

Executive Summary

All India Baseline Study on Producer Companies & Natural
Farming Practices: Part 2

Sustainable Agricultural Practices in India

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List of Abbreviations

CAPART	Council for Advancement of People's Action and Rural Technology
CBO	Community Based Organization
CPP	Cow Pat Pit (Compost/Manure)
CSO	Civil Society Organization
EM	Effective Micro Organism
FFS	Farmer Field School
FYM	Farm Yard Manure
FPC	Farmer Producer Company
GDP	Gross Domestic Product
GM	Genetically Modified
HYV	High Yielding Variety
ICS	International Certification Services
IMO	Indigenous Micro Organism
IPM	Integrated Pest Management
KAU	Kerala Agriculture University
KVIC	Khadi and Village Industrial Commission
KVIB	Khadi and Village India Board
LEISA	Low External Input Sustainable Agriculture
MFI	Micro Finance Institution
NABARD	National Bank for Agriculture and Rural Development
NGO	Non Government Organization
NRC	Natural Resource Conservation
NRU	Natural Resource Utilization
OFAI	Organic Farming Association of India
PC	Producer Company
PDS	Public Distribution System
PGS	Participatory Guarantee Scheme
PPP	Public Private Partnership
RFSTE	Research Foundation for Science Technology and Ecology
RRB	Regional Rural Bank
SAMETI	Society for Agriculture Management and Extension Training Institute
SHG	Self Help Group
SRI	System of Rice Intensification

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Executive Summary

This baseline survey on producer companies and natural farming provides an overview of the status of producer companies and natural farming practices in India as on December 2013. As per the initial plan, both the aspects of producer companies and natural farming were to be presented in a single report. However, given the significance of each of these themes and distinctiveness of the data collected, the two themes have been presented in two separate reports. Part 1 covers the baseline survey on Producer Companies in India and Part 2 covers the Natural Farming Practices in India. This is the Executive Summary of Part 2, viz., baseline study on Natural Farming Practices in India.

Background of the study

Prior to this baseline study, DEAR-NABARD had already supported an action research project on building a community based-community paced-community owned and community managed enterprise system that had evolved to be a producer company. During the above action research, it was observed that the increase in net income and well being of the small producers/farmers in the above producer company was largely dependent on the increase in efficiency and productivity of agricultural production. In other words, the nature of product technology and process technology practiced by the smallholder farmers were the keys to efficiency and sustainability of the producer community and the producer company.

In the above light, a study on agricultural practices of farmers especially the small and marginal farmers who constitute about 75% of farmers in India would help in better policy making. Based on the contextual observations from the action research, it was also perceived that natural farming practices were probably more relevant and efficient for the smallholder farmers. Accordingly, this study proposed to undertake a baseline study on the natural farming practices in India.

Review of policy showed that the state and central governments had initiated several policy measures on organic farming. Survey of agricultural practices of farmers and farming communities showed that there have been a variety of natural farming practices that have been followed since time immemorial in different parts of the country. Some of the practices were such

as Natural Farming, Natueco Farming, Bio-dynamic Farming, Permaculture, Zero Budget Farming, Indigenous Micro Organism based farming, Effective Micro-organism based farming, Organic Farming, Low External Input Sustainable Agriculture, Integrated Agriculture, Sustainable Agriculture, etc. The study found that most of the classifications were based on the method or technique used. However from the overall purpose, all these methods are aimed towards sustainable agriculture. The report therefore uses the nomenclature of sustainable agriculture to refer to all types of agricultural practices that aims to be low cost, eco-friendly, and natural.

Purpose of the Study

The purpose of this study included the following:

- (a) To map the farmers/farming communities practicing natural farming in India and to develop a network of such farmers/farming communities for demonstration to other farmers/farming communities in rural India.
- (b) To observe and record the permutation and combinations of different crops viz., cereals, pulses, millets, fruits, vegetables, horticulture with local livestock under different micro-climatic conditions through natural farming practices that yield high net incomes and minimize risks to small and marginal farmers.
- (c) To observe and record the ecological balance achieved and maintained between the local ecosystem and the production activities where natural farming is being practiced.

In the above context of policy and practice, the study covered much more ground than originally planned. It not only covered farmers and farming communities that had matured to natural farming but also took up studies of farmers and farming communities that followed other techniques that could gradually lead to natural farming and ecological agriculture. In the course of this study, the scope of the study broadened from natural farming to sustainable agriculture; that is more holistic from the farmers' perspective and significant from the policy perspective in India.

Study Methodology

The methodology of this study included survey, case study, and action research. Triangulation of these methods was adopted to understand and analyze natural farming and sustainable agriculture practices in India. The following steps and processes were followed for the baseline data collection:

1. Survey included identification of farmers from different states of India who adopted sustainable agricultural practices. A list of these progressive farmers is provided in the annexure of this report.
2. Brief profiles of seventy (70) progressive farmers on a few key indicators of sustainable agricultural practices were compiled.
3. To give a more detailed description of some these farmers adopting sustainable agriculture, short case studies of twenty (20) of these progressive farmers from different parts of India were also undertaken.
4. In addition to survey and case studies of farmers, study of a few bio villages and institutional efforts of some institutions were also undertaken.
5. Based on secondary data, the study developed an overall mapping of geographical spread of areas that are under sustainable agriculture or ecological agriculture. The estimation of area under sustainable agriculture was based on indirect indicators, viz., usage of inorganic fertilizers and chemical pesticides.
6. The study analysed the data from the published policy documents of the central and state governments, especially the organic policies of different state governments.
7. In addition to secondary data on sustainable agricultural practices, primary data were collected from field visits to farmers in different states of India. The states visited includes Odisha, W Bengal, Assam, Sikkim, Meghalaya, Bihar, U.P, M.P., Maharastra, Goa, Gujurat, Rajastan, Haryana, Punjab, Uttarakhand, J&K, A.P., Tamilnadu, Karnataka, and Kerala.
8. This study was also complemented by a survey of about 4306 farmers from 240 GPs in Balasore district, Odisha as part of another study supported by DEAR-NABARD during the period of this study. The focus of this study was baseline survey of farmers under the pilot project for augmenting farm productivity in Balasore district, Odisha.

9. To assess the transfer and spread of knowledge on sustainable agriculture among the farming communities, the study also looked in to the codification of the tacit and explicit knowledge of sustainable agricultural practices in India. Accordingly, the study included survey of codification of sustainable agricultural practices in different parts of the country undertaken by government institutions, civil society organizations, and academic institutions.
10. During the period of this study, the principal investigator of this study had the opportunity to be involved in developing a curriculum on Sustainable Agriculture under the programme "Management @ Grassroots" supported by Small Farmers Agribusiness Consortium (SFAC), Department of Agriculture & Cooperation of Government of India.

Key Findings

This study reveals many important findings on the natural farming practices and sustainable agriculture in the country. The study and the findings are especially significant given the overall issues and impending crisis in the practice of industrial agriculture; which has been an outcome of the green revolution and the market economy adopted in the country during the last about five decades.

1. There has been progressive change in the agriculture policies of the state governments towards sustainable agriculture. Seven out of the twenty eight states in India have already introduced a separate policy on sustainable agriculture. The National Centre for Organic Farming (NCOF) under the Ministry of Agriculture, Government of India has also begun to change its policies to facilitate sustainable agriculture.
2. The practice of natural farming or sustainable agriculture is quite promising. Farmers adopting sustainable agriculture are doing quite well and their net income has been improving as their total cost of agriculture as percentage of gross income is reducing. It is also interesting to observe that the mixed cropping reduces the total cost as a percentage of gross income. Further, as the size of farm increases beyond a point, the total cost as percentage of gross income increases.

Based on the detailed information obtained from the 20 cases of farmers across the country, the figures on net incomes and cost of production look very promising. These 20 farmers are from different regions, different ecosystems and with different land holdings. Depending on the maturity, size, and multiple cropping of the farm, the net income per acre per year is found to be from 12,000 INR to 172,800 INR. Under sustainable agricultural practice, the net income per acre increases as the farm become older.

Most importantly, the gross expenditure as a percentage of gross income is in favor of the farmers. The figure varies from 3% to 75% depending on the level of multiple/mixed cropping, size, maturity of the farm. The analysis of the cases reveals that the percentage of gross expenditure as a percentage of gross income reduces as the farm adopts mixed cropping. Further, with larger size of the farm, beyond an optimal point, the gross expenditure as percentage of gross income increases due to increased operation and management cost.

Although the number of farmers adopting sustainable agriculture is very small as compared to the farmers in conventional industrial agriculture, they are spread all over the country. Indeed, there is slow revolution among the farmers in the heartland of green revolution, viz., Punjab, where a large number of farmers are moving on to sustainable agriculture. In South India, a large number of qualified industry professional have been moving full time to sustainable agricultural practice.

3. The science and practice of sustainable agriculture is very limited with regard to research and codification. Currently, a few of the leading farmers of sustainable agriculture have codified some aspects of their respective techniques and practices. These farmers have been able to demonstrate the agricultural outputs more than systematically explain the science of it. The processes of sustainable agriculture have not been fully codified such that the small and marginal farmers could adopt them without hesitation. There have been little public investments on research for empirical evidences and codification of sustainable agriculture and hence the tacit and intricate knowledge system of sustainable agriculture has not been popular in practice. As a result of this lack of scientific study, codification and subsequent training, the adoption and replication of sustainable agricultural practices are much slower as

compared to the huge potential it offers to mitigate the risks of farmers and the growing demand for safe and nutritious organic food by the consumers and the producers.

4. Empirical observations of different practices and literature on sustainable agriculture suggest that basic dimensions to sustainable agriculture include (a) soil health, (b) seeds, (c) water (moisture) management, (d) mixed cropping for better plant protection, (e) integration of agriculture to local livestock, (f) converging integrated agriculture to local ecosystem by agro-forestry and social forestry.
5. The core challenges of implementing sustainable agriculture across India include (a) issues of adoption by the conventional farmers as they fear the loss of production in the early years, (b) lack of codification and simplified knowledge systems, the conventional farmers are not confident to move forward with the unknown and apparently complex system, (c) lack of adequate market support to agricultural produce in general and hence does not encourage the farmers to invest in anything new, (d) the current institutional arrangement also does not provide commensurate support to overcome the existing challenges of sustainable agriculture, and (e) the policies of the state governments and central government have been rather confusing to the farmers in the country. As of today, only one state viz., Sikkim provides a clear policy on Organic Farming. Nine (9) states have both agriculture policies on external input based industrial agriculture and on farm input based sustainable agriculture. All the other states in the country have only external input based agriculture.

Recommendations

1. **Agriculture Policy:** Agriculture Policy needs to take a clear direction towards sustainable agriculture for minimizing the risks of the farmers and increasing risks of climate change (Nayak, 2013c). Some of the key areas of intervention that the policy needs to cover are on farm/agro forestry, kitchen garden, fodder cultivation, cattle shed, kitchen gardens, in-situ water conservation, bio-villages, action research and codification of science of sustainable agriculture, facilitate training of sustainable agriculture with the help of locally successful sustainable agricultural farmers. This also means that policy should develop a clear time plan to exit from the external input based industrial agriculture.

2. **Institutional Architecture:** To make the policy on sustainable agriculture work among the farmers, an appropriate institutional architecture needs to be set up to deliver both ecosystem services and effectively deal with the pre harvest and post harvest needs of the small and marginal farmers (Nayak, 2013a).
3. **Producer Organization Design:** Facilitate formation, revival and stabilization of local level optimally sized organizations owned and managed by the small farmers that can serve as a single window for delivery of the ecosystem services and provide external linkages including local value addition and marketing of surplus produce on behalf of the community of small farmers in a cluster. The present institutional platforms of the poor and small farmers such as SHGs, CIGs, Joint Liability Groups, Farmer Clubs, SHG Federations, Producer Groups, PACS, and Producer Companies are not scientifically designed to optimize the various issues of the small farmers, characteristics of agriculture and the characteristics of the market economy (Nayak, 2012b, 2013a).
4. **Codification:** The science and practice of sustainable agriculture needs to be invested upon and systematically codified for better knowledge transfer and to develop a "System of Sustainable Agriculture" that may be referred to by all stakeholders (farmers, students, researchers, research institutions, Universities, NGOs, & policy, & public/consumers) in agriculture. The foundation of such a body of knowledge seems to be rooted on soil health, seed, moisture, mixed cropping, integrated agriculture, and convergence with the local ecosystem (Howard, 1940, 1947, Gopalakrishnan, 2012, Rupela, 2011, Nayak, 2012a, 2012c).
5. **Adoption:** Replication of the existing and improvised practices of sustainable agriculture is critical to transform today's unsustainable agriculture to sustainable agriculture. All the above points need to be taken care of, to encourage farmers to adopt sustainable agriculture. Through regular training and social communication, farmers need to be made more and more aware about the inter-connectedness of agricultural practices and the critical need for better understanding of the logic of inter-dependence and cooperation for greater productivity and sustainability of our agricultural ecosystem (Nayak 2013b).

Farmers practicing Sustainable Agriculture & their Performances

Sl No	Name of Farmer	State	Total Land (in acres)	Total Gross Income per year (in INR)	Gross Income per acre per year (in INR)	Gross Expenditure per year (in INR)	Net Income per Acre per year (in INR)	Gross Expenditure as % of Gross Income
1	Bhaskar Save	Gujurat	14	25,00,000	1,70,000	80,000	172857	3
2	Subash Sharma	Maharastra	10	14,00,000	1,40,000	8,00,000	60000	57
3	Depak Suchde	M.P.	6	6,00,000	1,00,000	96,000	84000	16
4	Tony Thomas	Kerala	7	7,00,000	1,00,000	1,25,000	82143	18
5	Joseph Wadaketh	Kerala	2.5	3,00,000	1,20,000	60,000	96000	20
6	Chandramma	A.P.	20	3,50,000	17,500	1,10,000	12000	31
7	Ravjeet Singh	Punjab	11	7,15,000	50,000	2,20,000	45000	31
8	Belagola Farm	Karnataka	7.28	4,00,000	45,000	3,00,000	13736	75
9	Krushna C. Bebarta	Odisha	20	10,00,000	50,000	4,00,000	30000	40
10	Natabar Sarangi	Odisha	5	3,00,000	60,000	18,000	56400	6
11	Raju Titus	M.P.	13.5	22,00,000	1,63,000	1,80,000	149630	8
12	Sundaraman	Tamilnadu	10	4,00,000	40,000	150,000	25000	38
13	Navaneeth Krishnan	Tamilnadu	5.56	6,50,000	1,16,906	3,50,000	53957	54
14	Nalla Kerai	Tamilnadu	0.5	6,00,000	--	1,70,000	--	28
15	Raja Murugam	Tamilnadu	3.5	3,00,000	85,714	--	--	--
16	Purusotham Rao farm	Karnataka	10	5,00,000	50,000	3,50,000	15000	70
17	Jayant Bharve	Maharastra	30	16,00,000	53,333	8,00,000	26667	50
18	SAMBHAB	Odisha	90	18,00,000	20,000	6,00,000	13333	33
19	Ramesh C.Dagar	Haryana	108	150,00,000	1,30,000	105,00,000	41667	70
20	Dr. Mathew Mathew	Kerala	120	118,25,000	98,540	74,70,000	36291	63

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