



The Soul of Productive Nation

A Farmer and Nature Friendly Cultivation Method

12 Gunthe Nature Farming Experiments

The Efforts Towards Creating
Dignity and Livelihood

Compiled by Anant Kadam

*Implemented By
Vikas Sahyog Pratishtan*

NATURE FARMING FOR SELF RELIANCE

CONTEXT FOR UNDERTAKING INTERVENTION WITH THE SMALL FARMERS

Vikas Sahyog Pratishthan is a collective of organizations working in rural areas. Since 1990 this collective has been campaigning on the rights issues of deprived communities. In the reviews and trainings it was realized that the issues of poorer villagers are increasing and inequalities are increasing. Therefore we have realized that alternatives need to be demonstrated. We were of the opinion that agriculture is a primary source of livelihood and unfortunately agricultural sector is on the verge of collapsing stage. Farmers are dependent on external sources such as fertilizers, water, seed, labor etc. that are expensive and in the process the farmers are more exploited.

So considering the land pattern of small and marginal farmers and their resource base there was a challenge to develop the livelihood models. So in this context the groups working with different population groups have come together and decided to develop a long-term intervention for promoting Nature Farming model base on the technique of Low External Inputs for Sustainable Agriculture.

THE PHILOSOPHY AND PRINCIPLES OF NATURE FARMING

The philosophy of Nature Farming is that "the harmony and prosperity of human beings and all other life can be assured by conserving the ecosystem while conforming to the laws of nature and by fundamentally respecting the soil".

This Nature farming technique is developmental alternative for small and marginal farmers from all the aspects. This leads in self-reliance by catering to essential needs such as food grains, vegetables, fruits, medicines, building material, and fuel.

The nature farming method involves no tillage, no chemical fertilizer, no chemical pesticides, no weeding, no pruning, and remarkably little labor. It uses neither human nor unprocessed animal feces. Nature Farming uses organic matters only. The inputs for this cultivation method is biomass for enriching soil and fertilizers, local seeds that is available at village level or preserved by the farmers, using biodiversity available around the plots, human skills and labor and interest of the owner.

THE THRUST AND ACTIVITIES OUTLINED IN THE PROJECT

The Maharashtra state is divided in four regions, each region has its own character and different agro climatic zones and different population groups. Each region has different issues so the challenge was how to link between the implementing processes. First of all we have discussed the issues with our partners regarding the project activities and scope of work and formulate the collective systems for effective implementation of the program in which Study Group, Monitoring group and Education & Training groups from the representatives of associated organizations. The associated 8 organizations have taken responsibility of coordination and implementation of the activities.

Concerning the different agro-climatic situation and seasons it was decided to implement the activities in two phases, the difficulties or limitations can be overcome in the next phase as per the requirement and based on agro climatic situation.

The intervention was held with different sections of the society especially for dalit, tribals and other resource less people and different agro climatic zones

1st phase intervention

<u>Associated Community</u>	<u>The Venue of the demonstrative plot</u>	<u>Coordinating Organisation</u>	<u>Contact Persons</u>	<u>Region</u>
Dalit families	Dongargaon, Tal – Sangola, Dist – Solapur	Ambedkar Sheti Vikas Vs Sanshodhan Sanstha	Mr. Lalit Babar	Western Maharashtra
OBC families	Gunjegaon, Tal – Mangalwedha, Dist- Solapur	Somling Gram Vikas Mandal	Dr. Sanjay Patil	Western Maharashtra
Shepherded community	Ambavade, Tal –Jawali, Dist- Satara	Satyashodh	Mr. Ravindra Suman	Western Maharashtra
OBC community	Patherdi, Tal- Chiplun, Dist – Ratnagiri	Sanvad	Mahendra Indulkar	Konkan
Destitue women’s from. denotified tribes	Bhogaon, Tal- Uttar Solapur Dist- Solapur	Samaj Vikas Va Sanshodhan Sanstha	Ms. Sharada Renke	Western Maharashtra
Dalit community	Bijawadi, Tal- Mann, Dist – Satara	Samajik Nyay Pratishthan	Mr. Ashok Bhosale	Western Maharashtra
OBC	Jambhoshi, Pen, Dist – Raigad	Sakav	Mr. Arun Shivkar	Konkan
Shepherd	Kolkewadi, Tal- Chiplun, Dist – Ratnagiri	Shramik Sahyog	Mr. Rajan Indulkar	Konkan

The Activities proposed and its rationale

- 12 Gunthe Land Developments.** – The 12 gunthe land development basically established for food security. The design of the plot was made for taking intercrop production with multi cropping systems. The food grains, vegetable, medicinal plants, creeping & spices plants means the family can get all kind of food for better health. The perspective of this experiment that the owner of the plot can sustain their livelihood resources.
- Training & Consultation.**- Training to the farmers and the animators was the most important part of the process because the technical process of preparing biomass, multi cropping systems and undertaking allied agriculture activities is most important part of developing the experiment, therefore the continuous training of animators and farmers was planned.
- Monitoring & Evaluation.**- the joyful work and effective learning was the important part of this intervention therefore, to record the learning and insights the monitoring process was implemented as an activity for the systemization of the process.

4. **Allied Agriculture Activities** – to fulfill the needs of meat and milk as allied agriculture activities have been included in the project. One goat with 2 lambs and 5 hens were purchased for meat and milk purpose.
5. **Developing Kitchen Gardens for healthy food supplements** - The land holding especially of deprived sections are very less so to produce the kitchen need i.e vegetables, fruits or green spices etc. from available land around the house and home waste water the kitchen gardens was included in the project activities.
6. **Awareness and documentation.** – As an activity the wider awareness and documentation process has been included as the integral part of the project to enhance participation and replicability of the cultivation technique.

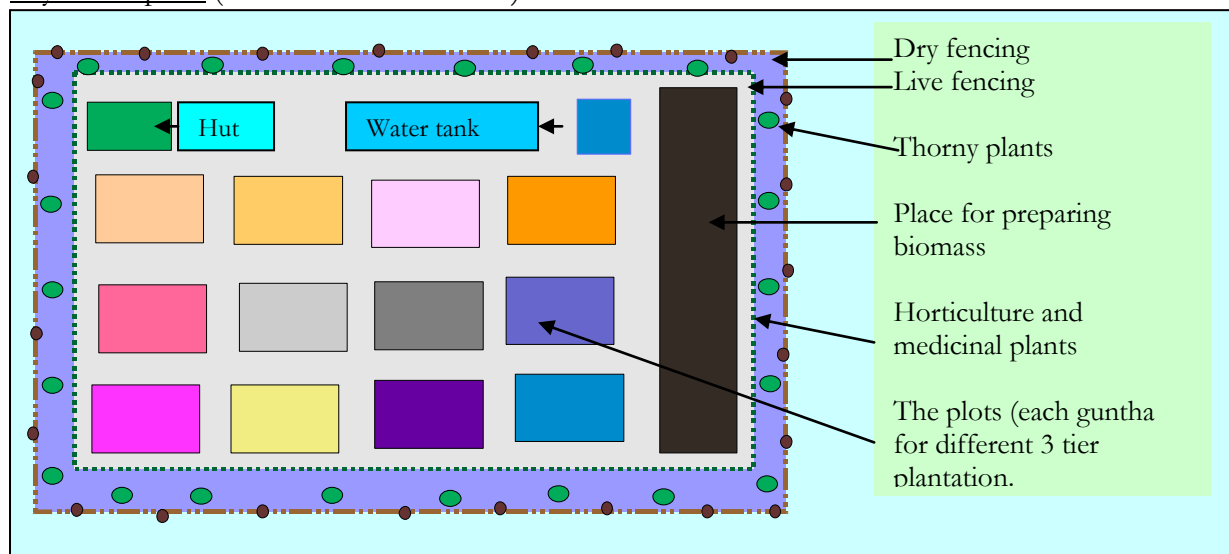
WORK UNDERTAKEN IN THE PROJECT PERIOD

Livelihood Model for Small Farmers

VSP initiated 8 small experiments under the title of “Twelve Gunthe Experiments” in various locations of Maharashtra to understand as to how nature farming could contribute to food security by:

- (a) Increasing yields in low-input areas
- (b) Conserving bio-diversity and nature resources on the farm and in the surrounding area.
- (c) Increasing income and/or reducing costs
- (d) Producing safe and varied food

Lay of the plots (based on land structure).



The design of the plot was made in keep concern of fencing that would help get production and protection, multi-cropping (inter crops) system, horticulture, vegetable and medicinal herbs and food grains for livelihood needs. It is ideal for small plot holders and small farmers to get high

yield and maximum utilization of the limited resources. The focused points of the design are follows:

- ☛ Dry and live fencing to protect the crops from animals and other risk factors
- ☛ Biomass enhancement and soil enrichment for developing micro-organism
- ☛ 3 tier inter crop system for getting high yield form same plot.
- ☛ Measurement of the land allocation and yield gain
- ☛ Articulation and replications of the efforts for community livelihood

Shelter & Storage

In the experiment design we had planned for the hut for shelter and ground for play and storage for the yield. At the all experiment place the huts were constructed to fully natural inputs were utilized. In rainy season the playground is used for vegetable cultivation.



SPECIAL ACHIEVEMENTS

Developing Experiments of low external inputs on small agricultural plots (Twelve gunthe i.e. approximately one fourth acre of land) for sustainable productivity.

- For last four years 12 Gunthe Nature Farming models were developed in Konkan and Western Maharashtra region at 8 places.



- These experiments clearly verified our understanding on how nature farming can serve as a technique to ensure food security of marginalized farmers. On this basis 8 experimental plots have been successfully implemented. The experiments have been successfully enhanced livelihood of 16 families.

- The experiment was successful in developing techniques for preparing good compost from biomass, in a fast and efficient way and low external inputs.



- In the surrounding villages in both regions 60 farmers motivated by the field demonstrations and have adopted this technique in their farms. In some villages farmers have stopped using chemical fertilizers; they have understood the importance of biomass and stopped its devastation.

- As allied activities 764 kitchen gardens have been established in Western Maharashtra and konkan region. Therefore 764 families have been sustained for kitchen related needs.
- Associated members in the nature farming process gained experience of plant flowering, optimum fruiting, watering techniques, pest management etc.
- One found that allied agricultural activities has the potential to help families acquire gainful employment of 120 days per annum
- These experiments were able to generate sufficient & nutritious food (fruits, grains, pulses, vegetable & oil) for 8 months for each of the eight families participating in this process. Conventional farming was only able to meet the food security of these families for only 4 months of the year.
- Expenditure on medicines with these families reduced by 20 %.
- Allied activities undertaken by families were able to suffice their needs vis-à-vis milk and meat.

SCIENTIFIC RESULTS...**Status of Soil** (Average Value after 3 years)

Sr. No	Venue of the plots	PH		Moisture %		Carbon %	
		A	B	A	B	A	B
1	Solapur (W. M)	4-5	6.3 / 7.2	45-50	70-80	2.25/ 4.25	0.68/1.02
2	Mangalwedha (W.M)	4-7	6.2/6.5	45-50	70-80	2.25/ 4.25	0.72/ 1.10
3	Sangola (W.M)	4-6	6.2/7.0	45-50	70-80	2.25/4.25	0.75/1.15
4	Bijwadi (W.M)	4-7	6.5/6.7	35-40	60-65	2.27/5.2	0.82/1.17
5	Ambavade (W.M)	4-6	6.2.8/7.0	45-50	80-85	2.25/3.37	0.67/1.12
6	Pen (Konkan)	4-5	6.3/7.3	45-50	80-85	2.25/ 3.35	0.68/1.23
7	Chiplun (Konkan)	4-5	6.2/6.3	45-50	80-85	2.25/3.35	0.67/1.20

{(A')- Average value in the region (B')-maintained value in the plot, (/) average value (from – to), (W.M) - Western Maharashtra}

The finding of PH is most important to understand acidic inputs in the soil for good productivity and 6.3 to 7.00 PH is better for maintaining the chemical balance therefore in all the project PH ratio in all the plots.

Production (Average one time cropping season)

Sr.	Crops / variety	Average yield in conventional method (Per sq. feet)	Yield from the Experiment (Per sq. feet)	% of high yield from the experiment Approx. Per sq. feet)
1	Vegetables	140 - 160 gm	250- 300 gm	187.5%
2	Fruit	150 - 170 gm	300 - 325 gm	191.18%
3	Spices	125 - 140 gm	200 - 250 gm	178.57%
4	Pulses	40 – 50 gm	75 - 80 gm	160%
5	Grain	50 – 60 gm	75- 80 gm	133.33%
6	Oil seed	30- 40 gm	50 - 75 gm	187.5%
7	Sugarcane	0.5- 1 kg	1.5 - 2 kg	200%
8	Bulbs (root crops)	300 -400 gm	700 - 800 gm	200 %

(The statistic shown in above table is average value of the conventional method and nature farming method, percentage of the high yield statistic is taken from high yield ratio)

The data shown in above table is the showing difference between conventional farming and from the experiment.

Household Food Security: (Average Production per plot out of the 8 plots)

Crop Units	Average Value of Yield got in Experiments Kilograms	Requirement for One House-hold Per annum Kilograms	Farm Price Rupees/ Kilo-gram	Total Price
Cereals	832	400	5	4160.00
Pulses	316	100	20	6320.00
Oilseeds	452	100	20	9040.00
Spices	220	25	15	3300.00
Vegetables	1630	216	10	2160.00
Fruits	2000	900	5	10000.00
Bulb	300	150	5	1500.00
Total				42470.00

(The farm price of the produces are counted 50% less than market rates, as per the market rates the actual production from each plot is approximately Rs. 84940/-)

The data in above table is showing average value of the production in a year and requirement of the food grains for family as well as the cost

Educating to Farmers and activists...

Particulates & theoretical understanding is most important in the cultivation technique therefore the focus was kept on the internal and external education systems. The Animators as well as farmers trainings were conducted for developing the agriculture cultivation.

- A team of 31-village representatives is trained in the field, they are equipped and guiding others.
- Around 20000 interested farmers, community leaders, students, government officials educated through consultative activities and awareness programs such as exposure visits, workshops, seminars etc.
- During World Social Forum 2004 at Mumbai more than 4500 national and international representatives visited demonstrative stall and had a dialogue on experiences of nature farming.
- Special trainings conducted for youth groups, cooperatives. The participants have realized the potential of such farming as an alternative for employment.
- The farmers and animators learnt how to observe plant physiology and diagnose their health, and work out remedies for pests and diseases as and when necessary. They also developed knowledge of preparing organic solutions for pest control and enhance soil fertility.

Convincing results attracted a few more organizations and groups to initiate the experiment on available small plots of land in their areas. Replication of the concept was hastened with willingness exhibited by various constituents' women, youth and farmers. Basic aim was to conserve the soil and curb incidence of migration of small farmers to urban areas, by motivating them to experiment on small plots of land.

Observations with respect to ensuring the full utilization of inputs

- (a) On the basis of implementation and result we realized that the experiment is a unique experience of the livelihood needs its fulfilling all the livelihood related needs for food



- (b) Availability of biomass in western Maharashtra is approx. 1.5 tones per acre, but through the 12 gunthe experiment it enhance up to 2.5 to 3 tones in a acre. Besides labor cost to collect the biomass is reduced, generally the time for collecting biomass consuming 6 hours for 10x10 sq. feet area but it is reduced till 2 hours for ¼ acres.

- (c) Generally the process of biomass composting taking 90 to 120 days in every agro climatic zone. Our experience is that the method we have used for composting taking 60 – 90 days

for micro organism enhancement. Therefore we have realized that to enhance soil status in the plot it required 3 months for each plot (100 – 160 cubic liter soil in 1 guntha). We have found 250 gm micro organisms & 250 earths' worms in one cubic liter soil.

- (d) Normally the ratio of PH of soil is approx. 4.0 in the Konkan & Western Maharashtra regions, but after biomass & MOU enhancement it goes to 6.5 - 7.5, which is maintaining Alkali & Acidic inputs.
- (e) In terms of growing process of the plants we realized that 1 liter organic soil enhances 1 sq. feet canopy area of plant.
- (f) Conventional farming is consuming 10.5 liters water per day for 1 cubic liter soil but in through the nature farming cultivation method it reduced till 5.5liters for 5 days.

Campaign Support for Policy Influence

Developing alternatives for livelihood of deprived communities we have initiated a process in WSF 2004 to collaborate with like-minded groups for various programs and activities as well as demand for proper policy at the Govt. level. This effort was to create campaign for livelihood for deprived communities. Following programs was collaborated in WSF 2004.

Community Events and Public Opinion Building

Workshop on Livelihood and Dignity of Deprived Community

As we are addressing and working on livelihood issues of deprived communities it is an imperative to understand that small plots of land development by implementing natural farming techniques definitely provides an alternative in long term. As it enables five member families to attain self-sufficiency and obtain a means of livelihood. This was further supported by Vikas Sahyog Pratishthan organizing a workshop on the issue, which attracted a large audience and proactive responses from a varied circle of individuals, groups and organizations.

The present LPG policies being followed by most countries, home users, restrict or deny the access of the poor and marginalized communities to natural resources, thereby depriving them of their livelihoods and making it impossible for them to lead a life of dignity.

This theme formed the focus of the workshop organized by the Jamin Jungle Pani Lokadhikar Andolan, Vikas Sahyog Pratishthan, and Focus on the Global South on 3rd January 2003 under the aegis of the ASF. A well attended meeting (70 delegates) discussed and debated not just the major contemporary trends that are impacting livelihoods in both rural and urban areas in India and other countries of South East Asia, but also was enriched by the suggestions.

Seminar on 'Rights to Livelihood and Dignity of Deprived Communities'

We believe that the livelihood & dignity is a basic issue of deprived community therefore we are creating a model for their livelihood and dignity and sharing with like-minded groups and persons. To enhance such kind of efforts we collaborated with National Dalit Foundation and Focus on the Global South to held seminar on 'Rights to Livelihood and Dignity of Deprived Communities in World Social Forum 2003 at Mumbai.

In the seminar focused on present economic development model is leading to new realities such as concentration of land in the hands of large landowners. Its affect the rights of these people

and violation of dignity and fundamental rights over natural resources. In so-called development rural underclass has no right to life with dignity. In the fast urbanization process people are depriving from roots, Migration into cities is leading to a tremendous impact on life and status of women.

In the workshop, presentation made on nature farming methods and how it is proper for small farmers, marginal farmers and other down trodden and their livelihood. Strategies discussed to build the capacities of rural poor and to enable them to use their rights such as use of Employment Guarantee for poverty alleviation.

Rallies on Nature Farming

During World Social Forum in Mumbai associated members and farmers from all over Maharashtra has arranged 2 rallies for promotion of nature farming above 300 participants in each rally was participated. During the rallies participants have demanded for land, water & employment guarantee scheme for deprived communities for cultivation.

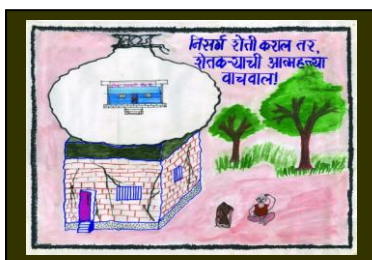
Exhibition cum Demonstrative Stall

In WSF event our associated organizations and we have organized stalls to display unique ideas and to share experiences with the delegates. Above 4500 people from the world has visited to the demonstrative stall.

Documentation

The different kind of literature and reference material publication was the integral part of the project, to enrich the perspective in information base within the project actors and associated member organizations and farmers various kind of material were developed and distributed. Such material helped us to go door step of farmers and well wishers. The details of the publications are follows.

- **Nature Farming Brochure:** on the perspective behind nature farming and essential needs for nature farming we have developed brochure in Hindi and Marathi languages for wider awareness and distributed 6000 copies in the WSF and other programs.
- **Flyer on Nature Farming:** for the interested peoples in nature farming we have compiled nature farming information in form of flyer in English & Marathi and distributed 250 copies each for awareness and education of the farmer and associated members.
- **Campaign Posters:** Awareness campaign on each issue is important aspect, therefore we have published 6 colorful posters and exhibited in the stall in WSF as well as used in the rallies on nature farming.



- **Photo Exhibition:** 6 variety of photo posters exhibited in WSF



- **Compilation of Resource Material:** Prepared compilation of the articles on nature farming experience written by Animators and distributed in quarterly meeting.

Video Documentation

During this period major video documentation on technical aspect were made on technical part of the experiment and exhibited in the WSF. Above 500 people have seen the video documentation. We were in process of developing documentary film on it but due to drought situation in Mumbai the computer hard disk in which all the important and non recoverable media documentation was washed out. Again we have tried to develop the information and will be able to prepare documentary at the end of May 2006.

CHALLENGES FACED

We are able to demonstrate that a family of 5 people can be self-sufficient by adopting this farming model. We are really happy with the support of the visitors from different states who have appreciated our efforts. Women, youth and farmers have replicated this technique in surrounding villages. However we found following are the challenges for its replication.

- We have tried to gather support of Banks, rural development authorities like Block Development Office (BDO). But we found the schemes are more supportive for monoculture, and for promoting chemical fertilizers. Banks do not consider appeal of small farmers for credit support. Therefore, to replicate this technology there is need to get policy, finance, training level support from the government as well as responsible authorities for agriculture development. But today there is lack of this kind of effective support structure.
- The campaigns and advertisement of market are more aggressive to sale fertilizers, terminated seeds, insecticides that are making lot of impact on the psychology of the farmers and thus they become unnecessarily dependent on the chemical fertilizers, insecticides that are polluting food.
- We faced difficulty in natural disasters especially in the context of degrading situation of environment. Drought impacted in Western Maharashtra the water scarcity and hot temperature affects all the efforts to promote microorganisms, agricultural yield. Flood have vanished one of our experiment in Raigad.
- Deprived communities have not even ½ acres piece of land and the ratio of land less people is above 70% therefore it is difficult to explore livelihood alternatives to land less people.

Notable Remarks of the eminent persons visited field experiments



“I was much impressed by self reliance, self help with 12gunthe agriculture catering to entire families health and happiness”- **Professor C.R. Madabhavi.**

“The efforts taken by Ms. Laxmi and Mr. Siddram More at Bhogaon experiment for to establishing dreamful farming is notable and the learning is very high rather than the doctorate” – **Dr. V.S. Mane, Ex-Scientist Mahatma Phule Krishi Vidyapith, Rahuri**



This story was published in Annual report of Sir Dorabji Tata Trust

Greate Escape from Chemical inputs in the farm paradise! A story of GunjeGaon village.

The villagers and local government officials have been carefully watching the progress of nature farming experiment initiated by Somling Gram Vikas Mandal in GunjeGaon.

The villagers are impressed by the efforts of preparing fertile soil from biomass, appropriate use of water, use of traditional seeds etc. The villagers are astonished with high yield they have gained 137 Kilograms of Maze in one guntha (33x33 square feet) generally the yield is 40 Kilogram.

Some of them have decided to change some of the agricultural practices. During last year Mr. Ankush Chongule has saved Rs. 60,000/- by stopping use of chemical fertilizers in his farm. The other villagers also have stopped using fertilizers thus the villagers of GunjeGaon have calculated that as a village they have saved Rs. 2.10, 000/- by stopping use of chemical fertilizer more than that they say we are moving towards toxic free produce. The farmers have understood the importance of biomass as a strategy in conserving water in drought situation this year they have taken decision not burnt an 1150 tones of biomass.

The women from Nomadic Tribes community motivated 42 families have developed backyard on wastewater thus the vegetables and fruits such as Papaya is visible in the village. The 250 school children have planted trees in a village; this school has received a Adersha Gaon & Vanarai Award.



Ravi Become a Nature Farming Expert

Mr. Ravindra Suman, a youth from Koregoan taluka was selected as an Animator for a nature farming experiment in Ambavade, a village in the back water of Koyna dam in Satara. While helping villagers under the guidance of nature farming expert he learned the skill of preparing organic soil, developing microorganism.

He helped farmers and women in multi-cropping and green manure in their agricultural field, developing kitchen gardens. Now these villagers earlier displaced due to Koyna dam and suffering due to remoteness in the valley have improved yield for their survival.

Now he is helping various communities and organizations in undertaking nature farming. He is regularly guides Navegaon Andolan, Sangali as a way to rejuvenate villages; Zilla Parishad, Satara to develop kitchen gardens in school premises. He has trained 45 government officers of agriculture department on the same technique.

Suresh built his identity from fish vendor to ideal farmer



The elders of Dongargaon, a drought prone village in Sholapur district decided to call Suresh for working on his barren plot of 'awarded land' by adopting nature-farming experiment undertaken by VSP. They felt that Suresh is BSc (Botany) graduate so he would understand a scientific angle of nature farming and he is needy as he was vending fish in surrounding villages, and working as a labourer in rainy season to support his family.

He was became a laughing object in front of the villagers when he started purchasing cow urine at the rate of Rs. 1/- per liter to overcome its shortage. But villagers have realized its importance when they saw themselves the increase of yield in his agricultural plot. He processed cow urine and sold back that solution 'panchkavya' to the surrounding farmers at the rate of Rs. 20/- per liter.

Now he takes maximum yield from his 12 gunthe plot to support his family. He shares seeds, organic fruits and vegetables to other villagers. He says, *"Due to healthy produce the medical expenses of my family is reduced by 80%. Initially my elder daughter was unwell for so many times in a month but now my one-year son and daughter is healthy now. All my family members are enjoying healthy life"*.