepare panchakavya, do vermin-composting and make her own herbal pesticides.

Subramaniam P.C\(^51\) (2009) is a marginal farmer who practices integrated organic farming. He keeps his sheep in a deep litter house. He gets very good prices for his sheep. The manure from the deep litter house is used to enrich the soil and increase its water holding capacity. All his sheep are of

\(^{49}\) Kannan V.C (2009), 220, Thirumalirunsolai, Pudukaraipudur Post, Gobichettipalayam, Erode District, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.

\(^{50}\) Reeta Ganapathy (2009), Illuppakkorai, Ganapathiagraharam, Via, Papanasam Taluka, Tanjore District, Tamil Nadu, Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu

\(^{51}\) Subramaniam P.C (2009), Nasiyanur, Pallivalayam, Erode District, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu
the indigenous variety; he has carried out all his organic farming activities and experiments using sheep manure on his own and are pleased with the results.

Raghavan K.S\(^{52}\) (2009) says “I have 430 coconut trees of the age 27-30 years in my farm and not a single ounce of chemical has been utilized since the 1960s despite the ‘green revolution’. In 1993, I took charge of the farm after my father’s passing away and in 1994, the region experienced a severe deficit of rain. The well on our land could support only an hour of irrigation at a time and so I introduced a drip irrigation system for the coconut trees in order to cope with this water shortage. This proved insufficient and following problems in the drip system itself I went in for a bore-well, finding water at around 300 feet. I was able to revert to basin irrigation and introduced some organic inputs. The yield increased to around 120 nuts per coconut tree.

Mono-cropping and the intensive use of chemicals that have destroyed the soil are the main culprits. Farmers have not mulched their land resulting in a reduced capacity of the land to retain moisture and therefore large-scale water evaporation. Due to inadequate recharge wells also go dry. His hope is that even without irrigation my land will yield good results in the future and Fukuoka’s approach will be proved correct in India too”.

Gopalakrishnan N\(^{53}\) (2009) has inherited 10.5 acres of family property and used to follow the agricultural practices adopted by fellow agriculturists. “My experience with chemical fertilizers and pesticides was not so encouraging. Cost of cultivation increased due to price escalation of basic

\(^{52}\) Raghavan K.S (2009), No. 2 Uppukinar Street, Kottur, M. Patnam PO, Pollachi, Coimbatore, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.

\(^{53}\) Gopalakrishnan N (2009), No. 4/19, Akila Nagar First Cross, Ganapathy Nagar, South Extension, Mambazhasalai, Thiruvanaikoil, Trichy, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.
inputs, at the same time there was steady decline in the yield. My see-saw battle continued with chemical farming till 1998. Having strongly felt the need to enhance agriculture production and also to do away with chemicals to save land from degradation and man from health hazards, I started experiments with natural ways of farming and organic farming in 1998. It has been economical and also profitable”, he said.

Ilangovan\textsuperscript{54} (2009) in his 3 hectare farm is using vermin-compost and other organic farming methods since five years, before which the farm used chemical inputs for 10 years. Rice, sugarcane, banana, coconut are cultivated. Surplus produced is sold alongside educating the consumer on benefits of organic foods. He has been a Zilla Parishad Board Member for three terms since 1996 and has used his position well to propagate organic farming methods within the district through the panchayat and the Beauty Trust. The trust works with 45 local associate groups in close association with 1000 farmers within Tirichirapalli through 408 village panchayats.

Antony Samy V\textsuperscript{55} (2009) is farming organically for the past 19 years on his 150 acre farm. In 1991 he converted to organic methods of farming. His first organic crop was paddy and later he began to cultivate other crops like sugarcane, fruits, and vegetables alongwith lemon and amla trees and vegetables using organic practices.

\textsuperscript{54} Ilangovan (2009), Beauty Trust, 39, Thirumanjana Street, Tal: Lalgudi, Dist.-Tiruchirapalli, Tamil Nadu, Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.

\textsuperscript{55} Antonysamy V(2009), 53, Westcar Street, Sinthamani, Puliyangudi, Taluk Sivagiri, District, Tirunelvelli, Tamilnadu, Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.
After farming chemically for 20 years Rajapandian A\textsuperscript{56} (2009) switched to organic farming two years ago because the yield on his farm was going consistently down. Coconut, paddy, some vegetables, cotton, sugarcane are cultivated using Vermicompost, panchakavya, mulching, farmyard manure and compost. He is part of a local organization of 700 farmers that meets once every three months to share farming notes.

Dhanraj Patil A.\textsuperscript{57} (2009) has been farming organically in his 5 acre land for the past 25 years cultivating paddy, banana and growing green vegetables. Panchagavya, green manure, organic pesticides are prepared from ‘bitter leaves’ and used on farm. He also uses Cyanobacteria. in the vegetable gardens which yielded very good results.

Ramakrishnan R\textsuperscript{58} (2009) has been farming his 9 acre farm organically since 1998 before which he practiced chemical farming for 20 years. He grows 3 acres paddy, 2 acres sorghum and 4 acres sugarcane. He uses panchagavya, pusivariti (organic pesticide), cow dung, mulch, green manure, sanapai on the farm. When panchakavya is applied, paddy is 30\% larger in size and there are 6-7 times increase in yield.

---

\textsuperscript{56} Rajapandian A (2009), No. 2, U.V. Saminathan St., Maruthi Nagar, Raja Keelpakam, Chennai, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.

\textsuperscript{57} Dhanraj Patil A. (2009), Arivagam Trust, 36 Thirumangalam Road, Santhaipettai, Lalgudi, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu

\textsuperscript{58} Ramakrishnan R (2009), Vil. & Post Vaipoor, Taluk. District Tiruvanamalai, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu
Dharmalingam S.A \(^{59}\) (2009) has been farming organically partially since 1985 and converted his 5 acre land fully in 1992 before which he practiced chemical farming for 30 years. Chili, papaya, pumpkin, local vegetables, banana, onion, tomato, brinjal and beans are grown on his farm. The vegetables and fruits are marketed through associations, banks and offices. Mulching, compost, man-pullu (earthworm) vermin-compost and panchakavya are used.

Palaniswamy K.V \(^{60}\) (2009) in his 10 acres of land farming organically for the past two years before which he practiced chemical farming for 34 years. Pheromone and light traps are used for keeping away insects. Azolla is fed to the cows and the water is used for the vegetable plantations. Panchakavya is the main spray used. He uses fish solution for his vegetable garden. Old fermented butter milk is kept for 7 days and then sprayed on plants to stimulate higher flowering. This directly translates into extra vegetable produce. Vermi-compost is used on the whole farm. He produces bitter gourd, snake gourd, ridge gourd, lady finger, tomato, gherkins, beans and drum sticks. The seeds are

Ramalingam \(^{61}\) (2009) has been farming organically since 2000 on 40 acres of land. He is now well experienced in growing crops like turmeric, banana and tapioca. He uses Bio-controllers like Pseudomonas fluorescens, Bacillus sps. for the management of disease and applies chicken manure to the

---


60. Palaniswamy K.V. (2009), Venkataswamy Illam,Kethanur, Tiruppur District,Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu

farm during land preparation to supplement soil nutrient content. He recommends Pseudomonas + Panchakavya for leaf spot disease and Trichoderma viride + Bacillus for root diseases. The farm has yielded 13 to 15 kg of banana (Kadali variety) per tree and 18 tons of tapioca per acre. He uses biogas slurry as multiplication base for the microbes, 15 days prior to application.

Sundaram K.R.\textsuperscript{62}(2009) has been farming organically for the past five years on 3 acres of land. The use and application of panchakavya, EM solution, Jeeva amritham have given an yield of 15 to 16 kg banana (netharan variety) per plant. In sugarcane, he has achieved a yield of 80 tons per acre in the first crop and 68 tons in the third crop. He says dipping the young banana suckers in the above solutions will avoid most of the pest and disease problem in the initial stage of the crop. He normally divides his field into two equal parts, in one part he plants banana while the other is left fallow for a season. In the next season this land is cultivated while the just harvested land is left fallow.

Myilsamy S. A\textsuperscript{63} (2009) has a 20 acre organic farm and has in the past decade gained good experience of growing turmeric, sugarcane and paddy. Presently he grows Bhavani rice on 2 acres. This land was initially not at all suitable for agriculture; however using organic practices along with various soil enrichment techniques like use of green manures, application of FYM, panchakavya and jeeva amritham solution, he cultivated paddy - SRI


\textsuperscript{63} Myilsamy S. A.(2009), Kannakan thottam,Chettipalayam, Aalathur post, Kavanthapaddi via, Bhavani Taluka, Erode District, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.
method. 15 acres are cultivated with sugarcane. Mulching has helped in increasing the biomass to a great extent.

Balasubramanium P 64 (2009) practices organic farming on seven acres of his land and is well experienced in growing mulberry and banana. Banana has yielded bunches weighing 18-19 kg. He says the cost of cultivation using organic methods is low and the keeping quality of the fruit is very good.

Arun Lakshminarayanan 65 (2009) is farming organically on 10 acres since 2000. He has grown 700 coconut trees, 2500 areca nut trees. The land is fully mulched with areca nut and coconut palms. Glyricidia has been planted to fix the free nitrogen from the atmosphere. He applies panchakavya to the farm once in every 15 days.

Nandhakumar 66 (2009) is practicing Biodynamic Farming on coconut, banana, curry leaves, mango and sapota. Within the banana plantation is intercropped red gram, lady’s finger, black gram, sorghum, avare (bean) and green gram. On the farm, he rears eight Kangayam breed cows, six Jersey cross breed cows and 95 sheep. He prepares panchakavya, amirtha karisal, Cow pit pat (CPP) 500, 501 and fish based manure.

---

64. Balasubramanium P (2009), Thoppampatti, Narasim manayakanpalayam, Mettupalayam, Coimbatore, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu


Ramamurthy R. (2009) is doing organic farming on four acres since 2001 with different varieties of banana - kadali, red banana, robusta - using organic methods. The yields have been exceptionally high. He grows vegetables using the double digging method for his home consumption. He says there are less pest and disease attacks in organic cultivation.

Sureshkumar K (2009) is farming organically on eight acres since 2000 with banana-(nethran, kadali), brinjal and tomato. Borders are cropped with ridge gourd. He is maintaining country bullocks for land preparation activities. Initially his eight acre farm had alkaline soil, which he nursed back to the appropriate pH through organic applications.

Chinappan, S (2009) started organic farming in 2004 growing turmeric. Prior to cultivation he sows green manure crops like diancha, sunhemp. Presently, he has three acres turmeric, five acres coconut intercropped with fodder grasses and one acre ragi. He owns 5 goats and 12 cows.

Raman T.S (2009) has reported about an organic farm which has medicinal plants and an orchard. The farm keeps 23 cows. The farm cultivates medicinal and aromatic plants like sweet margoram, geranium, rosemary,

---

67. Ramamurthy R. (2009), 52-Gt, Annur Road, Mettupalayam, Coimbatore, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu

68. Sureshkumar K. (2009), B-4 Lakshmi Narayana Apartments, Dr. Suburayan Street, Tatabet, Coimbatore, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu


70. Raman T.S. (2009), Green Kovai farm, AIMS for SEVA, Annaiketti post, Coimbatore, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu
Gymnema silvestris on three acres; amla- two acres; guava and mango- two acres; eucalyptus- seven acres; and half an acre has different species of trees.

Selvaraj\textsuperscript{71} (2009) is farming organically on his ten acre farm since 2004. He cultivates banana (poovan variety) intercropped with onion, tomato and ragi. He uses composted coir pith as bed material along with vermin-compost in the proportion of 9:1. Coir pith is composted using panchakavya. According to him, the survival rate of saplings and keeping quality of the fruit is high when grown in this fashion. The tomato and onions from his farm have a shelf life of one and six months respectively. In his experience, organic farming requires less water too.

Venkat Rasa\textsuperscript{72} (2009) has been farming organically for the past ten years on his 20 acre farm. He grows sugarcane intercropped with black gram on 11 acres and coconut on six acres. The coconut farm is covered with coconut palm leaf and sugarcane trash mulch. He prepares and uses panchakavya, avuttam, EM solution for growth promotion and crop protection.

Ramakrishnan K\textsuperscript{73} (2009) has been farming organically on his four acre farm for the past five years. He grows groundnut, cotton and tapioca. Tobacco is grown and ploughed as green manure. Other organic practices include application of FYM, panchakavya, amirthakarisal and poultry manure.

\textsuperscript{71} Selvaraj (2009), M S organic Farm, Uvasimangalam, Alanthurai, Siruvani, Coimbatore, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu

\textsuperscript{72} Venkat Rasa (2009), No. 2, Erode Main Road, Valayutham Palayam Post, Namakkal, Karur Taluk, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu

\textsuperscript{73} Ramakrishnan K. (2009), Bangalore Thottam, Poyankuttai, Bhavani Taluka, Erode District, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.
Selvaraj A.R\(^{74}\)(2009) is farming organically for the last 5 years. He grows cotton, tapioca, groundnut and cumbu, mango and bamboo. VAM production beds have been installed to enrich the soil with micro-organisms. The cotton yield on his farm was a remarkable 13.5 quintals/acre.

Raju R\(^{75}\)(2009) has been farming organically for the last 3 years growing cotton, tobacco and fodder sorghum on 6 acres. There are 12 cattle and 30 hens on the farm. He practices various techniques like intercropping black gram, cowpea with cotton, preparing and using various organic solutions like devaamirtham, panchakavya etc.

Karupanaraj\(^{76}\) (2009) is a farmer in a small village and has been farming organically for the past 40 years. He uses FYM, vermin-compost, crop residues and various leaf extracts for crop production and protection.

Murali P.B\(^{77}\)(2009) owns a sprawling 60 acre organic orchard 90 kms. south of Chennai. Alphonso, Himampasand, Banganaballi and Rumani varieties are grown here. The farm is about 12 yrs. old and has been in organic practice from day one. He runs an organic shandy in Chennai every Saturday, sourcing vegetables and fruits from other organic farmers also.


\(^{76}\) Karupanaraj (2009), Bejalatti, Thalamalai, Thalavadi, Sathyamangalam, Erode District, Tamil Nadu, Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.

\(^{77}\) Murali P.B. (2009), 77, Luz Church, Allvarpattai, Myllapur, Chennai, Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.
Yuvaraj A.\textsuperscript{78} (2009) cultivates since 2002 Turmeric, Ground nut, paddy and Sesame organically in his 5 acres of land. He is converting his groundnut and sesame in to oil and selling it locally for premium price.

According to Kailash Murthy M.K\textsuperscript{79} (2009) Zero farming method requires no investment but guarantees good yield. Three tonnes of paddy have been harvested from an acre by this method. It dispels the myth that hybrid seeds, fertilizers, and pest-control techniques alone can guarantee good yield. “Visitors can personally come and see my farm and if they desire, can emulate it,” says Mr. Murthy. Switching directly from chemical farming to natural farming is a risky proposition, according to him.

Venkatraman\textsuperscript{80} (2010) has found that about 40 villages in Tirunelveli have stopped using chemical fertilizers and more than 600 farmers in the region are successfully growing different crops ranging from sunflower to chillies, using low cost input technologies called Panchagavya (PG) for raising their crops. Today, in spite of acute water scarcity and power cut problems, they are growing different crops such as sunflower, plantains, paddy, chilli, and groundnut successfully through organic farming.

In India, according to Panneerselvam, P et.al.,\textsuperscript{81} (2011), the number of farmers converting to organic farming has increased in the recent past despite the lack of government support in providing knowledge and extension to the

\textsuperscript{78} Yuvaraj A. (2009), Kurichan Valasu, Nasiyanur, Erode district. Tamil Nadu. Organic Farmers Association of India Survey, Organic farmers in Tamil Nadu.
\textsuperscript{80} Venkatraman (2010) “Food security depends on small and marginal dryland farmers” The Hindu, 6th May, 2010
farmers. In his article he has made an attempt to investigate the perceived relevance, benefits and barriers and to a conversion to organic agriculture in Tirunelveli district. The findings indicated that the farmers identified production and marketing barriers as the main constraints to adopting organic farming, while the age and education of the farmers were not deemed a problem. Lack of knowledge and lack of institutional support were other barriers to conversion. Some farmers were, however, interested in converting to organic farming in the near future due to the low cost of production, price premium and health benefits. Organic farmers were more concerned with health, environmental and production factors when institutional support was available. The years under organic farming were positively associated with reduced input costs and with increased income and increased yield. Organic farmers found the two production factors, low yield and pest control, to be of major concern. The study suggest that the government scheme for compensating yield loss during the conversion period and a price premium may help farmers adopt organic agriculture on a large scale in India.

Though organic farming has been proved to be a low investment technology for growing crops, marketing organically produced crops has not been an easy task especially for some farmers. For Sekar, M et al.\(^\text{82}\) (2011) lack of information on marketing channels and absence of proper governmental guidelines has forced many of them to sell their produce for a throwaway price, an irony when today, organic produce fetches a good price

\(^{82}\) Sekar, M, Meekeri, B. Manihatty and Ranganathan, R (2011) “Only market driven strategies can boost organic farming”, The villagers of Meekeri in Udhagamandalam
than chemical produces. A farmer said, “There is an increase in yield of 50 – 100 per cent when compared to chemical farming using organic inputs such as Panchagavya, Dasagavya, Biodynamic compost, vermin-compost, Cow pat pit Azospirillum, Phosphobacteria, and bio-control agents such as Trichoderma viride and, Pseudomonas fluorescens for growing the crops. But the real problem faced by us was lack of marketing infrastructure and a good price for our produce.

According to experts, the multiple cropping system is ideal for farmers as it is an effective method of de-risking the income loss for them. In case one crop fails, farmers need not worry but can easily tide over the financial crunch through income from the other crops.

Natrajan, K \(^{83}\) (2012) found that increasing input costs due to inflation, lack of proper marketing facilities, an indifferent government policy and an unpredictable monsoon are some of the identified obstacles in farming operations. “Except lowering the input costs all other issues are not in the hands of the poor farmer. A low cost, easy to manufacture and proven input, which increases the yield finds popularity immediately among the ryots. And Panchagavya (PG) organic growth promoter seems to be the perfect choice for many,” he said.

Several hundreds of organic farmers across the country today use PG for their crops. “While referring to historical dates we use BC or AD. Similarly the history of the organic movement can be divided into two different eras, before PG and after PG,” says Namalwar. An organic crop

\(^{83}\) Natrajan, K (2012) “Panchagavya: low cost organic input for both crops and animals”, Erode, Tamil Nadu.
nutrient it can be easily made by farmers themselves and used as a spray for crops and mixed with water while irrigating. “Compared to chemical sprays, in the market which boosts good growth and yield, absence of similar inputs in organic methods was the main reason for the slow spread of the organic movement in the country,” he said. “I never thought that our farmers would use PG in such massive quantities when I devised it,” he says.

So overwhelming was the response from farmers across the country, that the Tamil Nadu Agricultural University (TNAU), Coimbatore, did a scientific study on PG and submitted a report stating that PG does increase yield. In fact the University also started marketing PG to farmers. “Being pocket-friendly accounts for its main popularity. One litre of PG can be manufactured at a cost of Rs. 20 if the inputs have to be bought (if the inputs are available in the farm, then there is no cost). An acre requires about three litres of PG as spray. If mixed with irrigating water then 20 litres will be sufficient,” he said.

Manimaran M⁸⁴ (2012) asserted that the farmers adopting organic methods and achieving good yields have always been a good model for other ryots. But for an entire village to adopt organic practices and succeed in getting a bumper yield is by no means a small achievement. “We decided to experiment in a few acres and were satisfied with the results. Once a few of us were able to succeed in getting better yields, other farmers slowly started following organic practices and now the entire village has turned organic,” said a farmer from organic village. The input costs for organic farming are

---

⁸⁴. Manimaran M (2012), Manimaran “Kothavasal village shows the way in organic practices” Nannilam taluka, Tiruvarur district, Tamil Nadu.
comparatively less than those from chemical farming and the produce has ready buyers who pay a decent amount to the farmers. “I have been cultivating mainly paddy in my farm. Previously when I was growing paddy using chemical fertilizers I harvested about 1,600-1,700 kg of paddy per acre. The expense for cultivating one acre was about Rs. 2,000. But after switching over to organic I now spend only Rs.500 per acre on manures alone,” he further explained.

The paddy grains harvested under organic methods have been found to have better weight compared with chemical farming, according to Manimaran. “By the application of algae the weight of paddy grains has increased. Earlier, when I grew my paddy crops with chemical pesticides, one bag of harvested paddy weighed about 56 kg. Presently under organic cultivation the weight of the bag has gone up to 60-62 kg (one bag is 60 kg). Because of the weight increase we are able to get Rs.1,200 more per acre,” he noted.

National Post\(^85\) (2012) reported that organic farming seeks to limit the use of chemical pesticides and fertilisers. The analysis found that organic yields are as much as 34 per cent lower for some crops than those from comparable conventional farming practices. Particularly good performers were fruit and oilseeds such as soybeans yielding just 3 per cent less, in ideal farming conditions, than conventionally grown crops that benefit from chemical pest killers and nutrients, the researchers found. The findings

\(^85\). National post (2012), Organic farms need for more land is bad for earth: study North Post, 26th April 2012
contradict those of earlier studies that organic farming matched, or even exceeded, conventional yields.

At a time when agricultural lands are being converted into commercial plots, a group of 10 dalit women have laudably done the opposite. Turning 6,000 sqft of commercial plots in their native village Kondakuppam into farming land, members of the Kathambam Women’s Collective Farming Association have been growing various vegetables, greens and fruit-bearing trees the organic way. The women have not only made big strides in their goals promoting organic farming among women SHGs and ensuring food security for themselves within six months’ time, but also launched programmes for school students to revive traditional food habits. (Shanmugha Sundaram,86 2014).

Following in their footsteps, members of Kalanjiam and Katharikuppam associations have also formed a similar forum in their respective villages and taken up organic farming. President of the Kathambam association M Annakili said none of their association members owns farmland, and that they had leased a plot for agricultural activity. “After taking land on lease, we grew monocot and dicot plants in initially. The crops were ploughed in situ (inside the soil) to convert it into fertiliser to rejuvenate barren land and make it fertile. Now, we are harvesting vegetables, fruits and greens from the land,” said the 49-year-old BA graduate. The women have planted three to four varieties of banana and mango trees along with other fruit

trees in 3,000 sq ft land, while vegetables and greens are cultivated in 2,400 sq ft. “We share the vegetables, fruits and greens harvested from the land among us for personal use,” she added.

The foregoing overview of the literature makes it clear that opinions about the profitability and yield increases in organic farming are divided both among the farmers and experts, but there is a consensus on its eco-friendly nature and inherent ability to protect human health. There are strong views for organic farming and against the ill effects of the conventional farming system. There are many who while approving organic agriculture, advocate a careful approach by proceeding slowly towards the conversion of the conventional farms into organic. The questions about the yield and financial viability are crucial from the point of view of farmers; but they remain unanswered to a large extent. Though the country is endowed with a large number of resources for organic farming, it has not made significant stride towards it, as is evident in the literature overview.