



State Policy on Organic Farming Government of Sikkim

Sikkim Organic Mission, FS&AD and H&CCD Departments
Government of Sikkim, Krishi Bhawan
Tadong, East Sikkim

Preface

Sikkim is the first state of India to officially announce adoption of Organic Farming in the year 2003 and the only state of India to convert entire state into organic. In view of long term sustenance of soil fertility, protection of environment and ecology, healthy living and decreasing the risk of health ailments and many other indirect benefits the decision for adoption of Organic Farming has been welcomed by all. Today, Sikkim is well known as an Organic state not only in the country but at International level also.. Ever since the declaration to adopt organic farming was made all efforts are being made to make it a reality. To implement the programmes of organic farming in a mission mode Sikkim Organic Mission was launched on 15th August 2010. The process of Internal Control System development and Certification is in progress as per target and by 2015 the entire state shall be certified as organic.

A working policy was framed in 2004 to start implementation of the programmes of organic farming which includes agriculture related activities only. Animal Husbandry is an integral part of agriculture and cow dung is the primary source of plant nutrients in organic system of farming. Therefore, obviously the dung used as manure should be free of chemical residues. Similarly seeds and planting materials have to be produced locally to ensure chemical free basic input. The organic produces of Sikkim should be branded and marketed in the National and International markets to fetch premium price.

A well defined Government Policy on Organic Farming is inevitable. Sikkim Organic Mission Cell has prepared a simple action oriented State Policy on Organic farming which may help all the stakeholders of Organic farming in their endeavor to make Sikkim a real, total Organic state of India. I congratulate the concerned officer for his effort and hope this document will serve as a useful guide for those involved in the planning and implementation of Organic Farming programmes in the state.

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SIKKIM ORGANIC FARMING POLICY

INTRODUCTION

Organic farming has been a traditional way of farming in Sikkim adopted by farmers since ages. Due to unavailability of assured irrigation farmers practice rainfed farming system with an integrated approach and Integrated Farming System is predominant in the state with agriculture, horticulture animal husbandry in perfect coordination. Sikkim is rich in biodiversity with abundant plant species because of which the soil is rich in organic matter content and makes the conversion easier. The fragile ecosystem in Sikkim hills demand sustainable farming practices without depletion of natural resources. It is therefore advantageous for Sikkim to go into organic system of farming keeping in view of protection of the soil from degradation, protection of environment & ecology and healthy living of the people for generations. The state produces varieties of crops due to varied agro climatic condition ranging from subtropical to alpine. Sikkim is divided into five agro-climatic zones- Tropical Zone, Sub Tropical Zone, Temperate zone, Sub Alpine Zone and Alpine Zone. The main agricultural land falls in Tropical, Subtropical and Temperate Zones

The total geographical area of the state is 7,29,900 hectares out of which farming is done in about 10.20 % area (74,303 hectares) only where all the farming activities take place and rest of the area constitutes of forest cover, permanent pastures, culturable waste, barren and uncultivable, land put to non agricultural use, land under miscellaneous trees and groves etc.

The main crops are maize, rice, buckwheat among cereals, urd & rice bean among pulses, soybean and mustard among oilseeds. The main horticultural crops are orange & pears among fruits, ginger, cardamom, turmeric and cherry pepper among spice crops, cole crops, peas & bean, tomato, potato among vegetable crops. Besides, production of potato & pea seeds at high altitude and off season vegetables cultivation is done extensively. Of late, cultivation of flowers like cymbidium, rose, gerbera, anthurium is generating good income to farmers and a large number of farmers have adopted floriculture as a commercial venture. The details of area, production and productivity of different crops are given in the following tables.

AREA, PRODUCTION AND PRODUCTIVITY OF FIELD CROP IN SIKKIM DURING 2013-14

SL. No.	Crop	Area in 000' hectares	Production in 000' MT	Productivity (kgs/ha)
A.	CEREALS:			
1	Rice	11.92	21.34	1790.27
2	Wheat	0.52	0.55	1057.69
3	Maize	39.97	67.95	1700.03
4	Millet	2.98	2.96	993.29
5	Barley	0.59	0.59	1000.00
6	Buckwheat	3.56	3.38	949.44
	Total Cereals:	59.54	96.77	1625.29
B.	PULSES:			
1	Urd	3.27	2.91	890.00
2	Other Pulses	3.10	2.92	941.94
	Total Pulses:	6.37	5.83	915.22
	Total Food Grain:	65.91	102.6	1556.67
C.	OIL SEEDS			
1	Rape & Mustard	4.38	3.50	799.09
2	Soybean	3.86	3.61	935.23
	Total Oil Seed:	8.24	7.11	862.86

AREA, PRODUCTION AND AVERAGE YIELD OF HORTICULTURAL CROPS DURING 2013-14

SL. No.	Crop	Area in 000' hectares	2013-2014	
			Production (000MT)	Av. Yield (kgs/ha)
A.	FRUITS:			
1	Apple	0.051	0.028	1210
2	Banana	1.615	3.890	6030
3	Guava	1.076	0.105	1380
4	Kiwi	0.093	0.780	805
5	Litchi	0.305	0.027	503
6	Mandarin Orange	9.457	16.850	3312
7	Peach/Plum	0.181	0.090	1507
8	Pear	1.175	1.535	3010
9	Passion Fruit	0.525	0.150	250
10	Papaya	0.175	0.565	1130
	Total	14.653	24.020	4002

SL. No.	Crop	Area in 000' hectares	2013-2014	
			Production (000MT)	Av. Yield (kgs/ha)
B.	VEGETABLES:			
1	Beans	1.110	5.533	4985
2	Brinjal	0.258	1.663	6448
3	Bitter gourd	0.310	1.883	6075
4	Bottle gourd	0.178	1.445	8120
5	Broccoli	0.125	0.612	4895
6	Cabbage	1.205	7.248	6015
7	Cauliflower	0.775	4.173	5385
8	Capsicum	0.030	0.092	3075
9	Carrot	0.360	2.818	7827
10	Chilli	0.090	0.315	3499
11	Chayote	2.365	8.667	3665
12	Cucumber	0.065	0.297	4575
13	Lady's finger	1.125	7.458	6630
14	Leafy vegetables	2.435	11.091	4555
15	Onion	0.315	1.709	5428
16	Palak	0.330	1.229	3725
17	Pea	1.995	9.147	4585
18	Radish	0.740	5.420	7325
19	Tomato	0.995	8.955	9000
	Total	14.806	79.755	5386
C.	ROOTS & TUBERS:			
20	Kharif Potato	5.300	23.982	4525
21	Rabi Potato	4.755	25.153	5290
22	Other Root & Tuber	0.700	3.622	5175
	Total	10.755	52.757	4905
D.	SPICES:			
1	L. Cardamom	16.010	3.842	240
2	Ginger	9.250	51.568	5575
3	Turmeric	1.300	4.680	3600
	Total	26.560	60.090	2262

SL. No.	Crop	Area in 000' hectares	2013-2014	
			Production (000MT)	Av. Yield (kgs/ha)
E.	FLOWERS:			
1	Cymbidium	0.035	30.00	-
2	Rose	0.023	23.00	-
3	Alstroemeria	0.015	14.50	-
4	Anthurium	0.009	4.50	-
5	Gerbera	0.030	17.00	-
6	Calla Lily	0.018	18.50	-
7	Lilium	0.039	32.60	-
8	Gladiolus	0.029	65.00	-
9	Carnation	0.007	9.00	-
10	Others including traditional			
	flowers (loose)	0.017	26.50	-
	Total	0.222	240.60	

IMPORTANT CASH AND COMMERCIAL CROPS AND ITS ANNUAL TURNOVER IN THE STATE

SL. No.	Crop	Area in hectares	Production (MT)	Annual Turnover (in Lacs)
1	Cardamom	16,010	3,842	23052.00
2.	Ginger	9,250	51,568	10314.00
3.	Turmeric	1,300	4,680	749.00
4.	Off season vegetables	5,762	5,292	929. 20
5.	Sikkim Mandarin	9,457	16,850	6740.00
6.	Seed potato	5,300	23,982	3597.00
7.	Pea including seed pea	1,995	9,147	627.00
8.	Buckwheat	3,560	3,380	676.00
9.	Flowers (Prdn in lakhs)	66.77	216.62	324.93

RESOLUTION ADOPTED BY THE STATE GOVERNMENT

It was a historic moment for Sikkim when Hon'ble Chief Minister, Government of Sikkim brought a resolution in the State Assembly in the year 2003 for transforming the state into a "Total Organic State" by adopting certain policy interventions which reads as follows:-

Hon'ble Members of Legislative Assembly,

I am pleased to announce a long awaited policy initiative of declaring Sikkim as a "Total Organic State" meaning that the use of chemical fertilizers will be gradually done away with. You will appreciate that uncontrolled and haphazard application and use of chemical based inputs is hazardous to the lives of human being including livestock. In this context, I would like to illustrate one related episode from a news paper featuring a story of birds which consumed affected insects from farm fields in Assam where large quantities of pesticides were being used. The story further talks about how farm rodents that devoured these birds also died and how finally snakes which consumed the infected dead rats also died. The chain of events is not only pathetic and fatal but also disturbs the natural balance between the prey and the predator: a phenomenon which is naturally inevitable in the context of law of nature. One need not look far to support this argument. For instance, Darjeeling hills which boasts of being the World famous tea producer was compelled to revert back to organic farming methods in order to win back the losing demand from overseas in view of the report that Darjeeling tea was being produced using chemical based methods. The Ambotea tea estate in Kurseong is gaining prominence in the tea market because it adopted organic based practices. It is a known fact that people are increasingly getting away from chemical based products. The UK Government banned the use of 11 chemical pesticides in the 1980s as this was considered to be potentially carcinogenic and attributed to the birth deformities and gene mutations. Further it is a universal fact that there is growing appeal among people being in favour of organic based food commodities which fetch price four to six times higher than chemical based products. In keeping with my Government's concern for preservation of sensitive ecology and environment. Our state with an average fertilizer consumption rate of 5.8 kgs per ha in the third lowest fertilizer consumption state in the country.

Hon'ble members will agree with me that traditionally our farmers practiced organic farming and hence the possibility of reverting back to this age old practice is not difficult. Against this backdrop, I propose the following policy interventions towards realizing the vision of transforming Sikkim into a "Total Organic State".

We will provide exclusive retail outlets for the organic based food products at the new Lall Bazaar Complex.

A section of curriculum in school text books will be devoted to highlighting the practice and merits of organic farming.

We will make each and every farmer aware of the merits of organic food production and provide them with the latest technologies in this field.

Thank you.



SIKKIM HAS THE PRIDE OF BECOMING THE FIRST STATE OF INDIA TO DECLARE & ADOPT ORGANIC FARMING

After the historic declaration few programmes of organic farming were launched which included adoption of bio village, subsidization of rural and vermi composting pits construction, use of biofertilisers and availability of certified organic manures. More than 100 villages were adopted as bio village till 2009 benefitting more than 10,000 farmers of all the four districts of the state. The state Government farms at Nazitam and Mellidara were converted to “Organic Centre of Excellence” for conducting organic farming demonstration and trials.

To implement the programmes and policies of organic farming in a mission mode and to convert the entire state into an organic state, **Sikkim Organic Mission** was launched on 15th August 2010 with the following committees:

1. **State Level Apex Committee** under the Chairmanship of the Hon'ble Chief Minister, Govt. of Sikkim.
A policy making body giving overall direction and guidance.
2. **State Level Steering Committee** under the Chairmanship of Chief Secretary, Govt. of Sikkim.
To provide guidance, review and monitor implementation of programmes of Organic Mission.
3. **Sikkim Organic Mission**, as the Executive Body under the Chairmanship of the Hon'ble Minister, FSAD & HCCD, Govt. of Sikkim.
Nodal agency to implement the programmes of organic farming in the state and to introduce, promote and adopt appropriate technologies for organic crop production, protection, processing, branding and marketing of organic products of the state.

MISSION TARGET

	TARGET (HECTARES)	ACHIEVEMENT(HECTARES)
2010-11	18,000	18,234
2011-12	18,000	19,216
2012-13	14,000	19,188
TOTAL	50,000	56,638

With the above set target and a road map Sikkim Organic Mission was launched on 15th August 2010 to implement the programmes and policies of Organic Farming in the state.

APPEAL

HON'BLE CHIEF MINISTER WHILE LAUNCHING SIKKIM ORGANIC MISSION ON 15TH AUGUST 2010 MADE THE FOLLOWING APPEAL.

I appeal to all my fellow citizens of this beautiful Himalayan State of Sikkim to make this Sikkim Organic Mission a great success. This will not only be beneficial to all citizens of the State in terms of health and wealth but will also be beneficial for our precious land, water sources and ecology. As it is said that we have not inherited this earth from our forefather but have borrowed it from our future generations, it is our duty to protect it by living in complete harmony with nature and environment.

I appeal to all my hardworking farmers, educated and uneducated youths with full enthusiasm, dedicated officials and my colleagues in the legislature and cabinet serving the people of Sikkim to accept this challenge for our long term benefit and make Sikkim a leader in the area of organic farming and a source of inspiration not only for our country but for the entire world.

Pawan Chamling

Chief Minister

Govt. of Sikkim

INCORPORATION OF PRINCIPLES OF ORGANIC FARMING AS BASE

1. Health - Organic agriculture should sustain and enhance the health of soil, plant, animal, human and planet as one individual.
2. Ecology - Organic agriculture should be based on living ecological systems and cycles, work with them and help sustain them.
3. Fairness - Organic agriculture should be built on relationships that ensure fairness with regard to the common environment and life opportunities.
4. Care - Organic agriculture should be managed in a precautionary and responsible manner to protect the health and well being of current and future generation and the environment.

The practices of organic farming are based on the following main agenda.

Nutrient Management
Pest Management
Disease Management
Moisture Management

REASONS FOR ADOPTION OF ORGANIC FARMING IN SIKKIM

Farming under rainfed condition with low productivity.

Sikkim farmers are Traditionally organic.

Soil is rich in organic matter

Very low consumption of chemical fertilizers and pesticides

About 15,000 Ha area under cardamom where fertilizer has never been applied

Tourism spin off -To promote Tourism through Organic Village concept

Only 10.20% of the total geographical area of the state is under agriculture and 89.80 % of the area has not been touched and therefore free from chemical affects.

BENEFITS ASSOCIATED WITH ORGANIC FARMING

Makes agriculture more rewarding, sustainable and respectable.

Sustains soil fertility by preventing the loss of soil and leaching of minerals.

Improves Soil Physical, Chemical and Microbiological conditions.

Protects and enriches biodiversity - improves soil flora and fauna, plants and animals. Balanced ecology-soil, water and air.

Contributes to a healthy living, decreasing risks of health ailments associated with chemicals. (What we eat, what we drink and what we breathe should be pure).

Requires less water and promotes water conservation.

Improves and maintains agro ecosystem and natural landscape for sustainable production.

Depends mostly on renewable on-farm resources.

Encourages consumption of renewable energy resources- mechanical and other alternate sources of fuel.

Includes domestic animals as an essential part of organic system which helps maintaining soil fertility and also increases the income of farmers.

Ensures pollution free air, water, soil, food and natural ecosystems.

Improves agro-biodiversity (both varieties and crops).

Protects and enhances traditional knowledge in farming, processing and seed improvement leading to its protection for the future generations.

Reduces the cost of production (25-30%) through locally suitable methods and inputs.

Produces adequate quantity of nutritious, wholesome and best quality food and develops a healthy food culture.

Organic products fetch premium price and farmers get benefit.

OUR STRENGTHS

Sikkim has its own strengths and natural resources which enables the conversion process easier and adoptable.

Rich biodiversity - ample scope for on farm production of organic manure which is the main item in the menu of Organic Farming.

Soil has not absorbed much of chemicals -Average Fertilizer consumption - 7kgs/ha and negligible pesticide consumption.

Soil is rich in organic matter content which ranges from 2-7 % organic carbon.

More than 15,000 Ha area is under cardamom with forest cover where fertilizer and pesticides have never been applied.

Agricultural operations are carried out only in 10.20 % of the total geographical area and 89.80% of the area has not been touched and affected by chemicals.

ORGANIC FARMING POLICY- OBJECTIVES

- To make farming sustainable, remunerative and respectable.
- To enhance natural soil fertility and productivity.
- To ensure soil and water conservation.
- To ensure agricultural bio-security and food and nutritional security.
- To create and ensure domestic market for organic products controlled by the farmers.
- To avoid the use of agrochemicals and other hazardous material and, ensure chemical free- water, soil, air and food.
- To ensure seed & food sovereignty.
- To promote biodiversity based ecological farming.
- To ensure quality control in organic inputs and agricultural produce
- To enable human health promotion by providing safe agricultural products and commodities
- To Conserve and extend traditional knowledge related to agriculture.

IMPLEMENTATION OF ORGANIC FARMING POLICY.

- ICS Development through Service Providers
- Certification through APEDA accredited Certification Agencies.
- Incentives for adoption of Organic Farming.
- On farm Production of Inputs
- Off farm certified inputs.
- Large scale awareness and training programmes.
- Market linkage development.
- Branding with brand logo.

PRESENT STATUS OF ORGANIC CERTIFICATION

Organic area and no of farmers

SI No	Status	Area(Ha)	No of farmers
1	Certified area	26391.0666	21545
2	In-conversion-II area	19216.1588	17809
3	In-conversion -I area	28696.6170	24734
	Total	74303.8424	64088

ICS Project wise details of certification

Sl No	Name of project	Area (Ha)	No of farmers	Organic status
1	HCCD SOUTH	1979.8920	2140	Certified
2	HCCD WEST	1778.8390	1145	Certified
3	DST-I	1118.2805	1324	Certified
4	DST-II	1706.8639	1552	Certified
5	MEVDIR KVK	259.7580	170	Certified
	PRE SOM CERTIFIED AREA	6843.6334	6331	
6	MEVDIR IN-HOUSE	1,313.1030	982	IC-III
	TOTAL PRE-SOM PROJECT CERTIFIED	8156.7364	7313	
7	SOM PHASE-I	18234.3302	14232	(Certified)
8	SOM PHASE-II	19216.1588	17809	IC-II
9	SOM PHASE-III	19188.7020	17248	IC-I
10	LARGE CARDAMOM	9507.9150	7486	IC-I
	TOTAL POST SOM PROJECT	66147.1060	56775	
	TOTAL	74303.8424	64088	

The total area to be converted into organic is 74,303 hectares including cardamom area of 9507 hectares according to latest survey out of which an area of 26,391 hectares have been certified in last December and by 2014 December another 19,216 hectares shall be certified thereby leaving 28,696 hectares which shall also be certified by December 2015

ICS Project wise area, no of growers group and no of farmers

Sl No	Name of project	Area (Ha)	No of grower groups	No of farmers
1	HCCD	3758.7310	8	3285
2	DST I & II	2825.1444	7	2876
3	KVK FSADD	259.7580	1	170
4	MEVDIR IN-HOUSE	1,313.1030	2	982
5	SOM PHASE-I	18234.3302	41	14232
6	SOM PHASE-II	19216.1588	49	17809
7	SOM PHASE-III	19188.7020	52	17248
8	LARGE CARDAMOM	9507.9150	25	7486
	TOTAL	74303.8424	185	64088

CONSTITUTION OF TECHNICAL ADVISORY COMMITTEE AND ITS RECOMMENDATIONS

The departments of FSAD and HCCD have constituted a Technical Advisory Committee (TAC) to support the Sikkim Organic Mission on technical matters. A meeting of TAC was held in the conference hall of Krishi Bhavan on 3rd September 2012, Chaired by Principal Director of Agriculture. All the members of the committee were present. The main agenda of the meeting was to discuss on issues relating to alternative organic manures in view of Circular NO 479/CMO/2012 dated 9th July 2012 from CMO to stop import of organic manures from outside.

The circular clearly states that import of organic manures from outside should be discouraged. This is quite pertinent and is in consonance with the principles of organic farming. The principles of organic farming say that use of inputs from outside sources should not be encouraged as it does not guarantee absence of chemicals in the material. Rather emphasis should be given to On Farm Production of these inputs utilizing locally available resources.

Elaborate discussions were held and finally the following recommendations were suggested for action by concerned sections while formulating schemes.

I. ALTERNATIVE BULKY ORGANIC MANURES TO BE PRODUCED LOCALLY

Large scale production of Vermicompost by individual farmers and SHGs.

Infrastructure for production of vermicompost needs to be provided to farmers supported by training and effective species of worms.

Large scale production of Compost manures, Farm Yard manure etc.

Infrastructures in the form of compost pits be provided to needy farmers so that the farmer produces sufficient manure by himself to meet his own requirement utilizing the farm wastes. Training support is essential

II. USE OF MICROBES IN SOIL FERTILITY BUILDING.

Use of micro organism for building soil fertility is a common practice. But, this is more important in Organic farming system and therefore needs to be promoted.

Biofertilisers like Rhizobium fixes atmospheric nitrogen and is a cheap source of nitrogen. This is compatible in leguminous crops (pulses).

Azotobacter & Azospirillum has the capacity to assimilate atmospheric Nitrogen and 15-20 % Nitrogen requirement of the crop can be met from this source. This is compatible with cereals, oilseeds, non leguminous vegetables fruits etc.

Phosphate solubilising bacteria. Certain bacteria has ability to release acid and solubilise phosphates which otherwise is in fixed form. The solubilised phosphate will be easily available to plants.

Biofertiliser production plant at Majhitar has been established to produce such microbes from local strains and supply to farmers for use. In every scheme provision has to be kept for purchase and use of biofertiliser from the unit so that, the unit is sustained, local strains of biofertilisers is available and revenue is generated.

EM solutions/Naturevelsolutions/Madhyam etc are effective micororgansims for early composting of manure. Any biomass/green matter can be decomposed using this solution in the field. EM should also be promoted.

III. GREEN MANURING AND CULTIVATION OF PULSES

Green manuring also builds up soil fertility and is in practice everywhere. Local legumes like rice bean, cowpea, berseem etc. are grown for about two months, ploughed and turned down so as to develop organic matter in soil and also the root nodules help in fixation of Nitrogen. Cultivation of Legumes in rotation is practiced by farmers. This needs to be promoted.

Since the organic manures brought from outside sources have to be stopped we may provide/recommend alternatives from amongst the above recommended items and also include in different programmes. Some of the items which cannot be generated/ produced locally but if needed, we may seek permission of the Government for such purchases. For example- Bonemeal and Rock Phosphate are sources of Phosphate and are essentially required for balanced nutrition. EM/Naturevel solution is also not locally manufactured. Other than this, Biodynamic farming should also be encouraged through training and demonstration and the farmers should practice it.

The organic system of farming should include biodynamic farming, Rishi Krishi, Panchagabya krishi, Natural farming, Natueco farming etc.

BIODYNAMIC FARMING

Based on systematic and synergistic harnessing of energies from Cosmos (mother earth, plants and cow) for which an agriculture calendar based on planetary configurations used in agricultural operations and preparation of few biodynamic preparations.

RISHI KRISHI

Rhizospheric soils from beneath the banyan trees is spread over the area followed by regular use of Amritpani, a special bio inoculate (Cow dung, cow

ghee and honey preparation) through irrigation or drenching in the technique of Rishi Krishi.

PANCHAGABYA KRISHI

It is a special bio enhancer prepared from cow dung, Cow urine, Cow milk, curd and ghee. When suitably mixed, incubated and used the product has a miraculous effect on soil fertility and crop productivity.

NATURAL FARMING

This may be the cheapest system in which regular use of Jeevamitra prepared by incubating cow dung, cow urine, jaggery, pulse flour, virgin soil at 15 days interval. It is a rich bioformulation containing consortia of microbes.

NATUECO FARMING

It follows the principles of eco system networking in farming system approach. The three relevant aspects of natueco farming are Soil, Roots and canopy.

The above recommendations were made by the Technical Advisory Committee to be considered during implementation of programmes of Sikkim Organic Mission.

INITIAL CONCEPT POLICY FRAMED IN 2004 AFTER DECLARATION FOR ADOPTION OF ORGANIC FARMING

- i.** Subsidies on chemical fertilizers and pesticides reduced at the rate of 10 % every year to make these inputs costlier and discourage purchase of chemicals and fertilizers.
- ii.** Stopped lifting of Government of India quota of fertilizers and pesticides.
- iii.** Closed all sale points and other outlets.
- iv.** Stopped placing order to SIMFED for supply of synthetic fertilizers.
- v.** Requested UD &HD not to issue trade license for trading of fertilizers and pesticides.
- vi.** Requested Transport Department not allow transportation of fertilizers and pesticides from outside the state.
- vii.** Alternatively certified organic manures purchased and made available to farmers.
- viii.** To encourage on farm production of inputs large number of rural and vermi compost units subsidized.

- ix.** Eight units of vermiculture hatcheries were established in five Government farms and three KVKs.
- x.** For plant protection an Integrated Pest management(IPM) laboratory established.
- xi.** Large scale training and orientation programmes organized.
- xii.** Infrastructures like Seed processing units established at Jorethang and Majhitar to encourage farmers produce certified seeds of desired varieties organically.
- xiii.** Establishment of three Livelihood schools on Organic farming so as to generate employment opportunities to educated unemployed youths of the state.

ORGANIC FARMING POLICIES

I. POLICY-STRATEGIES ON ICS DEVELOPMENT AND ORGANIC CERTIFICATION

1. Engage only selected service providers having credibility and enough past experience.
2. Local Self Help Groups and NGOs having experience should also be involved in the process of ICS development so that at later stage locals should be able to take over the job.
3. Local educated unemployed youths should be trained by creating livelihood schools and generate employment in the process of ICS development.
4. Proper orientation and trainings should be conducted to bring awareness among the farming community with regard to the benefits of going into organic and to seek support of the farmers.
5. Follow the complete steps of ICS development and certification as per the guidelines of NPOP.
6. Service providers should also support marketing of organic produces of Sikkim in the National and International markets by including this in the terms of agreement.
7. APEDA accredited certification agencies having clean credentials should be engaged by inviting separate tender for the certification agencies.
8. It should be made mandatory to follow the following steps of operations by the Service providers in the process of ICS development and certification-

INTERNAL CONTROL SYSTEM (ICS) DEVELOPMENT

ICS development is a process to be undertaken by Service providers in field prior to inspection and certification. It is a step by step process as follows

Village Meetings and Awareness programmes

Baseline Survey

Identification of clusters

Registration of farmers and Agreement

Farmers' Diary maintenance

GPS data recording of each farm

Farmers' meetings and Orientation programmes

Internal Inspection

Online registration in TRACENET

Submission of Tracenet data to Certifying Agency for External Inspection

External audit by Certification Agency

Issue of Scope Certificate by Certification Agencies.

II. POLICY-STRATEGIES ON FARM PRODUCTION OF INPUTS-ERADICATION OF CHEMICAL FERTILIZERS, PESTICIDES

1. Use of Chemical fertilizers and pesticides should be totally eradicated and replaced by organic manures and bio-pesticides and eco-friendly inputs.
2. As mentioned in the broad initial policy sale point should be closed, import banned, strict vigil made at the check posts so that no chemicals come into the state.
3. Promote on farm production of inputs by providing subsidies for infrastructures like Rural compost and Vermicompost units.
4. Other sources of plant nutrients like bio-fertilisers, green manuring, untreated bonemeals, fish meals, rockphosphates and soil amendments like dolomite should be used.
5. Adopt villages as bio villages and model villages where all the organic inputs should be tried and demonstrated.
6. Encourage IPM practices, promote biopesticides and local botanicals, try biodynamics and train and adopt Non Pesticidal Pest Management.
7. Encourage Biodynamics farming, Rishi krishi, Panchagavya Krishi, Natural farming, Nateuco farming, jaiva krishi etc which are cheap and farm resource based.

III. POLICY- STRATEGIES ON PROCESSING OF ORGANIC PRODUCTS AND VALUE ADDITION

1. In view of the difficulties in dispatch and arrival of raw organic products in the National and International markets Processing and Packaging facilities will have to be developed so as to reach the processed products safely. The high value potential crops like ginger,turmeric, cardamom, medicinal and herbal plants need value addition facilities such as grading, cleaning,

slicing, drying, grinding and packaging etc. The processing plants should meet the NPOP standards of organic certification.

2. Value addition should be done to the organic products and brand name given to every item with Organic Sikkim logo.

IV. POLICY- STRATEGIES ON MARKETING OF ORGANIC PRODUCES AND SUPPLY CHAIN

1. Exploration and development of proper market linkage is very essential for which a separate cell for marketing need to be established with all required facilities and manpower.
2. Proper tie up with the retail outlets and whole sale markets of the metro cities need to be established for sale of organic products of Sikkim in these markets.
3. All the products raw or processed for sale as organic should be given brand name with "Sikkim Organic " logo. Brand should be promoted at National and International level through trade fairs, exhibitions and by wide publicity.
4. Cold storage and refrigerated van facilities should be created in due course of time for temporary storage and transportation of products.

V. POLICY-STRATEGIES FOR RESEARCH BACK UP

1. Research support is equally important for sustainable organic farming.
2. Research organizations like ICAR, Spices Board, NRC orchid should support the state in achieving the goal of organic farming. All these institutes should work on organic aspects of farming and support the state.
3. Development of Organic package of practices for each crop, efficacy trials of different bio-pesticides and local botanicals on different crops need priority and the Research Organizations and Krishi Vigyan Kendras should focus their attention on these issues.
4. Organic package of practices of different crops have been developed with support of ICAR, Spices Board and NRC Orchid which should be updraded from time to time.
5. Adaptive research should be conducted on Soil Management, Pest Management, Disease Management and Moisture Management aspects of organic farming and proper recommendation should be generated by Research Organisations to tackle the problems that farmers may encounter in the process of organic farming.

VI. POLICY- STRATEGIES ON INFRASTRUCTURE DEVELOPMENT

1. STRENGTHENING OF SOIL TESTING LABORATORIES

Soil Health Management and monitoring is very important in organic farming system and therefore the Soil Testing laboratories need to be strengthened to increase the capacity. Districtwise laboratories have been established supported by two mobile units. The present capacity of analysing 25,000 sample have to be increased to 45,000 samples per annum so as to cover the entire farming families of the state in due course of time.

2. STRENGTHENING OF IPM LABORATORY

Integrated Pest Management(IPM) has vital role to play in control of pest and diseases of various crops organically. The existing IPM laboratory needs to be strengthened and upgraded so as to enable monitoring and surveillance of pests and diseases and forewarning, production and release of biocontrol agents. The principles of Non Pesticidal Pest Management should be adopted by imparting training on the subject.

3. PRODUCTION OF BIOFERTILISERS OF LOCAL STRAINS

Bio-fertilisers are the cheapest source of plant nutrients and about 15-20 percent of nitrogen requirement can be met from the atmosphere using local strains of Azotobacter, Azospirillum, Rhizobium etc which are more effective than strains from outside. Besides, local strain trichoderma should also be produced and released for control of many diseases. For this the existing biofertiliser production laboratory at Majhitar needs to be supported.

4. PROCESSING AND PACKAGING UNITS

Most of the agricultural products are perishable except grains. Such products with high moisture contents are difficult for long distance transport and needs to be processed and properly packed with logo before dispatch. This will not only decrease the risk but also decrease the volume which enables easy transport.

5. CREATION OF RESEARCH FACILITIES

Organic agriculture differs from conventional agriculture in terms of plant nutrient supply and control of pests and diseases. The nutrient requirement of plants have to be met from organic sources and pests and diseases should be controlled using organically approved methods. The package of practices also differs from conventional agriculture. Therefore research facilities have to be created and developed so as to solve the problems farmers might encounter during organic farming.

TRAINING AND CAPACITY BUILDING

The entire state of Sikkim is being converted into organic from conventional farming system which involves more than 50,000 of farming families covering 74,313 hectares of land. To make the programme successful large scale training and orientation will be required. Besides, capacity building of the officials will also be required. Therefore adequate arrangements in terms of physical and financial matters will be required.

EDUCATING SCHOOL CHILDREN ON BASIC CONCEPT OF ORGANIC FARMING BY INCLUDING IN THE COURSE CURRICULUM.

Since the entire state is being converted into organic the school children of the entire state need to be educated on the basic knowledge of organic farming. These children in turn will help their parents in the organic farming process. The basic concept on organic farming should be inculcated in the minds of children through a subject or a chapter on organic farming.

Study centres should be established in every district headquarters.

Integrate the various government departments, institutions, civil societies, and their schemes in a harmonious manner duly considering organic farming principles and local situations. These include Government departments such as Agriculture, Animal Husbandry, Forest, Fisheries, Local Bodies, Finance, Revenue, Industries, Agriculture University, ICAR institutions in the state;

VII. POLICY-ACTION PLAN & STRATEGIES

Develop a clear plan of action with budgets for incorporation into the planning process for phasing out organic farming in the State.

Prepare a five year perspective plan and submit to the Government for financial management by the Planning and Finance Departments to achieve the goal of converting the entire state into organic.

To make the organic certification sustainable in the long run alternative cheaper means will have to be adopted for which presently available Participatory Guarantee System (PGS) should be adopted for areas where non exportable crops are grown and the rest areas where exportable crops are grown the Third party Certification may be continued.

So far there does not exist any act and rules to take action against any trader/black marketers of chemical fertilizers and pesticides at the state level or at the National Level. Sikkim being a total organic state acts and **rules should be promulgated** at the State Level to curb sale of chemicals.

The permissible limits of some of the permitted chemicals prescribed under NPOP should be followed.

Emphasis should be given to On Farm production of inputs for which incentives should be provided to farmers for construction of compost pits, vermicompost pits etc. Incentives should also be given for off Farm Inputs like biofertilisers, Azolla and blue green algae ponds, microbial composting agents, soil amendments etc.

Ensure organic farming approach in all the watershed development areas and extend support including capacity building and financial assistance for soil and water conservation measures through ongoing watershed development programmes.

Organic agroclinics should be established to forecast disease and insect pest attack and its control remedies.

Solid waste management system should be linked with production of organic manure.

Discourage burning of organic materials, biodegradable organic wastes and encourage conversion of such materials into organic manure.

Avoid use of plastics in agricultural practices. Coir and other natural fibres should be encouraged to prepare shade for nurseries and flower farming.

Make crop-livestock (including poultry) integrated farming as part of organic farming.

Develop Bee-keeping, fisheries, duckeries and similar enterprises as part of the mixed farming programme.

Promote proven and successful practices developed by farmers.

Document agro-biodiversity and related traditional knowledge and practice, both cultivated and un-cultivated, in each Panchayat.

Launch a state-wide intensive campaign on organic farming in the form of a popular movement: "Jaivik Sikkim".

Produce handouts, publications of case-studies and best practices, video films, posters and other awareness materials to reach out to all sections, especially women.

Organize workshops, seminars and exchange programmes for consumers, teachers, traders, farmers, government and semi-government officials in the related area.

Organise Exhibitions and Fairs for the farmers where they can showcase their organic produces and exchange views with their counterparts.

Encourage, with adequate support, the availability of biomass in the organic

farm itself, through programmes such as crop rotation, tree crops, cover crops, leguminous crops, green manure and green leaf manure.

Provide support for cow, buffalo, duck, fish, poultry and goat, preferably traditional breeds, to organic farmers/groups to ensure integrated farming and the availability of farmyard manure and urine.

Required changes in the existing Cattle Breeding Policy may be made to ensure availability of indigenous varieties of cow and buffalo to the organic farmers.

Encourage the production of various types of compost in the farm itself, including vermi-composting and biogas slurry.

Formulate special programmes for increasing the biomass and organic manures, especially in rain-fed cultivation areas where soil depletion is high, so as to drought proof the farm.

Encourage indigenous species of earthworms and effective microorganisms in composting.

Establish a decentralized system to produce organic manure from biodegradable organic waste segregated at source.

Ensure the quality of the organic manure and establish a centralized testing laboratory to monitor the same.

VIII. POLICY- STRATEGIES ON ORGANIC SEED AND PLANTING MATERIALS

1. Seed and the planting materials are the most important input for farming. In the Organic system these inputs should also be organically produced and grown.
2. The required quantity of seeds of cereals, pulses, oilseeds, some of the vegetables should be grown and produced locally to ensure chemical free seeds by adopting seed villages.
3. However some of the seeds which cannot be produced locally should be brought from outside but request should be made to the seed companies not to treat seeds to be sold to Sikkim.
4. GMO seeds should not be introduced in any case.
5. Planting materials of oranges, cardamom, ginger, turmeric etc should be produced locally under supervision of the concerned department and plantations developed in organic way.

6. Infrastructure for seed production like seed testing laboratories, seed processing units etc should be strengthened to cater the needs of farmers.
7. Establish seed village to meet the requirement of organic seeds and planting materials.

IX. POLICY-STRATEGIES ON ANIMAL HUSBANDRY-FEED AND FODDER

1. Animal Husbandry is an integral part of farming system and in organic farming animal husbandry has the vital role to play as cow dung is the primary source of plant nutrients.
2. In an Organic state all animal products including meats, eggs, milk and milk products should also be organic as far as possible for which restricted chemical products should not be fed to the animals.
3. Increase in cattle population particularly cows which supports nutrient requirement of crops and improves soil condition besides supplementation of income of farmers.
4. Attention should be given on basic inputs such as feed and fodder which should be organic.
5. Feed plants need to be installed and local resources utilized to produce feeds organically.
6. Animals should be provided balanced organic green and dry fodder, minerals mixtures and pure drinking water.
7. Area under fodder plantation should be increased to generate sufficient quantity of fodder to meet up the requirement of fodder.
8. Vitamins, medicine and minerals should also be taken care of. Only permissible medicines, vitamins and minerals preferably Ayurvedic, Homeopathic should be used.

X. POLICY-STRATEGIES ON EMPLOYMENT GENERATION AND MANPOWER DEVELOPMENT

One of the objectives of Organic agriculture in Sikkim is to generate employment opportunities in various chain of activities starting from ICS development and Certification, production of organic commodities, processing and packaging, marketing and supply chain. A large number of manpower shall be required in the process of ICS development for which local educated unemployed youths need to be trained by creating Livelihood Schools and employ them as field staff.

XI. POLICY- CROP PLANNING

Sikkim farmers like in many hill states are used to Integrated Farming system where agriculture, horticulture and animal husbandry comprise major farming activities. The reason being small holding and rainfed farming due to lack of assured irrigation facility. Such practice is just sustainable system but does not give high economic return.

Farmers need to go for bulk production with cluster approach for which **one village one crop** concept is applicable and if the entire village produce one commodity in bulk it makes marketing cost effective. Proper market driven crop planning is essential for uninterrupted supply of commodities. Maximum effort should be made to produce during off season when the price index is high. Of late contract farming system has also given good result and needs to be encouraged.

XII. POLICY-BIO VILLAGE AND MODEL FARM CONCEPT

Efforts should be made to educate the farmers and make them convinced through training and demonstration in farmers' field. All organic technologies should be demonstrated by adopting villages as bio village. At least two Government farms should be developed as model organic farm displaying all organic technologies including production of organic inputs for nutrient management, pest and disease management etc. Farmers, officials and visitors should visit the model farms to see and learn the organic farming activities.

Hon'ble Chief Minister while delivering speech in the State Legislative Assembly on 28th February 2013 mentioned certain points related to Organic farming, Horticulture and Agriculture in the state.

1. My Government introduced the concept of Organic Farming in the state for safe and better future of the people of Sikkim. While other states are the dumping ground of chemicals we in Sikkim do not use them.
2. We try to give clear message to the Country and the World by advocating organic farming.
3. Life expectancy of the people will certainly increase by going into organic way of life.
4. We have to make farming attractive, lucrative and income generating to attract the younger generation towards this profession.
5. We have to go for low volume high value crops which will give better remuneration.
6. The concept of ONE VILLAGE ONE PRODUCTION should be adopted by the departments so that monitoring, production, marketing etc becomes easier and specific production is made from each village.

7. Every department shall have a Grievance Redressal Section to resolve the problems faced by employees, public and students.
8. I appeal to all the people of the state for their cooperation to make Sikkim a real organic state of India.

XIII. POLICY-STRATEGIES ON PUBLICITY THROUGH DIFFERENT MEDIA

Films in local language to be developed on bad effects of use of chemicals and benefits of organic farming.

Pamphlets/leaflets/posters to be prepared in large scale in English and local languages to motivate farmers for adoption of organic farming.

Stickers depicting hazards of chemicals should be prepared and stuck on transport vehicles like cars, buses, Government buildings, schools etc.

Electronic media-TV/Radio/FM -programmes on organic farming benefits and bad effects of chemicals with clear message should be developed and relayed to rural mass to encourage them to adopt organic farming.

Shows/drama etc should be developed and played in rural areas.

Bill Boards should be prepared for display in the National Highways, towns and villages.

Organic food festival should be organized time to time especially during tourist seasons.

Hotels should be approached to serve organic food.

Should take part in tourist fairs.

Organic products with logo for marketing strategy.

Encourage the formation of Organic farmers groups, especially women organic farmer groups, clubs, SHG's and cooperatives for the purpose of cultivation, input production, seed/seedlings/planting materials production, certification and marketing.

PGS INTRODUCTION TO MAKE ORGANIC FARMING SUSTAINABLE

PGS (Participatory Guarantee System) should be introduced to make the organic certification cheaper and sustainable for which the following points have to noted and action taken accordingly.

PGS system should not be introduced in all the entire state. Exportable commodity growing areas should be kept under third party certification and

rests under PGS for which areas have to be segregated for 3rd party Certification and PGS system.

Sikkim should have its own Zonal council and Regional council for which the Sikkim Organic Mission cell should act as Zonal council and the district committee of Organic farming as Regional council by obtaining authorization from NCOF, Govt. of India.

Jt Directors of the district should be made as District chairman of the Regional council.

Dy Director FSAD/HCCD/NRM should be made as members of the Regional council.

Field facilitators need to be appointed.

Registration-field data of farm diary.

Small and manageable local groups should be formed.

Every Ward should be made local group.

The process of maintaining Farm diary should be continued.

Officers should attain training at NCOF Ghaziabad.

Principal Director cum Executive Director, Sikkim Organic Mission should act as Chairman of Zonal council.

Pledge

Peer review season wise.

Website to be developed.

BASIC ISSUES TO SUSTAINABLE ORGANIC FARMING IN SIKKIM

- 1.** Organic certification should be made sustainable by adopting PGS system for non exportable products and continue with Third party certification for exportable commodities.
- 2.** Necessary infrastructures and organic inputs should be provided for sustainable crop production and protection.
- 3.** Improvement in different composting methods- permanent structures of compost cum urine pits should be provided to needy organic farmers.
- 4.** Promotion of Vermi-composting technology- permanent structures should be constructed, proper training should be given to the beneficiaries, worms and cocoons should be provided from time to time.

