An Overview of Organic Framing in India for Sustainable Agriculture and Policy Initiatives

***Dr. B.S. Poonia**
****Rakesh Kumar**

Abstract

The Indian economy heavily depends on agriculture. More over two thirds of the workforce in the nation are directly employed in agriculture. Therefore, the income, wealth, happiness, and general well-being of the people in this nation are directly correlated with any improvements made in agriculture. The Indian economy's most significant and expansive industry is this one. With an increasing population, India's agriculture faces significant hurdles.

The use of intensive cropping techniques, fertilisers, and irrigation to cultivate high yielding crop varieties is hampered by weeds, insects, and pests, which may cause significant losses in crop and production. Since we have been using pesticides and herbicides indiscriminately to boost agricultural output for the past 50 years, we are now aware of the negative effects of these technologies and ecological disruptions. Currently, we are self-sufficient in food grain production; nevertheless, the next difficulty is to feed people healthily. We are searching for an all-natural, chemical-free agricultural substitute, like organic farming. Exporting chemical-free agricultural goods to industrialised countries and competing on the home market both assist to increase the price. The global demand for wholesome food free of chemicals and pesticides is growing. When it comes to food that has been grown organically, people are becoming more and more prepared to pay a premium. Therefore, it is imperative that the nation's certification procedure be improved.

Keywords: Sustainable Agriculture, Ecosystems, Organic Farming, and Soil Management

Introduction

The Indian economy heavily depends on agriculture. More over two thirds of the workforce in the nation are directly employed in agriculture. Therefore, every advancement in agriculture is directly tied to the pleasure and delight of this nation's citizens. It represents the biggest, most significant, and most expansive sector of the Indian economy. With an increasing population, India's agriculture faces significant hurdles. Massive crop and production losses may arise from the use of pests, weeds, and insects in the cultivation of high yielding crop varieties that react to irrigation, fertilisers, and

intensive cropping methods. According to Suresh Patidar and Himanshu Patida (2015), sustainable agriculture is necessary to meet the objective of sustainable development. Maintaining an agricultural growth rate that can fulfil demand is thus highly valued in sustainable agriculture.

Growing awareness of the benefits of organic farming for soil health and the absence of chemical pesticides has led to a surge in demand for organic products in emerging nations such as India. Organic food is known for its superior quality and safety. According to Bhardwaj and Dhiman (2019), there is a significant potential for revenue production via organic farming. India has an abundance of naturally occurring organic nutrient resources in its soil, which are beneficial for organic farming (Adolph and Butterworth, 2002; Reddy, 2010; Deshmukh and Babar, 2015).

Principles of organic agriculture

Organic farming involves using no chemical fertilisers or pesticides to grow plants. When we produce organically, we must consider plants to be part of a wider natural system. To start organic gardening, it's important to focus on soil quality and use locally available resources. Organic farming eliminates harmful pesticides, chemicals, and fertilisers. The farming approaches use organic waste and biological resources to maintain soil health and minimise environmental effect. The Indian Council of Agricultural Research (ICAR) defines Organic Agriculture as a production strategy that improves agro-ecosystem health, including biodiversity, biological cycles, and soil activity. This is achieved using on-farm agronomic, biological, and mechanical approaches, with no synthetic off-farm inputs. The USDA study team defines organic farming as a system that relies on crop rotations, animal manures, off-farm organic waste, crop residues, mineral grade rock additives, and biological systems for nutrient mobilisation and plant protection, rather than synthetic inputs like pesticides, fertilisers, and hormones (OFPA, 2010). Crop rotation, the utilisation of crop leftovers, animal manure, and off-farm organic wastes, mineral grade rock additions, and biological nutrient mobilisation and plant protection techniques are crucial for sustaining soil fertility. The Food and Agricultural Organisation (FAO) suggested: "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".

Organic Agriculture throughout the World

Organic agriculture is practiced in 187 countries by 3.1 million farmers who manage 72.3 million hectares of land. Australia has the largest organic agricultural land (35.69 million hectares), followed by Argentina (3.63 million hectares) and Spain (2.35 million hectares). Organic agricultural land has expanded across the area. In 2019, organic food and beverage sales surpassed 106 billion euros worldwide. The recent FiBL study on organic agriculture found that organic farmland grew by 1.1 million hectares, while organic retail sales also climbed. Organic land is not just used for agriculture,

but also for other organic activities. The majority of these lands are designated for wild collecting, beekeeping, and cattle. Non-agricultural lands include forests, grazing pastures, and aquaculture. There are 35 million hectares in all. The overall organic land area was 107.4 million hectares (Organic World 2021). Australia has the most certified organic hectares of any nation. Australia has 35 million certified organic hectares, making up 54% of the world's certified organic agriculture and 8.8% of all agricultural land in Australia.

Review of Literature

Kundu and Pillai (2015) revealed that soil production depends on its chemical, physical, and biological properties. Organic manures may enhance the biological quality of soils, whereas inorganic fertilisers only treat the chemical components. Lower nutrient availability over time may lead to persistent improvements in grain production.

Save and Sanghavi (2015) advocated for governments and farmers to adopt organic agricultural practices after conducting extensive trials and sharing their findings. They strongly believe that organic farming is economically viable.

According to Save's (2016) research, the soil continued to recover from the impacts of chemical farming even after three years of natural agriculture. Improved soil health led to greater output and reduced reliance on inputs. The farm produced between 350 and 400 coconuts per tree every year, up from 200 to 250 before.

Rahudkar and Phate (2016) explain their organic agricultural experiences in Maharashtra. Vermicomposting benefits sugarcane and grape farmers by increasing soil fertility, reducing irrigation by 45 percent, and improving sugarcane quality. The scientists found that organic farms had higher net income from sugarcane and grape harvests.

Balasubramanian (2017) argues that organic farming operations adhere to ecological principles. This is not an alternative agricultural method, but rather a part of a life philosophy focused on understanding the spirit and form of nature. Organic farming is based on biologically active soils. Plants grown in healthy soil have higher resistance to natural diseases and pests.

Kaushik (2017) examines the challenges and policy implications surrounding the implementation of sustainable agriculture. Trade-offs play a significant part in organic agricultural decision-making, both at individual and national levels. It's important to consider public vs. private advantages, present vs. future revenues, current consumption vs. future growth, among other factors. The author also addresses a number of other concerns. This research provides conceptual insights, but does not address practical concerns for farmers and other stakeholders.

Anon (2018) emphasises selling organic goods based on reputation and reliability. In Japan, farmers

sell their food directly to customers. Kenyan farmers have observed that organic farming reduces expenses and increases earnings. A farmer in Uttar Pradesh discovered that organic farming produced poorer yields of sugarcane, wheat, rice, and vegetables compared to chemical farming. An Englishman in Tamil Nadu maintains a 70-acre organic farm with coffee, citrus, fruits, rice, pepper, and vegetables. However, he reports little profit and lacks trust in organic farming.

Organic agriculture, according to Bemwad Geier (2019), is controlled by strict principles and regulations unlike any other agricultural approach. The organic movement has decades of experience practicing sustainable agriculture and developing inspection and certification techniques to ensure consumer trust in reality. Organic farming involves less external inputs and a more holistic approach to farming. He highlights the success of organic farming in key western nations.

According to Sharma (2019), organic farming is a popular alternative to traditional agricultural methods. Alternative agricultural methods such as biological, natural, and permaculture are also discussed. Organic farming is highly regarded and frequently debated. The book does not address the important challenges in the implementation of organic agriculture on the ground.

According to Sankaram Ayala (2020), high yielding varieties-based farming provides short-term advantages but has significant long-term repercussions. A remedial measure is immediately needed.

The author rejects organic farming since it requires no fertilisers or chemicals now or in the future. A balanced mix of conventional and alternative agricultural methods is necessary.

Singh et al. (2021) discovered that utilising organic manure in a rice-chickpea cropping cycle resulted in significantly greater yields than the control group. Similar outcomes were seen for rice, ginger, sunflower, soybean, and sesame.

Sakthi Ganapathi (2021) reports that agricultural growth in the nation has mostly aimed to increase crop yields during the last 5-6 decades. Although yields increased dramatically, the cost to farmers and the environment was enormous. Farmers faced unfavourable conditions due to low farm product prices and high chemical input costs, prompting them to seek other revenue streams.

Jayasree Das and Deepro Bhattacharyya (2022) studied organic agricultural obstacles in Sikkim and proposed methods to address them. The author concludes that organic farming is the most viable choice available. Sikkim is unique in being the only state in the nation producing 100% organic agriculture.

Objectives

(i) To understand the state-specific area under cultivation and production of organic farming.

(ii) Recognise the need and significance of organic farming in India.

(iii) To examine the government programmes that promote organic farming in India.

Status of Organic Farm Production in India

India has the highest number of organic farmers and the tenth largest organic growing area. The country's main organic product exports include medicinal plants, pulses, rice, flax seeds, sesame, soybean, and tea. Organic farming accounted for more than 3.92 percent of India's net agricultural area in fiscal year 2022, up from the previous year. Organic farming has continuously expanded, reflecting the growing demand for organic goods. In 2022-23, India produced approximately 2.9 million MT of certified organic products, including cereals, millets, pulses, oil seeds, fibre, sugar cane, cotton, fruits, spices, dry fruits, aromatic and medicinal flora, tea, coffee, vegetables, and processed foods.

Over the past two decades, Sikkim has emerged as a leader in sustainable development. It is India's first state to attain 100% sanitation coverage and eliminate open defecation.

The state is highly literate and has made significant progress in expanding its forest cover, which now covers nearly half of its total area. In 2016, Sikkim became India's first self-proclaimed state. Tripura and Uttarakhand are currently India's only totally organic states. Madhya Pradesh, India's second-largest state, is renowned for its organic agricultural practices.

State-wise Area under Organic Certification NPOP 2023-24

S. NO.	State Name	Cultivated Area (In Ha)	Total Area (In Ha)	Organic Area (In Ha)
1	Madhya Pradesh	686209.31	831169.8	15,17,378.11
2	Maharashtra	258639.55	1025676.6	12,84,315.15
3	Gujarat	84405.36	851527.64	9,35,932.00
4	Rajasthan	216441.36	364240.43	5,80,680.79
5	Odisha	77951.82	117129.66	1,95,080.48
6	Uttarakhand	32635.01	65,760.72	98,394.73
7	Telangana	7289.85	77,186.37	84,475.22
8	Karnataka	44343.45	37,674.11	82,016.56
9	Sikkim	75454.18	22.096	75,476.28
10	Uttar Pradesh	52423.44	15,585.61	68,008.05
11	Andhra Pradesh	26950.05	35,967.97	62,917.02
12	Tamil Nadu	18653.5	39,915.20	58,567.70

13	Jharkhand	1500.76	52,621.11	54,120.87
14	Kerala	32603.71	11,512.74	44,115.45
15	Bihar	17595.82	15,153.76	32,748.58
16	Jammu & Kashmir	25094.94	7,511.56	32,605.50
17	Meghalaya	21653.71	2,357.33	24,010.04
18	Assam	15594.93	7,474.49	23,068.42
19	Mizoram	4797.84	15,265.10	20,061.94
20	Tripura	2491.13	17,125.31	19,615.44
21	Chhattisgarh	13259.18	3,642.68	16,900.86
22	Arunachal Pradesh	3110	9,774.68	12,883.68
23	Nagaland	7551.61	5,003.56	12,554.17
24	Goa	11204.22	1,194.19	12,397.41
25	Himachal Pradesh	8508.25	2,558.85	11,066.10
26	Manipur	7683	3,004.50	10,686.50
27	Punjab	891.12	9,003.53	9,893.65
28	West Bengal	7480.66	1,315.58	8,795.24
29	Haryana	2266.54	630.22	2,895.76
30	Ladakh	1	122.42	122.42
31	Pondicherry	22.17	1.34	22.51
32	New Delhi	1.72	17.67	18.39
33	Andaman & Nicobar Islands	1	1	1
Total	-	1764678.15	3627116.82	53,91,793.97

Source: Information provided by the certification bodies accredited under NPOP on Tracenet

State wise Organic Farm Production for the year 2022-23

S.NO.	State Name	Organic Production (In MT)	Conversion Production (In MT)	Total Production (MT)
1	Madhya Pradesh	7,38,202.84	87,425.57	8,25,628.41
2	Maharashtra	7,24,947.90	65,381.40	7,90,328.30
3	Rajasthan	3,11,171.77	11,803.18	3,22,974.95
4	Karnataka	2,37,091.18	2.25	2,37,093.43
5	Uttar Pradesh	2,15,507.50	2,014.01	2,17,521.51
6	Gujarat	89,979.28	49,751.40	1,39,730.68
7	Odisha	64,977.16	65,101.84	1,30,079.00
8	Jammu & Kashmir	50,231.38	0	50,232.38
9	Uttarakhand	43,955.51	0	43,956.51
10	Kerala	42,730.09	6.16	42,736.25
11	Tamil Nadu	24,965.04	110	25,075.04
12	Andhra Pradesh	24,191.25	0	24,192.25
13	Bihar	19,854.89	0	19,855.89
14	Chhattisgarh	17,704.47	0	17,705.47
15	West Bengal	15,410.18	0	15,411.18
16	Assam	14,498.86	0	14,499.86
17	Meghalaya	9,920.69	0	9,921.69
18	Himachal Pradesh	6,979.06	0	6,980.06
19	Punjab	483.98	5,941.72	6,425.70
20	Jharkhand	4,364.09	0	4,365.09
21	Haryana	2,680.58	0	2,681.58
22	Goa	2,489.52	71.14	2,560.66
23	Telangana	838.64	434.05	1,272.69
24	Arunachal Pradesh	794	0	795
25	Tripura	333.78	217.04	550.81
26	Mizoram	335	0	336

27	Sikkim	52.9	0	53.9
28	Manipur	12	0	13
29	Pondicherry	5	0	6
Total	-	2664680.54	288247.75	2952928.29

(Source: The information provided by the certification bodies accredited under NPOP on Tracenet)

Techniques for organic farming

There are various strategies for doing organic farming in India. Methods of organic farming in India.

i) Soil Management.

Soil management is the fundamental practice of organic farming in India. After cultivation, soil loses nutrients and fertiliser levels drop. Soil management refers to the practice of replenishing the soil with essential nutrients. Organic farming employs natural methods to improve soil fertility. Utilising microorganisms found in animal manure may increase the profitability and effectiveness of soil additives. It employs microorganisms found in animal faeces. Bacteria promote soil fertility and productivity. Soil management ranks #1 among organic agricultural practices.

ii). Weed Management.

Weed is an unwanted plant that grows in agricultural areas alongside the crop. Organic farming mostly focuses on weed removal. Weeds consuming soil nutrients have an impact on crop output. There are two strategies for dealing with weeds. When moving or cutting, remove any weeds. Mulching is another method used by farmers to prevent weed development by leaving plastic film or plant debris on the soil surface.

iii). Crop diversity.

Crop variety is one of the most well-known organic farming practices in India. This technology allows for the cultivation of many crops simultaneously to fulfil increasing demand. In rural areas, monoculture refers to the practice of producing just one kind of product in a given region. Poly-culture is a recent trend that aims to meet crop demand while also supplying soil microorganisms.

iv). Chemical management in farming.

Agricultural farms have both beneficial and dangerous species that impact them. Controlling organism development is crucial for maintaining soil and crop health. This strategy uses natural or little herbicides, chemicals, and insecticides to preserve crops and soil. Maintaining the region properly is crucial for controlling other creatures.

v) Biological Pest Control.

Indian farmers use these organic agricultural practices. This approach involves using live organisms to manage pests, with or without the use of pesticides.

Advantages of Organic Farming

- Organic goods are in great demand in India and globally, allowing for increased revenue via exports.
- Organic farming in India is cost-effective since it eliminates the need for costly fertilisers, pesticides, and HYV seeds. It has no expenditures.
- Organic farming is environmentally beneficial since it does not require fertiliser or chemicals.
- It saves energy for both animals and machines and reduces crop failure.
- Improves soil chemical properties, including nutrient availability and retention, reducing nutrient loss to water and the environment, and promoting beneficial chemical interactions.
- Reduces pollution levels, promoting sustainable agricultural production and ecological preservation. It also improves environmental health by reducing pollution levels.
- It ensures that natural resources be fully used in the near term while simultaneously safeguarding them for future generations.
- Organic foods are healthier, more nutritious, and taste better than those grown with chemicals or fertilisers.
- Lowers residual product levels, reducing health concerns for humans and animals.
- Improves soil chemical properties, including nutrient availability and retention, reducing nutrient loss to water and the environment, and promoting beneficial chemical interactions.

Limitations of Organic Agriculture

There are certain restrictions to organic farming, like

- Organic farming is labor-intensive. Organic farming requires extra time for farmers to connect with their crops and observe them closely.
- The changeover is costly for farmers due to the need to adjust soil structure and other factors.

- Organic agricultural production falls in the first few years, thus farmers should get higher pricing for their output.
- Organic manure is not readily accessible and may cost more than chemical fertilisers in terms of plant nutrients.
- Organic food costs change over time.These organic farmers cultivate millions of acres of land yet are not labelled as such. Their food is either sold on the open market alongside conventionally produced products at the same price, or sold organically via exclusive outlets and specialised marketplaces based on trust and goodwill. Many farmers may not pursue certification due to high costs and extensive paperwork requirements.
- Indian farmers struggle to grasp organic agricultural rules, including processing, shipping, and certification.
- Organic goods have reduced shelf life owing to lack of artificial preservatives.

Government's Initiative to Promote Organic Farming

The Indian government supports organic farming nationwide via several initiatives.

1. Paramparagat Krishi Vikas Yojana (PKVY).

The "Paramparagat Krishi Vikas Yojana (PKVY)," a sub-component of the Soil Health Management (SHM) scheme under the National Mission of Sustainable Agriculture (NMSA), aims to develop models of excellence in organic farming through a value chain, ensuring sustainability, long-term soil fertility buildup, resource conservation, and safe and healthy food grown through organic practices. PKVY aims to empower farmers via institutional development, including clusters for farm practice management, input production, quality assurance, value addition, and direct commercialization using new methodologies. The PKVY would primarily rely on the Participatory Guarantee System (PGS) under the PGS-India programme for quality assurance.

Launched in 2015, it promotes organic farming and improves soil health.

The Paramparagat Krishi Vikas Yojana encourages cluster-based organic farming via PGS certification. The plan supports cluster creation, training, certification, and marketing activities. Farmers get Rs. 50,000 per ha/3 years, with a 62 percent bonus (Rs. 31,000) for using organic inputs.

Objective:

1. Encourage organic farming among rural youth, farmers, consumers and merchants.
2. Share the newest organic agricultural technology.

3. Utilise professionals from India's public agricultural research system.
4. Plan at least one cluster demonstration in a community.

Major Features of the Scheme:

1. Organic farming clusters should be at least 20 ha (50 acres) and as continuous as feasible.
2. At least 65 percent of farmers in a cluster should be classified as small and marginal. This should be achieved at the cluster level wherever possible.
3. Adopted Participatory Guarantee System (PGS) certification using cluster method.
4. Implemented organic village for manure management and biological nitrogen collecting using cluster technique.

2. Mission: Organic Value Chain Development for the North Eastern Region.

The Ministry of Agriculture and Farmer Welfare has launched a Central Sector Scheme called "Mission Organic Value Chain Development for North Eastern Region" to promote organic farming in Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura during the 12th Plan Period.

The scheme connects growers with consumers and supports the development of the entire value chain, including inputs, seeds, certification, and facilities for collection, processing, marketing, and brand building.

From 2015-16 to 2017-18, Agriculture and Farmers Welfare implemented the Mission Organic Value Chain Development for North Eastern Region in Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura. This is a Central Sector Scheme.

The programme aims to support the development of certified organic products along the value chain, linking farmers and consumers.

The plan was authorised with a budget of Rs. 400 crore for three years.

Assistance is offered for cluster expansion, on/off farm input production, seed/planting material supply, and infrastructure development, among other things.

3. Capital Investment Subsidy Scheme (CISS) under the Soil Health Management Scheme

This initiative offers 100% support to state governments and agencies to develop mechanised fruit and vegetable market waste and agro waste compost manufacturing facilities, with a maximum of Rs. 190 lakh per unit (3000 Total Per Annum TPA capacity). Individuals and business organisations may get help up to 33% of the cost of Rs. 63 lakh per unit for capital investment.

4. National Mission for Oilseeds and Oil Palm (NMOOP)

The Mission offers a 50% subsidy of Rs. 300 per hectare on bio-fertilizers, Rhizobium culture, PSB, ZSB, Azatobacter, Mycorrhiza, and vermi compost.

5. National Food Security Mission (NFSM).

The NFSM offers 50% financial help for promoting bio-fertilizer (Rhizobium/PSB) up to Rs 300 per acre.

6. Bhartiya Prakritik Krishi Padhati (BPKP).

Since 2020-21, Bhartiya Prakritik Krishi Padhati (BPKP) is a sub-scheme of Paramparagat Krishi Vikas Yojana (PKVY) that promotes traditional indigenous practices like Natural Farming (NF). The approach eliminates synthetic chemicals and promotes on-farm biomass recycling. It emphasises biomass mulching, cow dung-urine formulations, and plant-based preparations. Natural farming has covered 4.09 lakh hectares, resulting in a total discharge of Rs. 4980.99 lakh across 8 states.

The Food Safety and Standard Authority of India (FSSAI) has implemented organic food laws for producing, selling, distributing, and importing, effective July 1, 2018. The FSSAI produced the "Indian Organic Integrity Data-Base" to help buyers check the authenticity of organic food. It also launched the "Jaivik Bharat" label for organic goods. This would provide more small and marginal farmers access to certified organic markets.

Conclusion

Organic agriculture is a comprehensive food production method that prioritises sustainable use of local natural resources. To ensure long-term development and quality, we must include all stakeholders, use eco-friendly technologies, establish marketing infrastructure, and provide financial support. Organic agriculture promotes resource balance, prevents over-exploitation, and protects soil quality and biodiversity.

***Associate Professor**
****M.Sc. Social Science, NET**
Department of Agronomy
B.B.D. Govt. College
Chimanpura, Shahpura, Jaipur (Raj.)

References:

1. Adolph, B., Butterworth, J. (2002). Soil fertility management in semi-arid India: its role in agricultural systems and the livelihoods of poor people, Natural Resources Institute, UK.

2. Anon, 1998, How Viable is Organic Farming, Agriculture and Industry Survey, Jan., pp. 27-30.
3. Balasubramanian. A, (1994), "National Training on Organic Farming"- Prospect and Problems in Organic Farmingan Overview", Seminar Proceedings of Tamil Nadu Agricultural University, Coibatore, TamilNadu, India.
4. Bhardwaj, M., Dhiman, M. (2019). Growth and performance of organic farming in India: what could be the future prospects. Journal of Current Science, 20: 1–8.
5. Geier, Bemwad, 1999, International Federation of Organic Agriculture Movements, in Sustainable Agriculture Solutions: The Action report of the Sustainable Agriculture Initiative, Novello Press, London.
6. Kaushik, KK, 1997, Sustainable Agriculture : Issues and Policy Implications, Productivity, 37(4), Jan-Mar.
7. Kundu, P.K and Pillai (1990), "Indian Farmer Digest, for sustainable rice yield use organic manures too". Department of Agronomy Soil Science, Directorate of Rice Research, Rajendranagar, Hyderabad. India
8. Rahudkar, WB and Phate, PB, 1992, Organic Farming: Experiences of Farmers in Maharashtra, Proceedings of National Seminar on Natural Farming, Rajasthan College of Agriculture, Udaipur, India.
9. Sakthi Ganapathi(2011) Ecological farm, Indian Organic Agriculturalist Movement (IOAM), Pudukottai District,Tamil Nadu, India
10. Save, Bhaskar H and Sanghavi, Ashok V, 1991, Economic Viability of Sustainable Agriculture, Spice India, October, p.4.
11. Save, B, 1992, Natural Farming-An Experience, in Somani and others (ed.). Proceedings of National Seminar on Natural Farming, Rajasthan College of Agriculture, Udaipur, India
12. Sankaram, Ayala, 2001, Organic Farming : Eco-Technological Focus for Stability and Sustainability, Indian Farming, June, pp. 7-11.
13. Sharma, Arun, K, "2001, A Handbook of Organic Farming, Agrobios (India), Jodhpur, India
14. Singh, GR, 2001, Organic Farming for Sustainable Agriculture, Indian Farming, June, pp. 12 14.
15. National Centre for Organic and Natural Farming, Department of Agriculture & Farmers Welfare, Government of India. Https://Ncof.Dacnet.Nic.In/Statusorganicfarming)

16. Dr. S. Balamurugan1 & Dr. P. Karthikesan(2018), Farmers perception towards applying natural manure in
17. Nagapattinam district – a case study, Paper IJRAR- International Journal of Research and Analytical Reviews, Volume 5 I Issue 3 I July – Sept 2018.
18. Organic Foods Production Act of 1990, Pub. L. No. 101–624, §§ 2101- 2123, 104 Stat. 3935 (codified at 7 U.S.C.6501– 6522).
19. Jayasree Das and Deepro Bhattacharyya, "An Enquiry into the Challenges of Organic Farming in Sikkim", Business Studies--Volume--XXXIX, No. 1 & 2, January & July, 2018.
20. Reddy S.B. (2010).Organic farming: status, issues and prospects—a review. Agricultural Economics Research Review, 23: 343–358.
21. Deshmukh,M.S., Babar, N.(2015). Present status and prospects of organic farming in India. European Academic Research, 3: 4271–4287.
22. FiBL & IFOAM – Organics International (2022): The World of Organic Agriculture. Frick and Bonn.
23. Organic Certification Data under NPOP 2022-23, Agricultural and processed food products export development authority (APEDA) Ministry of Commerce and Industry, Government of India.