

**Project proposal on Promotion of Organic Farming
RKVY(stream-II) for the year 2013-14**

Total project cost: 178.38Lakh

**Submitted by
Directorate of Agriculture,
Nanda ki chowki, Premnagar,
Uttarakhand**

Project At A Glance

Sl.No	Name and Component of the Scheme	2013-14		Implementing Agencies
		Physical	Financial	
		(No.)	(Rs in Lakh)	
1	Construction of Vermi Compost pit of size 10'x3'x2' Along with vermi wash pit 1'x1'x1' @ 50% subsidy i.e. Rs 2800 and supply of 2 Kg Vermi culture to the farmers 2 of Rs 400/- per unit. The total of 3200/ unit (50% assistance)	3000	96.00	CAO
2	NADEP (12'x4'x3') @ of Rs 3000 per unit	1000	30.00	CAO
3	Bamboo NADEP (12'x4'x3') @ of Rs 750 per unit	250	1.88	CAO
4	Master Trainer on Contract basis @ Rs 7, 000 Honorarium+1000 T.A. per month for 6 month	95	45.60	CAO
5	Training for trainers @ 1000 per training per day, 2 days for 30 participants	95	1.90	UOCB & CAO
6	Village Level training @ Rs 1250 per training for 50 farmers for 1 day	240	3.00	CAO
	Total		178.38	

Promotion of Organic Farming

The total geographical area of Uttarakhand is 53.48 Lac ha among this 7.68 Lac ha area is under cultivation which comes 3.31 Lac ha in plains and 4.73 Lac ha in hill region. The total irrigated area is 3.43 Lac ha of which 2.98 Lac ha is in plain and 0.45 Lac ha in hill region. There are 9.21 Lac land holdings in the state out of which 88% farmers are small and marginal having less than 1 Ha of land. The average land holding size in hill is 0.78 ha and in plain 1.28 ha.

In hill regions farmers mostly grow the local crops like finger millet, Barnyard millet, amaranthus, pluses like gahat, urd, rajma, mung and oilseeds crops like soybean and bhat. These crops are very nutritive and have medicinal values. The fertilizer and pesticide consumptions in hill regions are very low. At present the hill area is untouched with green revolution and the farmers are continuing the traditional farming of crop production. Due to small and fragmented land holdings, agriculture is not economical in hill areas.

Imprudent use of chemical fertilizers has been responsible for deterioration of soil health. Millions of microorganisms inhabit the soil which keeps the soil an alive media for agricultural purposes. Use of chemicals destroys them and hence their population drastically reduced. These microorganisms provide the plants with atmospheric nitrogen fixed by them, soluble phosphorus fixed in soil and help in decomposition of organic material added to the soil converting into humus which further improves water holding capacity of the soil, infiltration rate of rainfall water, improves ability of plants to take nutrients of soil, improves aeration in rhizosphere.

The permanent and cheapest solution to overcome the dangerous effects of modern agriculture and to develop a farming system which is economic productive and long lasting is now called as a sustainable, organic farming, natural farming etc. organic farming and integrated and judicious use of plant nutrient management has an important role to play in maintaining or improving soil and plant health management.

Organic agriculture is a holistic production management system which promotes and enhances agro-ecosystem health, including biodiversity, biological cycles and soil biological activity. It emphasizes the use of management practices in preference to the use of off-farm inputs, taking into account that regional conditions require locally adopted systems. This is accomplished by using, where possible, cultural biological and mechanical methods, as opposed to using synthetic material, to fulfill any specific function within the system. The state of Uttarakhand has started taking steady strides towards the promotion of organic farming. There is an increasing awareness about organic agriculture practices in the state. Besides most of the remote and inaccessible areas are still continuing with the traditional methods of crop production using organic manures as the only source of the nutrients.

It includes all the agricultural production systems that promote environmentally, socially and economically sound production of food and fibers. In the system soil fertility is the key to

successful production. Organic farming aims to optimize quality in all aspects of agriculture by taking into consideration the natural capacity of plants, animals and the lands, it emphasizes on the health of agricultural ecosystem and prohibits the use of synthetic herbicides and pesticides, genetically modified organisms, synthetic fertilizer in crop production and hormones and antibiotics in livestock production. It respects the law of nature to increase yield and disease resistance. Organic farming requires high level farm management skills and requires use of wide variety resources to solve the problems. The organic farming focuses:

- Maximize biological activity in soil
- Maintain long term soil health and minimize soil erosion.
- Enhance the genetic and biological system and its surroundings.
- Provide livestock with optimal living conditioned for well being and better health.
- Recycling of material of plant and animals origins, nutrients to the soil and minimize the use of non-renewable resources.
- Promotion of environmentally friendly use of soil, water and air thus minimizing agricultural pollution.

Fertility management of different types of soil are very crucial and critical to increase the productivity under organic farming. Fertility management encompasses application and addition of nutrient supplying material, which include chemical fertilizer, organic manures and other ameliorants. Efficacy of added material depends on several factors like structure of soil, drainage and tith etc. it has been found that continuous use of fertilizers has lead to several problems in hill soils i.e. reduction in pH. Deficiency of secondary of secondary and micro nutrients and reduced biological activity. It is tradition in hills to add organic manures in the soils which also supplement and also improves physical and biological propertied of soils. Practice of incorporation of organic manure is very good, but farmers usually add partially decomposed biomass, which account for immobilization of available nutrients in soil particularly nitrogen and also it is the chief source of insects attack, fungal and weed infestation.

Rational of the project:

With a view to overcome problems in soil health management and to improve productive capacity of soil new techniques of quick and quality production of compost with the help of earthworms has been developed by the scientists after series of experimentation under different agro-climatic conditions. Apart from this soil testing facilities are being provided to the farmers at their door steps and soil health card has been provided to them.

Two strains namely *Eisenia Foetida* and *Eeudrilus eugeniae* have been found to be highly efficient under the varying climatic conditions of Uttarakhand. These species eat different kind of biomass namely *lantana*, *ageratum*, *paspalum* along with dung. These obnoxious weeds have spread in a big way in all parts of the state and are responsible for degradation of lands and extinction of economic species of grasses. Earthworms eat organic matter in a day and subsequently release vermi cast, which is highly rich in total nutrients like auxins, cytokinins,

enzymes, vitamins and useful microorganisms like bacteria, actinomycetes, protozoan's, fungi and others which are beneficial to the growth of the plants. When vermin cast is kept in a moist state, different bacteria act and changes it into vermicompost. Recovery of vermin compost is approximately 60-70% of the fed organic matter which is three times higher than the conventional composting of cow dung and other biomass. It is also free from insect, disease and weeds. It is odorless and can be handled easily and is available for use within 60-70 days. Surface bed method is being used and popularize for the prolific multiplication of earthworms and higher conversion rate of biomass in to vemi cast.

For organic compost production unit like vermi compost pit, 10x3x2x feet along with vermin wash pit 1x1x1x feet, NADEP 12x4x3 feet and bamboo NADEP 12x4x3 feet will be constructed or made at farmer, s field at 50% subsidized rate.

A village level capacity building programs will be organized for the farmers as awareness campaign. Master trainer will be kept in each block on contractual basis for operating the organic program and other activities related to the program. The master trainer will be trained by the Uttarakhand organic commodity board in the training center established at Almora will act as trainer for village level training program.

The organic farming is not limited to certified organic products but also includes all productive agricultural system that use natural process rather than external input to enhance agricultural productivity. The practice of organic farming is often but not always oriented towards market for food labeled as organic. The products that need organic production standard and is subjected to organic inspection, certification and labeling is referred to as certified organic agriculture whereas the agriculture that meets organic agriculture production standard but is not subjected to inspection, certification and labeling is called as non-certified organic agriculture. The organic farming practices make use of the following material to supplement the nutritional requirement of the plants and increasing the resistance in plants.

The most challenging time in the organic farming system is the transition phase as the farmers switch from conventional to organic agriculture. During the early stages of conversion drop in yield up to 30% have been reported by the farmers who were dependent on herbicides, fertilizers and pesticides and it take about decades for their yield to recover. But some famers observed that yield rebound within just a few years as they were using only minimum inputs. The yield tends to increase with the number of year under organic management as farmer gain experience and soil improves. It has also been reported that organic farms have higher yield than conventional farms under stress caused by drought, heat, excessive rainfall or unreasonable cold weather.

Soil health management tends to have lower cost of production than conventional farming as less emphasis on purchased inputs. Similarly the next income from organic farming appears to be slightly higher than the conventional farming in general. The expanses are lower and the income is higher due to price premium.

Objectives:

- Promotion of environment friendly agriculture
- Recycling and use of farm waste biomass there by reducing the cost of production
- To improve the physical and biological properties of soils, self life and flavor of farm produce
- To reduce the use of inorganic fertilizers and pesticides
- To increase export of farm produce
- Improvement of soil health.
- To evaluate the fertility status of soil.

Project implementation:

For the implementation of the project one master trainer in each block will be kept on contract bases for the 6 month @ Rs 8000/ month by the chief Agriculture officer. Project will be implemented on cluster approach basis. Initially the village which are all ready selected in the cluster will be saturated. After saturation of previous selected village the new villages will be selected near by the cluster so that the operation can be easily done. For implementing the project farmers will be selected & will be trained for preparing the organic compost & its proper use for crop production. After training the organic compost production unit like vermi compost pit, NADAP & bamboo NADAP will constructed/made at farmer field in the super vision of master trainer & field extension worker. The filling of compost material in different verme compost unites will be demonstrated by the master trainer. The master trainer will be trained by the UOCB Dehradun at organic training center situated at Majkhali District Almora

The proper record will be maintained at Nayay Panchayat, Block's Agriculture & Soil conservation Unit & at District level. The work Progress will be monitored by the Incharge Nayay panchayat, Asstt. Agriculture officer's at block level, A & BSA's & CAO's will be responsible for Implementation & monitoring of a Project as whole.

The details of physical & Financial of the Project has been given below.

Summary of the project
Details of Physical and Financial of the project

Sl.No	Name and Component of the Scheme	2013-14		Implementing Agencies
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1	Construction of Vermi Compost pit of size 10'x3'x2' Along with vermi wash pit 1'x1'x1'@ 50% subsidy i.e. Rs 2800 and supply of 2 Kg Vermi culture to the faemrs 2 of Rs 400/- per unit. The total of 3200/ unit (50% assistance)	3000	96.00	CAO
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Outcome of the project:

- 3000, vermi compost pit, .1000 NADAP and 250 bamboo NADAP.
- Saving of chemical fertilizers.
- Improved soil fertility, porosity, water infiltration, water holding and soil micro flora and fauna.
- High quality produce (taste, flavor, free from chemical residue) with longer shelf life.
- High returns per unit area due to reduced cost of production per unit area.
- Realistic nutrient application.
- Less polluted environment and aquatic system.
- Area will be covered under organic farming is 3000 ha.

District Wise Physical and Financial Out Lay of the Project

Physical- No., Financial Rs in Lakh

Sl.No	District	Vermi pit (10'x3'x2') and Vermi wash (1'x1'x1') @ Rs		NADEP(12'x4'x3')		Bamboo NADEP (12'x4'x3')		Master Trainer		Village Level Training		Master Trainer Training		Total Financial
		Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	
1	Chamoli	280	8.96	95	2.85	30	0.23	9	4.32	20	0.25	0	0	16.61
2	Dehradun	170	5.44	70	2.1	15	0.11	6	2.88	15	0.19	0	0	10.72
3	Pauri	450	14.4	165	4.95	50	0.38	15	7.2	32	0.40	0	0	27.33
4	Rudraprayag	150	4.8	30	0.9	15	0.11	3	1.44	15	0.19	0	0	7.44
5	Tehri	300	9.6	100	3	22	0.17	9	4.32	20	0.25	0	0	17.34
6	Uttarakashi	180	5.76	60	1.8	20	0.15	6	2.88	15	0.19	0	0	10.78
7	Haridwar	170	5.44	60	1.8	0	0.00	6	2.88	15	0.19	0	0	10.31
8	Almora	400	12.8	150	4.5	28	0.21	11	5.28	25	0.31	0	0	23.10
9	Bageshwar	125	4	30	0.9	17	0.13	3	1.44	15	0.19	0	0	6.66
10	Champawat	175	5.6	40	1.2	15	0.11	4	1.92	15	0.19	0	0	9.02
11	Nainital	275	8.8	60	1.8	16	0.12	8	3.84	18	0.23	0	0	14.79
12	Pithoragarah	150	4.8	80	2.4	22	0.17	8	3.84	20	0.25	0	0	11.46
13	U.S.Nagar	175	5.6	60	1.8	0	0.00	7	3.36	15	0.19	0	0	10.95
14	UOCB	0	0	0	0	0	0.00	0	0	0	0.00	95	1.9	1.90
Total		3000	96	1000	30	250	1.88	95	45.6	240	3	95	1.9	178.38