Annual Report

2010-11

Satvik : Promoting Ecological Farming
26, First Lane, Banker's Colony
Nr. Jubilee Ground
Bhuj – Kachchh (370001)
Phone : +91 2832 254872
Email : satvik.india@gmail.com

About Satvik …

Satvik : Promoting Ecological Farming (Satvik) has been promoted by group of motivated organic farmers who came together share their excitement and their practice at the turn of the century later formalized in 2007.

The relatively low and erratic rainfall of arid regions, like Kachchh have challenged the indigenous populations to develop some of the finest crop and animal biodiversities - which have not only reduced risks to adequately feed their human and animals populations, but will in the future, prove to be critical in providing genetic material to face the challenges of climate change. Complex web of loops has been established that feed into one another wherein byproduct becoming primary inputs and the value chain takes place within the eco region. This has created efficiencies, economies and dependencies that promote strong and sustainable communities.

Satvik is reinvesting efforts in scientifically documenting their benefits; promoting their further development; reinstate a confidence and dignity amongst its farmer practitioners - towards self contained societies and economies that are self dependant for their food security and only export their surplus.

Objective :

To Promote, conceptualize, encourage, aid, organize, assist, support, facilitate, undertake various aspects of ecological farming techniques including distribution, promotion, marketing and trade of such produce, in its all forms, for strengthening of livelihood of marginal farming community and improvement in the health of the people irrespective of caste, class, gender, race and religion.

Governing Board

Sr. No.	Name	Designation	Remarks
1	Prof. Sukhpal Singh	President	
2	Sh. Vijay Maganlal Shah	Vice President	
3	Sh. Shailesh Mohanlal Vyas	Secretary	
4	Sh. Shailesh Dayaram Gor	Treasurer	
5	Sh. Manoj Purshotam Solanki	Governing Board Member	
6	Dr. Yogendrasinh Jilubha Jadeja	Governing Board Member	
7	Sh. Tushar Charandas Dayal	Governing Board Member	Date of Leaving : 28/7/2010
8	Sh. Kapilkumar Jagdishchandra Shah	Governing Board Member	
9	Sh. Sushma Iyengar	Governing Board Member	
10	Sh. Sandeep Indu Virmani	Governing Board Member	
11	Sh. Nanalal Hirji Satra	Governing Board Member	Enrolled on : 2/3/2011

Contents :

1. Strengthening Sustainable Agriculture

1.1. Study : Comparison of GHG Emission and Irrigation Water Usage in Rainfed and Irrigated Farming

Satvik has undertaken a study on emissions of greenhouse gasses (GHG) in irrigated farms and rainfed farms in Gujarat. Since the culmination of the Green Revolution, India has reaped many of the benefits and faced many issues as a result of the agricultural overhaul. In the face of a changing climate, the problems of the past are becoming exacerbated. Arable land is at a premium in many parts of the country, water tables are low and many farmers face difficulty in sustaining their livelihoods. Yet in reckoning with food production in the future, it is necessary, in light of climate change, to consider the ramifications of agro-industrial greenhouse gas emissions and water use on future generations.

Rainfed farming, a system, as the name suggests, that relies solely on precipitation, has emerged as an alternative to the irrigated farming system. The most widely used method of farming for sustenance of farmers throughout India for long time, rainfed farming has largely been left out as food production is targeted. Instead, irrigation farming is the preferred method to produce as much food and as fast as possible. It is estimated by the Indian Council of Agricultural Research that, by 2013, India will reach its full irrigation potential, leaving over half of all farms in rainfed systems and still without the financial assistance to reach their full production potential.

In this study comparison of the CO2 equivalent production in practices of irrigated farms and rainfed farms was carried out. Additionally, in order to study the hypothetical results of increased investment, the study looked at what increasing production in each farming system would mean for GHG production and the use of water.

In order to compare Green House Gas (GHG) emission in rainfed and irrigation agriculture, a survey was conducted, analyzing energy use in farms by conducting sample survey spreading across state of Gujarat. The survey was taken over three seasons, the summer from March 2009 to June 2009, the monsoon season from July 2009 to October 2009 and the winter, from November 2009 to February 2010. Equal groups of irrigation farmers and rainfed farmers were selected and the study was tailored to match up crop specializations in each category. Survey tram from Arid Communities and Technology has conducted farm survey. Altogether, 19 villages were visited to study rainfed farming, spread out throughout 9 districts of Gujarat and 32 villages were included in the study of irrigation farming, in 12 districts. In total, 120 farmers were surveyed and 77 were ultimately included in the analysis. Survey forms which were incomplete are not included in the presented data. Additionally, due to lack of information on rainfed rice and cumin, these crops were not incorporated in analysis. In analysis Satvik has received support from TERI, Development Alternatives, ICAR and IARI. Mr. Nalin Srivastav (Programme Officer in charge of Agriculture Forestry and Land Use (AFOLU) in the IPCC NGGIP TSU and Institute for Global Environmental Strategies (IGES)) has helped calculating GHG emission

Findings were broken down into three major sections. GHG emissions were considered in both irrigated and rainfed farm system, looking at four categories of emitting activities – diesel use, electricity use from irrigation, chemical fertilizer application and compost use. This was further categorized by studying the resulting emissions in the cultivation of different crops throughout Gujarat. Taking this data on currently operating farms, we then extrapolated out what the resulting difference in emissions would be for increasing productivity on rainfed farms and on irrigated farms. Lastly, the study looked at water use currently being applied on farms as well as the increase in water use that is necessary to increase production.

The data shows trends about GHG production and water use. It was found that the average
irrigated farm produces significantly more GHG than rainfed farms, both on a per acre basis and on 100 Kg of production. When upgrading rainfed farms for higher production, the resulting GHG production is less

than the same kind of upgrading of an irrigated farm. For some crops, rainfed farms were even able to increase productivity while simultaneously reducing GHG emissions. In terms of water use, any increase of productivity on an irrigated farms results in an increase of water use.

	CO2 equivalents GHG Emission per Acre per Season (Kg.)			CO2 equivalents GHG Emission per 100 Kg. Production (Kg.)		
	Rainfed Farming	Irrigated Farming	Increase Compare to Rainfed Farming/Mango	Rainfed Farming	Irrigated Farming	Increase Compare to Rainfed Farming/Mango
Pearl Millet, Maize, Green Gram, Red Gram, Sesamum and Castor	104.11	498.45	4.79	29.77	70.76	2.38
Cotton (Lint+Seed)	144.03	787.97	5.47	37.57	62.29	1.66
Groundnut (Pod)	71.23	845.52	11.87	9.7	115.51	11.91
Wheat and Bengal Gram	89.72	413.45	4.61	21.34	33.13	1.55
Average	**102.27**	**636.35**	**6.22**	**24.60**	**70.42**	**2.86**
Mango	-	591.82		-	21.48	
Sapota	-	1297.78	2.19	-	23.67	1.10
Banana	-	2900.26	4.90	-	9.18	0.43

Emission from Use of Diesel, Electricity and Chemical Fertilizers.

Table : Estimated CO2 equivalents GHG Emission - Crop/Crop Groups wise per Acre and per 100 Production in Rainfed and Irrigated Farming System

	Irrigation Water Use per Acre per Season (CUM)			Irrigation Water Use per 100 Kg. Production (CUM)		
	Rainfed Farming	Irrigated Farming	Increase Compare to Pearl Millet etc/Mango	Rainfed Farming	Irrigated Farming	Increase Compare to Pearl Millet etc/Mango
Pearl Millet, Maize, Green Gram, Red Gram, Sesamum and Castor	-	1285.31		-	182.47	
Cotton (Lint+Seed)	-	1786.60	1.39	-	141.24	0.77
Groundnut (Pod)	-	1697.04	1.32	-	231.84	1.27
Wheat and Bengal Gram	-	1465.66	1.14	-	117.46	0.64
Average		**1558.65**			**168.25**	
Mango	-	701.16		-	25.45	
Sapota	-	3734.52	5.33	-	68.11	2.68
Banana	-	42972.63	61.29	-	136.08	5.35

Table : Estimated Volume of Irrigation Water Used per Acre and per 100 Kg Production in Irrigated Farming System

	Contribution of 1 Kg CO2 Equivalents Emission per Acre per Season in Increasing Productivity (Kg.)	
	Rainfed Farming	Irrigated Farming
Pearl Millet, Maize, Green Gram, Red Gram, Sesamum and Castor	7.134	3.778
Cotton (Lint+Seed)	Survey suggest that Productivity can be increased with reduced emission	0.747
Groundnut (Pod)	4.346	0.217
Wheat and Bengal Gram	Survey suggest that Productivity can be increased with reduced emission	2.697

Emission from Use of Diesel, Electricity, Chemical Fertilizers and Compost.

Table : Contribution of 1 Kg CO2 Emission per Acre per Season in Increasing Productivity

Detail of this study is documented in a report titled "Comparison of GHG Emission in Rainfed and Irrigated Farming : A Case Study in Gujarat". On 21st December 2010 finding of this study was presented to 20 experts from agriculture, water, management, sociology and administration for peer review.

1.2. Study : Compendium of Organizations and Platforms in Climate Change in Semi-arid and Arid regions of India

Climate change is already forcing agricultural practices to adapt, but appropriate interventions in this sector can contribute immensely to reduction of harmful emissions and contribute to mitigation as well. Promotion of conservation based agriculture, such as rainfed farming, low external input agriculture, conservation and use of agro biodiversity, promotion of organic farming, use of traditional knowledge etc, will be useful both in adaptation and mitigation. Alongside farmers will require support from agriculture research including weather forecasting and tools to mitigating to reduce the increasing risk to their livelihood.

Looking at the emerging issues of impact of climate change on Indian agriculture and the imperatives of adaptation, India's agricultural research institutes, delivery based organizations, academic institutes, National and International funding organizations, civil society organizations and networks of various kind have already started working on addressing these issues. With the new mandate, SDC has commissioned a task to Satvik: Promoting Ecological Farming (Satvik is a Bhuj-Kachchh based not-for profit organization working on field based and academic research on sustainable farming for its promotion) to undertake an exercise and compile details of organisations, actors, platforms etc. that are relevant in the field of Climate Change adaptation in Semi-Arid and Arid Areas of India.

The focus of the exercise is to document/ cover all:

- Institutes and agencies involved in all aspects in
    - Promotion of rain-fed agriculture, low external input sustainable agriculture and organic agriculture
    - Validation and promotion of use of traditional indigenous knowledge and practices in agriculture
    - Biodiversity conservation with respect to seeds and its relevance for food security
    - Climate models/Weather monitoring and forecasting/Weather and farm advisories
    - Assessment of vulnerability to climate change/Concepts of risk and resilience and adaptive capacity/Tools for climate check
    - Watershed/Ecosystems based approaches towards climate change adaptation
    - Management of climate risks in development; integrating disaster risk reduction (especially climate related extreme events) into climate change adaptation
- Centrally and state sponsored schemes
- Blending adaptation with mitigation in agriculture ("low carbon growth")
- Regional focus: Arid and semi-arid regions of Western India, i.e. Rajasthan, Gujarat, Maharashtra, Bundelkhand, Northern Andhra Pradesh (AP) and Northern Karnataka

To collect the information on a large number of organizations in a shorter time span, the Satvik team has used the web portal of the respective organizations extensively. To get the precise information from the large volume of information uploaded on the web portal, Satvik team has used the set of key words, as per given focus, to find and filter the information. Very often the issues of climate change adaptation were not being explicitly addressed in several organisations' work and activities. In such cases, Satvik team has looked at the relevance and importance of the activities pursued by the organizations in relation to climate variability and climate change adaptation and documented essentially those which are most directly relevant to climate change adaptation and mitigation. In the same way restricting organization's work to Western India is also a difficult task, in critical cases Satvik team has documented the information as per its relevance.

The information collected from the web portal for every organization is largely organized in the following way:

- Introduction of the organization including mission, vision, mandate and objectives
- Important projects the organization is implementing
- Important achievements of the organization
- Future vision/thrust of work
- Contact details
- Source of the information

In some cases Satvik has requested organizations to provide details. After compilation of information from web portal Satvik team has shared this information with receptive organizations to get their inputs to finalize the write up.

Organization wise information is categorized in the following fashion:

Introduction	
Arid and Semi-arid regions of India	
Premier Institute	3 Organizations
Agricultural Research Institute – Production System Focused	6 Organizations
Agricultural Research Institute – Production Science Focused	4 Organizations
Agricultural Research Institute – Zone Focused	1 Organizations
Agricultural Research Institute – Crop Focused	6 Organizations
Weather Institute	1 Organizations
Academic Institute	2 Organizations
Mission	3 Mission
Bureau and Authority	5 Bureau and Authority
Network Project	4 Projects
Financial Institute	2 Organizations
Schemes	5 Schrmes
State Initiatives	5 Initiatives
State Agricultural Universities (SAU's)	Gujarat – 4 Universities Rajasthan – 2 Universities Maharashtra- 4 Universities Madhya Pradesh – 2 Universities Karnataka- 3 Universities Andhra Pradesh – 2 Universities
National and International Support Agencies	15 Organizations
Civil Society Initiatives	Organic and LISA – 5 Organizations Agro-Biodiversity – 6 Organizations Indigenous Knowledge – 2 Organizations W/S and Commons – 3 Organizations
Network and Platform	4 Network and Platforms
Education on Climate Change	4 University/Institute

With this focus and efforts Satvik team has prepared this Compendium of Organizations and Platforms in Climate Change in Semi-arid and Arid regions of India in August 2010 in navigable CD form. This CD provides an easy to use listing of Organisations and Platforms working on various aspects of Climate Change with particular emphasis on Agriculture in Arid and Semi Arid areas in India.

With changing climate conditions, the agricultural sector has to undergo progressive adaptation and can also contribute to the mitigation of climate change effects. The promotion of conservation based agriculture, such as rainfed farming, low external input agriculture, conservation and use of agro biodiversity, promotion of organic farming, use of traditional knowledge etc…, will be useful both in adaptation and mitigation. Along with this farmers will need the support of modern agriculture research

including weather forecasting and tools to mitigate the increasing risk on his/her livelihood. We hope that this compendium would prove to be useful to development practitioners, support agencies, civil society organizations, academic circles, researchers, planners, farmers, students and other stakeholders.

1.3. Action Research

In collaboration with Sajjata Sangh, Satvik has facilitated trail of low irrigation water demanding wheat variety named Amrita (HI 1500) at 3 locations in organic farming. Along with farmers Satvik team has monitored the trail and helped farmer in record keeping.

Item	**At Manojbhai Solanki's Farm, Nadapa**		**At Makavana Krishi Tirth, Sinugra**		**At Ravjibhai Gorasiya, Sedata**		**Performance of Amrita HI 1500 over Bansi**
Wheat Variety	Amrita HI 1500	Bansi	Amrita HI 1500	Bansi	Amrita HI 1500	Bansi	
No. of irrigation provided after Sowing	4	6	7	7	6	6	10 % less irrigation was provided
Production Kg per Acre	933	1454	394	309	493	545	20 % less production was harvested

1.4. Capacity Building

On Filed Input by Expert

On request of Satvik, Dr. S P Raut, Plant Pathologist from Dapoli Agricultural University of Maharashtra has visited Kachchh during 7th and 8th January 2011. Filed visit of Dr. Raut was organized in Mango crowing areas to provide inputs to farmers on organic way of pest management in Mango. Meetings were organized at Bhudiya Kesar Farm, Bhujodi, Makavan Krishi Tirth, Sinugra and Panchamrut Farm, Khrisara. 100 farmers have participated in field to get inputs. Farmers have suggested that as in Mango flowering had initiated such inputs were very much timely.

Training

- Satvik in collaboration with Bhachau Setu has organized trainings at Adhoi and Kharoi on 26th and 27th August 2010 respectively on organic way of pest management in rainfed crops. 85 farmers have participated.
- Satvik has encouraged 2 participants each from VRTI, SJS and ACT to participate in a training organized by Sh. Sh. Ravishankar's Ashram, Bangalore on organic farming. In this training Subhash Palekar has provided lead inputs.
- Representative of Satvik has provided inputs on Natural Resource Management in context of Planning cried out by Gram Panchayats in a training organized by Kachchh Nav Nirman Abhiyan during 23rd and 24th February 2011.
- Provided orientation to PARAB staff on potential of organic farming in strengthening livelihood by organizing discussion and filed tours during March 2011.

Workshops

- Representative of Satvik has participated in a workshop title Climate Change Actions in Semi-Arid Areas organized by Development Alternatives at Janshi on 27/4/2010 and 28/4/2010.
- Representative of Satvik has participated in a workshop title National Workshop on practical Climate Change Actions in Semi Arid Areas organized by WOTR at Poone on 1/7/2010 and 2/7/2010.

1.5. Networking and Support

Working with Revitalizing Rainfed Area Network

The network has emerged based on the collective understanding that agricultural policies designed for relatively secure and well-endowed parts of the country have been indiscriminately extended to rainfed areas. Such an extension has contributed to a range of crises, including the depletion of groundwater and natural resources, escalating input costs, and a secular decline in farmers' incomes resulting into distress. RRA network has following Thematic Focus:

- Enhancing organic inputs into soils
- Establishing appropriate seed systems
- Enhancing production and consumption of millets
- 'Water for All' – access to protective and productive water for securing livelihoods of many
- Inland fisheries in seasonal water bodies in rainfed areas
- Rainfed livestock – focus on small animals & services
- Credit and institutions

Following activities have been carried out with RRA Network:

- Representative of Satvik has participated in a write shop on Millet system organized by WASSAN at CRIDA, Hyderabad on 13th May 2010.
- Representative of Satvik has participated in a two network meeting organized at Hyderabad and Delhi on 14th May and 3rd-4th June 2010 respectively.
- Satvik has facilitated WASSAN to organizing write shop on Seed system at Ahmedabad on 27th and 28th January 2011. 35 participants have participated in this write shop. Outcome of the meeting was as follow.

Working with NPMi and Safe Harvest Network

8 organizations working in various part of country on promotion of sustainable farming were facing problem in facilitating farmers in accessing market due to lack of proper knowledge and organizational form. Based on the series of discussions we have formed promotion and certification arm in the name of Non Pesticide Management Initiative (NPMI) Society and marketing arm in the name of Safe Harvest Pvt. Ltd. (SHPL) to facilitate farmers in cultivation and marketing of Organic and NPM produces grown by the farmers with whom they are closely working.

On behalf of Satvik Shailesh Vyas is a Founder and Director of Safe Harvest Pvt. Ltd. However due to lack of working capital with both the parties this year market ties up of Organic Rainfed Farmer Group of Bhachau and Rapar Taluka and Nakhtrana Taluka with SHPL has not materialized.

Support to Drought Proofing Programme

Kachchh Nav Nirman Abhiyan is implementing a drought proofing programme on strengthening livestock services. Shailesh Vyas of Satvik is a member of Steering Committee.

Support to Akhil Gujarat Sajivkheti Samaj

Akhil Gujarat Sajivkheti Samaj has decided to organize its Biannual National Meet of Organic Farmers at Anand during 15th to 17th December 2010. Shailesh Vyas, Manoj Solanki, Shailesh Gor and Nikita Gor of Satvik were on various committee of this event. Satvik has volunteered o take up responsibility of registration of participants and organizing Shamiyana, light and sound for plenary and night stay at Bhai Kaka Krushi Kendra Farm.

2. Facilitation of Organic Certification and Forward Linkage

2.1. Organic Rainfed Farmer Group of Bhachau and Rapar Taluka

Satvik has Have facilitated farmers of Bhachau and Rpaar Taluka to get organic certification for the year 2010-11. From this year APEDA has put limit on number of farmers in a one ICS to 500. Looking at this amendment Satvik has helped Setu to reorganize their ICS in required manner. This was inspected and certified. Satvik has also facilitated Rainfed Farmer Group of Bhachau and Rapar Taluka for getting transaction certificates.

Agency	Project	No. of Villages	Farmer No. Split	Area in Ha.
Onecert	Kabrau Centre	7	347	1127.13
	Kharoi Centre	11	561	1758.49
	Adhoi Centre	8	460	1367.5
	Samakhyali Centre	6	550	2161.75
	Pragpar Centre 1	1	402	1208.5
	Pragpar Centre 2	3	316	925.51
CUC	Adesar Centre 1	7	539	1550.77
	Adesar Centre 2	3	488	1486.25
	Adesar Centre 3	3	499	1435.52
	Samakhyali Centre	5	503	1849.93

Along with Kahchh Nav Nirman Abhiyan, Satvik has encouraged Rainfed Farmer Group of Bhachau and Rapar Taluka for registering as Producer Company. Satvik has further mobilized support of ALC India for Rainfed Farmer Group of Bhachau and Rapar Taluka to build their capacity in development of business plan and monitoring system for their business activity.

2.2. Organic Mango Growers

Satvik has facilitated organic mango growers to supply 96 MT of organic mangos to ITC. Later Satvik has facilitated 25 organic mango growers for making application for organic certification in their individual name. Satvik has helped to get quotation and in required documentation.

2.3. Organic Castor Grower and Processor

Satvik has facilitated 5 organic castor grower and CPC for renewal of organic certification. Satvik has further facilitated CPC to get Certification of Inspection for their processing and supply.

3. Conservation of Traditional Seeds and Seed Security : Anmol

3.1. Traditional Seed Collection

During the year 2010-11 following Traditional Seeds were collected to understand its character.

Crop	Name of Seed Breeder Farmer	Village
Sorghum	Devsibhai Patel	Madhapar
Green Gram	Lakhiben Raja Ahir	Vang

3.2. Nutritional Analysis of Traditional Seeds

Traditional seeds collected were planted at one location and the produce (grain and fodder) was analyzed for its nutritional content. For this purpose service of Advance Research and Analytical Services (ARAS), Gaziabad was hired. Out come in brief is as below:

Crop	Variety Analyzed	Value	Parameter Analyzed							
			Carbohydrates (CHO) g/100g	Fat g/100g	Protein g/100g	Ca mg/100g	Fe mg/100g	Beta Carotene mg/100g	Gum Content g/100g	Oil g/100g
Pearl Millet - Grain	17 TV and 1 check	Minimum	74.43	3.57	9.15	270.00	5.90	N.D.		
		Maximum	76.80	4.21	11.26	320.00	9.60	N.D.		
Green Gram - Grain	17 TV and 1 check	Minimum	35.54	1.01	21.27	115.90	3.25			
		Maximum	70.16	1.25	27.01	188.60	5.90			
Moth Bean - Grain	5 TV and 1 check	Minimum	61.44	0.85	22.39	380.40	9.89			
		Maximum	65.23	1.00	24.96	385.10	11.12			
Cluster Bean – Grain	7 TV and 1 check	Minimum							37.20	
		Maximum							45.00	
Sesame – Grain	5 TV and 1 check	Minimum			21.61	800.90	1.05			42.86
		Maximum			24.04	880.60	1.40			48.59
Castor – Grain	5 TV and 1 check	Minimum								33.28
		Maximum								38.20

Crop	Variety Analyzed	Value	Parameter Analyzed							
			Crude Protein (CP) g/100g	Crude Fiber (CF) g/100g	DCP g/100g	TDN g/100g	Total Ash g/100g	Ca g/100g	Fe mg/100g	P g/100g
Pearl Millet – Fodder	17 TV and 1 check	Minimum	3.46	29.39	0.51	84.20	6.06	0.20	15.03	0.08
		Maximum	4.61	31.63	1.56	86.98	6.57	0.87	21.81	0.19
Sorghum - Fodder	10 TV and 1 check	Minimum	1.92	30.19	1.15	86.49	4.12	0.65	18.99	0.13
		Maximum	3.26	33.19	1.96	89.10	4.43	0.71	26.71	0.16
Green Gram - Fodder	17 TV and 1 check	Minimum	9.59	20.18	6.13	66.30	12.89	1.98	57.33	0.12
		Maximum	11.99	21.63	8.33	79.62	25.88	2.17	115.75	0.22

Moth Bean - Fodder	5 TV and 1 check	Minimum	8.15	28.12	4.81	71.89	15.32	0.00028	59.24	0.69
		Maximum	9.43	29.63	5.98	75.99	17.26	0.00035	137.79	0.93
Cluster Bean - Grain	7 TV and 1 check	Minimum	31.62	17.31	26.33	86.37	3.11	0.22	1.80	0.39
		Maximum	33.84	18.49	28.37	88.44	3.42	0.27	2.55	0.45
Cluster Bean - Fodder	7 TV and 1 check	Minimum	7.95	25.98	4.63	78.42	8.10	1.62	13.03	0.13
		Maximum	10.80	27.02	7.24	82.40	9.51	1.71	15.13	0.19

3.3. Trials to Understand Characters of Traditional Seeds of Rainfed Crops

In the year 2010-11 Satvik with the support of grassroots partners has encouraged farmers to voluntarily undertake trial sowing for Character Mapping of traditional seeds of Kachchh under rainfed condition.

Name of Organization	Villages	Pearl Millet	Sorghum	Green Gram	Moth Bean	Cluster Bean	Sesame	Castor
		17 traditional varieties and 1 check (recommended Variety)	**11 traditional varieties and 1 check (recommended Variety)**	**18 traditional varieties and 1 check (recommended Variety)**	**5 traditional varieties and 1 check (recommended Variety)**	**7 traditional varieties and 1 check (recommended Variety)**	**5 traditional varieties and 1 check (recommended Variety)**	**4 traditional varieties and 1 check (recommended Variety)**
V.R.T.I., Mandvi	Mandvi, Tragdi,	2 (0)	1 (0)	1 (0)	2 (0)	1 (0)	2 (0)	
V.R.T.I., Naliya	Tera, Lakhapar	2 (2)	2 (2)	2 (0)	2 (0)	2 (0)	2 (1)	1 (0)
Bhuj Taluka Setus								
Pachchham Setus	Khari	1 (1)	1 (1)	1 (0)	1 (0)	1 (1)	1 (1)	1 (0)
Bhachau Taluka Setus	Kuda, Vandhiya	2 (1)	1 (1)	2 (2)	1 (1)	1 (1)	2 (1)	
Adesar Setu	Nagtar	1 (0)	1 (0)	1 (0)	1 (0)	1 (0)		
Cohesion Foundation								
Ujjas Mahila Sangathan	Hatdi,	1 (1)		1 (0)				1 (0)
K.F.F.F.T.	Bandiya,	1 (0)	1 (0)	1 (0)	1 (0)	1 (0)	1 (0)	
Saiyare Jo Sangathan	Vang			1 (0)	1 (1)	1 (1)		
Satvik	Sinugra, Madhapar	2 (2)	1 (1)	1 (0)	1 (0)	1 (1)	2 (2)	1 (0)
Total Trials	13	12	8	11	10	9	10	4

Note : Figure in parenthesis express the number of plots in which either grain or fodder production was recorded in case of Pearl Millet and Sorghum and grain production recorded for Green Gram, Moth Bean, Cluster Bean, Sesame and Castor.

3.4. Demonstrations for Performance and Preference Evaluation

Selection of lines for demonstrations

Based on the data of year 2008-09 and 2009-10 following traditional varieties were short listed for demonstration for the year 2010-11.

Trial Code	Lines Short Listed for Demonstration (No. are Demonstration Code)								
	Pearl Millet – Eastern Kachchh	Pearl Millet – Central Kachchh	Pearl Millet – Western Kachchh	Sorghum	Green Gram	Moth Bean	Cluster Bean	Sesame	Castor
1		101		101		101	101	101	
2						102			101
3	101	102	101	102					
4	102	103	102	103	101		102	102	102
5			103			103		103	103
6					102	104	103		
7				104			104		
8	103	104	104	105					
9	104	105	105	106					
10	105	106		107					
11									
12									
13	106	107	106		103				
14									
15	107	108	107		104				
16	108				105				
17					106				
18									

Lines Selected by Farmers through Demonstrations

In the year 2010-11 lines selected for demonstrations expressed in above table, were planted at several location with the support of grassroot partners. Farmers have volunteerly undertaken the demonstrations and with their fellow farmers have selected the lines based on the performance and preference of a given line in their village.

Name of Organization	Village	Line Selected By Farmer Based on Demonstration (No. are Demonstration Code)						
		Pearl Millet	Sorghum	Green Gram	Moth Bean	Cluster Bean	Sesame	Castor
V.R.T.I., Mandvi	Nani Rayan	101 & 104		104				
	Tragdi	SND		SND		SND		
V.R.T.I., Naliya	Sudadhro Nani	SND	SND	SND		SND		
	Kukdau	103 & 107	101 & 102	101		SND	SND	
Bhuj Taluka Setus	Lodai			102				
	Umedpar				104			
Pachchham Setus	Tuga	SND		106			SND	
	Kaswandh	SND		SND				
	Huseniwandh	SND		103 & 105				

Bhachau Taluka Setus	Harinagar					103		
Adesar Setu	Nagtar	104		102		102		
	Badalpar				SND			
Cohesion Foundation								
Ujjas Mahila Sangathan	Patri	SND		103				
	Vanki	SND						
K.F.F.F.T.	Jasapar	SND	SND	SND	SND		SND	
	Bitiyari		SND	102 & 104			SND	
	Dhanawada	SND		104 & 106				
	Vamoti	SND	SND	SND			SND	
	Sayra	SND		104 & 106			SND	
	Bhedi Moti	106		105 & 106			102	
Saiyare Jo Sangathan	Vang	SND			103			Own seed
	Dador	SND					SND	SND

3.5. Activity with Seed Breeding Farmer

Since 2006 onwards Satvik has keep collecting traditional seeds from various parts of Kachchh. Farmers from whom Satvik has collected these seeds are popularly referred as Seed Breeding Farmers. During the crop growing season of Kharif 2010-11Satvik has made follow up with Seed Breeding Farmers to know their crop status, purity of field stock and his/her preparedness for further purifying the stock. Outcome in brief of follow up visits of Seed Breeding Farmers is as below:

Crop	No. of Seed Breeding Farmer	No. of farmers having successful crop in Kharif 2010-11	No. of farmers visited	No. of farmers have expressed their wiliness for selection in standing Crop	No. of farmers have expressed their wiliness to do roughing and then selection in standing crop
Pearl Millet	17	7	6	3	1
Sorghum	10	8	8	6	1
Green Gram	18	8	8	4	4
Moth Bean	5	4	3	1	2
Cluster Bean	7	4	4	1	2
Sesame	5	2	2	0	2
Castor	4	2	1	0	1

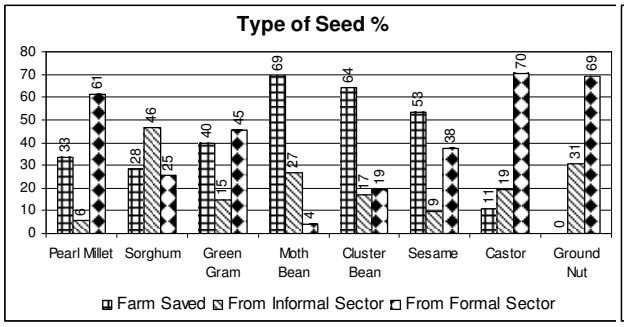
3.6. Capacity Building

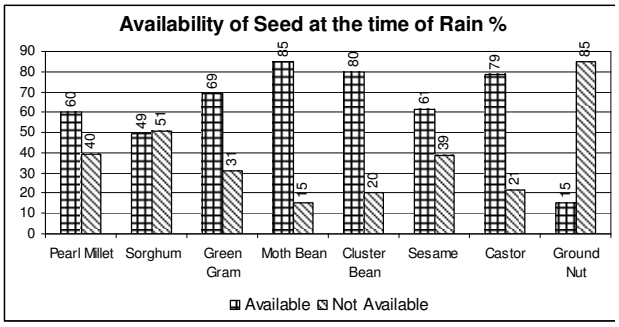
To enhance the capability of Seed Breeding Farmers to increase and maintain the purity of their seed stock by understanding science related to seed one day training programme was organized. Detail is as below:

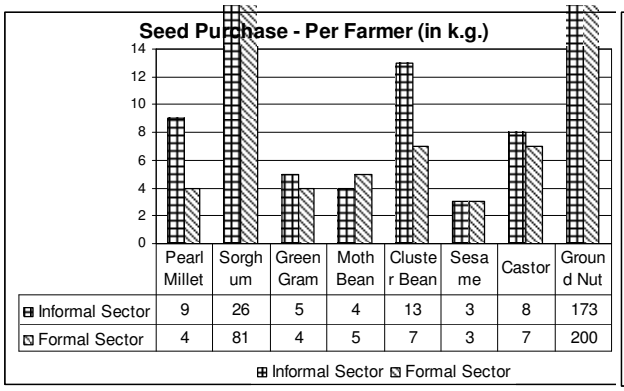
Name of Training Programme	Date	Place	For whom	Lead Trainer	No. of Participants
Increasing purity of traditional seed	5/5/2010	Nilpar	Seed Breeding Farmers and representatives of partners organizations of Bhachau and Rapar Blocks	Dr. S.N. Goyal	Male : 25 Female : 08
Increasing purity of traditional seed	6/5/2010	Kukma	Seed Breeding Farmers and representatives of partners organizations of Anjar, Mundra, Mandvi, Abdasa, Lakhpat, Nakhatrana, Bhuj Blocks	Dr. S.N. Goyal	Male : 16 Female : 06

3.7. Study

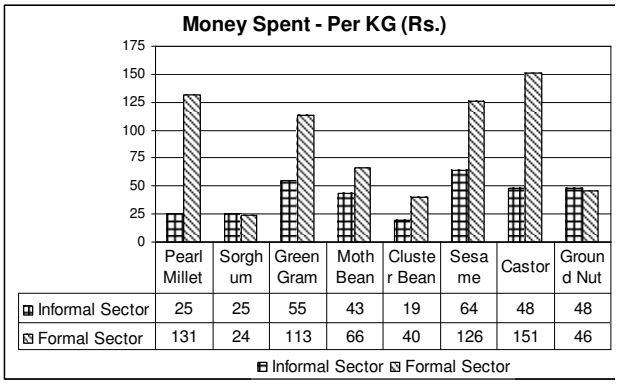
Before initiating the work on seed security based on traditional seeds Satvik along with 10 partners have carried out survey with 475 respondent from 29 villages across Kachchh district to understand problems and issues related to seed to rainfed farmers. Report of the same was compiled and published as 'Kachchh Ma Ram Mol Ma Biyarano Na Vapras Ni Paristhiti Ane Prashno'. Brief out come of this study is as below:



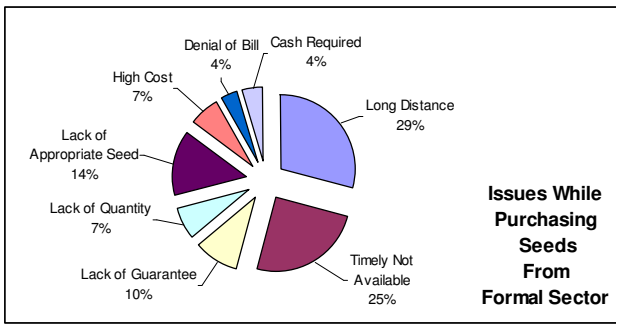




	Pearl Millet	Sorghum	Green Gram	Moth Bean	Cluster Bean	Sesame	Castor	Ground Nut
Informal Sector	9	26	5	4	13	3	8	173
Formal Sector	4	81	4	5	7	3	7	200



	Pearl Millet	Sorghum	Green Gram	Moth Bean	Cluster Bean	Sesame	Castor	Ground Nut
Informal Sector	25	25	55	43	19	64	48	48
Formal Sector	131	24	113	66	40	126	151	46



3.8. Publication

Nature of Publication	Title	Author	Published By	Time	Language
Technical Report	Traditional Seed : Evaluation and Demonstration Trials – Outcome of Rainfed Kharif 2008 and 2009 in Kachchh District	---	Satvik	June 2010	English
Technical Report	Traditional Seeds : Evaluation and Demonstration Trials – Analysis and Results of Rainfed Kharif 2009 in Kachchh District	---	Satvik	June 2010	English
Technical Report	Kachchh Ma Ram Mol Ma Biyarano Na Vapras Ni Paristhiti Ane Prashno : Kharif 2009 Vavetar Mojni Na Tarno	---	Satvik	September 2010	Gujarati

4. Financial Report

Satvik : Promoting Ecological Farming

Public Charitable Trust Reg. No. F-1541/Kachchh & Society Reg. No. Guj/1355/Kachchh

Balance Sheet as on 31.03.2011

Particular	Annexure	As on 31-Mar-11	As on 31-Mar-10
Funds & Liabilities			
Trust and Corpus Funds	A	1,609,119.00	1,554,040.00
Income & Expenditure Account	B	273,903.00	548,153.00
Current Liabilities	C	73,254.00	-
Total		**1,956,276.00**	**2,102,193.00**
Assets & Properties			
Net Block of Fixed Assets	D	1,465,910.00	65,305.00
Investments	E	-	425,000.00
Current Assets	F	490,366.00	1,611,888.00
Total		**1,956,276.00**	**2,102,193.00**
Notes forming part of Accounts	N		

For Satvik: Promoting Ecological Farming

Shailesh Vyas
Secretary

Place : Ahmedabad
Dated : 6/8/2011

As per our report of even date
For H.Rustom & Co.
Chartered Accountants
Firm Reg. No. : 108908W

Hafez Dalal
Proprietor
Membership No. 31368

Place : Ahmedabad
Dated : 6/8/2011

Satvik : Promoting Ecological Farming

Public Charitable Trust Reg. No. F-1541/Kachchh & Society Reg. No. Guj/1355/Kachchh

Income & Expenditure Account for the Year Ending on 31.03.2011

Particulars	Annexure	31-Mar-11	31-Mar-10
Income			
Grants & Donations	G	3,000.00	19,651.00
Other Income	H	2,129,578.00	1,589,865.00
Interest Income	I	88,774.00	11,392.00
Excess of Expense over Income	B	274,250.00	-
Total		**2,495,602.00**	**1,620,908.00**
Expenditure			
Expenditure on objects of the trust	J	1,923,786.10	858,638.00
Charity Commissioner's Contribution	K	32,025.00	22.00
Establishment Cost	L	204,837.90	52,482.00
Remuneration to Trustee	M	261,100.00	149,200.00
Depreciation	D	19,885.00	13,225.00
Trancefer to Corpus fund	A	53,968.00	-
Surplus of Income over exp.	B	-	547,341.00
Total		**2,495,602.00**	**1,620,908.00**

For Satvik: Promoting Ecological Farming

Shailesh Vyas
Secretary

Place : Ahmedabad
Dated : 6/8/2011

As per our report of even date
For H.Rustom & Co.
Chartered Accountants
Firm Reg. No. : 108908W

Hafez Dalal
Proprietor
Membership No. 31368

Place : Ahmedabad
Dated : 6/8/2011

Satvik : Promoting Ecological Farming
26, First Lane, Banker's Colony
Nr. Jubilee Ground
Bhuj – Kachchh (370001)
Phone : +91 2832 254872
Email : satvik.india@gmail.com