

Vermicompost - A mean to strengthen livelihood

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ABSTRACT

A study was conducted marketing on vermicompost and the results were very encouraging. Vermicompost manure was sold by the participants on regular basis to strengthen their livelihoods. Even for domestic purpose also, vermicompost manure was quite useful for them. It indicates that, adoption of such practice needs to be promoted to the large number of people in the society. Changing faces of rural livelihoods and depletion of natural resources call an immediate action for survival of large majority of the people. Adoption of such kind of practice by not only few but by many can promise us to have better tomorrow.

KEY WORDS: Vermicompost, Motivations technique of vermicomposting, Return from Vermicomposting

How to cite this paper: Parikh, Varsha and Dave, Payal (2011). Vermicompost - A mean to strengthen livelihood. *Asian J. Home Sci.*, 6(2): 295-301.

Article chronicle: Received: 18.05.2011; Accepted: 20.10. 2011

The concept of livelihood is widely used in relation to poverty and rural development. Its dictionary definition is a 'means to living', which straight way makes it more than merely synonymous with income. A livelihood comprises the capabilities, assets (including both material and social resources) and activities required for a means of living (Dhama, 2004). A livelihood is sustainable when it can cope with and recover from stress and shocks and maintain or enhance its capabilities and assets both now and in the future, while not undermining the natural resource base. (Chambers and Conway, 1991).

In the current decade, according to estimates of the Planning Commission for the Tenth Five Year Plan, more than 10 million people in India seeking work every year. Thus, to ensure full employment within a decade, more than 10 million new livelihoods will have to be generated every year. Given the magnitude of the problem, and the dearth of resources for livelihood promotion, the task of promoting livelihoods for the poor becomes all the more urgent. However, changing faces of livelihoods in rural areas are worst. In 21st century there are several issues related to rural livelihoods in India. Globalization and vulnerability, agriculture as main livelihoods in rural India, migration and livelihoods, unprecedented numbers of farmer suicides, Big corporate houses entering into retail business, land allocation for special economic zones (SEZs), boom in information technology (IT) and IT enabled services, zero growth rates in employment are among many such

events that need introspection.

There are various government and non-government organizations who are engaged in vermicomposting project and showed successful experiments and projects by conducting it at household and farm level in India. So, looking at the upcoming trends of the market and the encouraging results of the successful projects, project worker decided to think about exploring potential benefits of vermicompost for villagers of rural areas (Tripathi, 2003; Vyas, 2009). Vadodara city of Gujarat is surrounded by villages on its all four sides. In these villages, primary occupation of villagers is farming. To grow fruits, vegetables and crops, farmers require filling the planting with manure and soil. Keeping in mind the growing popularity and market for organic manure and products, the project worker thought to pursue to continue project on strengthening livelihoods through vermicomposting for farm men and women groups of Vadodara district, as phase II.

Further, the project worker referred past action projects, undertaken in the Department of Extension and Communication for gaining better understanding of action projects. Project worker reviewed environment related documentation due to her interest in the area and she came across with action project conducted in 2007-08 on adoption of vermicompost practice by villagers. Keeping in mind the growing popularity and market for organic manure and products, the project worker thought to pursue this project.

Objectives:*Broad objective:*

To strengthen livelihoods through vermicomposting among farm men and women from the selected villages of Vadodara district.

Specific objectives:

- To develop skills among the farm men and women to implement vermicomposting as a technique of income generation.
- To assist the farm men and women in finding avenues for selling vermicompost manure.
- To motivate the farm men and women for developing kitchen garden at their respective homes.
- To develop skills among the farm men and women to develop kitchen garden at their respective homes.

RESEARCH METHODS**Plan of the project:**

In order to systematically and successfully implement project on vermicomposting as a means to strengthen livelihood, the steps followed during the project are discussed under the following headings:

- Situation analysis of earlier attempt of vermicompost practice.
- Collaboration with organization under the project.
- Selection of the villages.
- Training of the project worker.
- Learning materials developed under the project.

Situation analysis of earlier attempt of vermicompost practice:

To assess the current situation on earlier attempts of vermicompost, the project worker made personal visits on earlier project sites *viz.*, villages of Gohilpura and Kotna. To approach previous project participants, the project worker obtained name list from the Department of Reading and Documentation centre. A set of fundamental questions pertaining to current situation of vermicompost manure production was prepared by the project worker. It comprised of the information related to the kind of units, quantity and usage of vermicompost manure production, interest of the participants in continuing this programme and so on. Through personal visits, individual and group meetings and observations, above information were sought by the project worker from previous participants of both the villages separately. There were more than fifty per cent of the participants who were continuing vermicompost practice in small units.

Collaboration with organization under the project:

Society for Village Development in Petrochemicals Area (SVADES, which had supported financially earlier project), the same NGO showed its interest to finance this project also looking to the new design of the project and by knowing willingness and benefits to the villagers. Project worker prepared proposal on strengthening the livelihoods through vermicomposting highlighting the following two main aspects under the project: taking up of vermicomposting as income generating activity, development of kitchen garden and submitted to the SVADES. It got sanctioned by SVADES in June, 2010.

Selection of the villages:

Same project sites of earlier project work *viz.*, Gohilpura (which is situated 18 km away from Vadodara city) and Kotna (which is situated 22 km away from Vadodara city) were selected by the project worker for executing project activities mainly because of the willingness and enthusiasm of the previous project participants and interest of collaborative agency in sustaining efforts on previous project activity due to their earlier investment.

Training of the project worker:

Before planning and executing the project on strengthening livelihoods through vermicomposting, project worker adopted this vermicompost technique first at her home. She also sowed vegetable seeds in her home garden to get firsthand experience of the project activity.

Learning materials developed under the project:

Keeping in mind needs of the participants, the project worker prepared a set of flip chart on process of vermicompost manure and leaflet to promote kitchen garden in local (Gujarati) language.

Execution of the project:

The project worker executed project after planning all the aspects of the project under the following steps:

- Approaching and attracting attention of the people for the project activities.
- Arousing interest, convincing people and promoting awareness about the project activities.
- Leading to action and guiding for the project activities.
- Monitoring the execution of the project.
- Profit distribution of the project.
- Follow-up action and handing over of the project.
- Evaluation of the project.

- Achievements of the project at a glance.
- Conclusion.
- Recommendations.

Approaching and attracting attention of the people for the project activities:

With previous group of members as well as with new group of villagers in the initial meeting the project worker tried to bring attention of the people towards concerns on livelihood issues mainly on increasing inflation, depletion of natural resources, garbage disposal problems and so on. In this regard she highlighted how vermicompost is beneficial as an income generation activity and as well as its benefits to natural resources like soil, land and water.

Arousing interest, convincing people and promoting awareness for the project activities:

Project worker shared individually and in group meetings about the promotion and upcoming trends of organic products and farming and its potential market. An expert Mr. Jivraj Vala from "SARJAN" NGO of Bodeli, was also invited to share his own experience in this area. In all, fifty nine participants were approached among which thirty participants got convinced to start the project.

Leading to action and guiding for the project activities:

Action plan lead by the project worker was categorized in following three sections.

Section I – Execution of action plan for vermicompost manure production and its usage:

Keeping in mind two distinct groups of participants *i.e.* old and new, the project worker separately executed plan with each group in a separate manner as mentioned below.

Regular visits for one and half months to the project sites at both the villages were made by the project worker to observe operational mechanisms of manure production by each of the participants. During visits, it was found that these participants had very casual approach in dealing with certain careful steps of vermicomposting process, which was delaying process of obtaining manure. Thus, a method demonstration was organized by the project worker in both the villages separately at the key leader's place at a time which was convenient to all the participants. The project worker conducted demonstration in Gohilpura village. To conduct demonstration in Kotna village, Mr. Jivraj Vala from "SARJAN" NGO of Bodeli

was invited as an expert. During interaction with participants, project worker identified and selected six potential participants who were sound in knowledge and practice level of vermicompost process to become trainers. In the second round of training, the project worker covered marketing aspects of manure selling, mainly on packaging, costing and selling, record keeping and marketing avenues. By the end of September 2010, all the 15 old project participants were ready to get their first round of manure under this project.

For new group of farm men and women, also project worker organized demonstration with the help of trainers identified from old group of participants. Then each of the following step execution of vermicompost process on field by project worker was checked. These were collection and segregation of garbage, preparation of small/large vermicompost units, preparation of waste layer of vermicompost units, checking of pH level in units, introducing earthworms in the units, Maintenance of humidity in units and precautions to be taken care for vermicompost units. As a result by the end of October 2010, all the 15 project participants were ready to get their first round of manure under this project. These groups of participants were also trained about marketing strategies. In all, there were twenty seven small units and three large units in the beginning of the project at the project site, which was expanded with seventeen more small units and seven more large units till March, 2011 because of the encouragement of the project worker. There was total of 2703 kg. manure produced by the participants during project period of September,2010-March, 2011. Out of which 2,063kg. of manure was sold by the participants and earned total amount of Rs.22,165, whereas 640 kg. of produced manure worth Rs. 6400 was used by the participants in their on farms or in kitchen gardens.

Section II –Execution of action plan to develop kitchen garden:

To prepare kitchen garden, the project worker explained the participants steps wise process *i.e.* selection of pot/open space, excavating of soil, sowing of seeds, watering and manure requirement of plants. She also distributed different types of vegetables seeds *viz.*, brinjals, ladies finger, green chilies, tomato, field beans, cluster beans to the participants. In January, 2011 the participants could obtain first round of vegetables they grew at their home. Till March, 2011, total quantity of production of different types of vegetables by the project participants were *viz.*, brinjals-32 kg, coriander leaves-10 kg, green chilies-1 kg, ladies finger-500 g,

cluster beans-500 g. The usage of vegetables were promoted by project worker in their daily diet. Some of the participants distributed vegetables to their neighbours and relatives and few of them also tried to sell it.

Section III – Capacity building of trainers to replicate vermicompost technique to other field areas.

A proposal to replicate this technique in other adopted villages of SVADES was discussed with SVADES officials. Six participants from Kotna village who had successfully executed different steps of vermicomposting process in previous and current project were identified and selected as trainers by the project worker. Trainers were given inputs in the areas of detail content of vermicomposting process, demonstration techniques, use of teaching learning materials, communication skills and confidence. The trainers imparted training by giving demonstration and using teaching learning materials on vermicompost process on different sites *viz.*, at villages of Rajgadh, Patda, Mahuvad and Kotna. They could successfully accomplish all the trainings and could reach out to different groups of beneficiaries like school children, village men and women.

Monitoring of the execution of the project:

The project worker personally monitored each phase of the execution of all the three sections of project activities *viz.*, vermicompost manure production and its usage, development of kitchen garden and training imparted by the trainers on vermicompost on different project sites. The project participants were provided necessary suggestions and inputs in these mentioned sections wherever needed.

Profit distribution of the project:

A profit distribution ceremony was organized jointly with SVADES under their women's day celebration programme on 18th March, 2011 at Refinery township of Vadodara. The fruit of labour in terms of profit was varying in each participant's case as per their manure production and selling. Many dignitaries were invited *viz.*, Honorary secretary of SVADES, Sithaben Ramanathan, Managing Committee member, representatives from Sebic Innovative Plastic Limited in the programme. Total profit amount for entire project was distributed to the participants by the dignitaries, which was varying from Rs.100/- to Rs. 5640/- as per the production and selling of manure.

Follow-up action and handing over of the project:

As project was coming to an end, the project worker needed to chart out follow-up action tasks for proper sustainability of the project. It was decided to handover project in the end of April, 2011. Following follow-up actions were discussed with SVADES officials before complete withdrawal of the project worker:

- In the month of April, 2011, the project participants expecting around 1200-1500 kg. of manure production. The project participants had been trained for different marketing strategies to sell produced manure, for which project worker along with SVADES officials strived follow-up efforts to help participants in selling the manure.

- To strengthen participants' efforts and continuity of project, a proposal to SVADES was given under the project to identify either regular linkage for selling of manure or to motivate farmers to sell manure by opening shop for organic manure.

- Further, SVADES being collaborative organization in the project, expected to provide platform to the trainers by identifying opportunities for them to impart vermicompost training within and outside Vadodara district.

- Kitchen garden is another aspect under the project in which follow-up with participants for its expansion and sustenance can be taken up by SVADES.

Evaluation of the project:

The project worker constructed a reaction scale to evaluate the project. The results of the reaction scale were reported under four categories:

- Background Information of the project participants

- Opinions of the project participants regarding vermicomposting project

- Opinions of the project participants regarding kitchen garden project

- Opinions of the project participants regarding benefits of the project

Background information:

- Nearly 43.33 per cent of the participants were in the age group of 30-39 years followed by forty per cent of them in the age group of 40-49 years.

- Majority of the participants (70 %) were female.

- Nearly 36.67 per cent of the participants had obtained education up to the Higher Secondary level.

- Majority of the participants (70 %) were living in the joint families.

- Majority of the participants (63.33 %) had farming

as their major occupation.

- Majority of the participants (60 %) had their monthly income ranging between Rs. 1001- Rs. 2000, whereas few percent (06.67 %) of them had it in the range between Rs. 2001- Rs.3000.

- High majority of (86.67%) the participants possessed their own farm and majority of (63.33 %) of them possessed farm size of 1-2 bighas.

- Equal percentages (76.67 %) of the participants were using natural as well as chemical manure in their farms.

- Nearly 33.33 per cent of the participants used 10kg- 15kg of the manure per month.

- Nearly 46.67 per cent of the participants spent Rs.100-Rs.500 monthly to buy manure, whereas few per cent 10.00 per cent of the participants were spending between Rs. 501-1001.

Opinions of the project participants regarding vermicomposting project:

All the participants (100%) -

- Were ready to continue vermicomposting project in future.

- Were ready to share this technique with other villagers.

- Felt reactions of other villagers were positive.

- Were able to understand the language of the project worker.

- Regarding the content and teaching learning materials, it was felt that it was complete and was easy to understand. Regarding instruction and procedures of teaching methods used by the project worker, demonstration and discussion both the methods were found most suitable, appropriate and easy to understand.

- Regarding reasons to participate in the project, equal and high majority (96.67 %) of the participants participated in the project for generating income and to develop cheaper manure, followed by participants (73.33 %) who joined the project to manage degradable waste.

- In vermicompost production process, half of the participants sought help of others, among which high majority (86.66%) of the participants had taken help from their family members followed by relatives (66.66 %) and friends (60.00 %), respectively. Further, majority (60.00 %) of the participants had taken help for selling manure followed by some of the participants (46.66 %) for introducing earthworms in the units as well as for putting waste into the units.

- High majority (73.33 %) of the participants did not face any problems during execution of this project.

However, some of them (26.67 %) reported problems of frogs/ants/snails and other insects.

All the participants (100.00 %) felt that the vermicomposting as an ecologically and socially helpful technique. Further, it was revealed that:

- In terms of ecological benefits, high majority (86.67 %) of the participants felt that, it saves land degradation and provides long life to the products. Participants also felt that vermicomposting technique is helpful by in getting nutrient rich manure (70.00 %) followed by management of biodegradable waste (63.33%) and sustainable environment. Further, few (6.67 %) of the participants felt that the vermicomposting leads to rehabilitation of soil.

- Regarding social benefits, majority (63.33 %) of the participants felt that, this type of projects help them to raise their status as an organic farmer, followed by feeling of making social bonds more stronger, by bringing likeminded people of the community more closer as well as becoming a responsible citizen by keeping environment clean (56.63% and 43.33%, respectively).

- All the participants had used the prepared manure to sell and earn money. High majority (93.33 %) of them also used vermicompost manure in their farms and kitchen garden.

- All the participants (100 %) responded that selling of vermicompost manure has increased their income. Majority (73.33 %) of the participants earned amount in the range of Rs. 100-1000 through selling of vermicompost manure whereas some of them (16.66%) earned amount ranging from Rs.1000- 3000. Very few (6.66 %) of them earned amount more than Rs.3000 by selling vermicompost manure.

Opinions of the project participants regarding kitchen garden project:

All the project participants (100 %):

- Received seeds of vegetables provided from the project worker.

- Were using produced vermicompost manure in their kitchen garden.

- Showed interest to develop kitchen garden as income generating activity.

- High majority of participants (80 %) had grown brinjals in their kitchen garden, followed by more than half of the participants (56.67 %) grown green chillies in their kitchen garden.

Opinions of the project participants regarding benefits of the project:

The participants were given different aspects of the

project to rank *viz.*, (1) Vermicompost manure production and marketing, (2) Kitchen garden concept and development, (3) Project worker for her co-operation and behaviour, (4) Co-operation from NGO-SVADES, (5) Overall project benefits (Fig. 1).

As shown in Fig. 1, all the participants (100 %) ranked project an excellent with reference to its different aspects as mentioned.

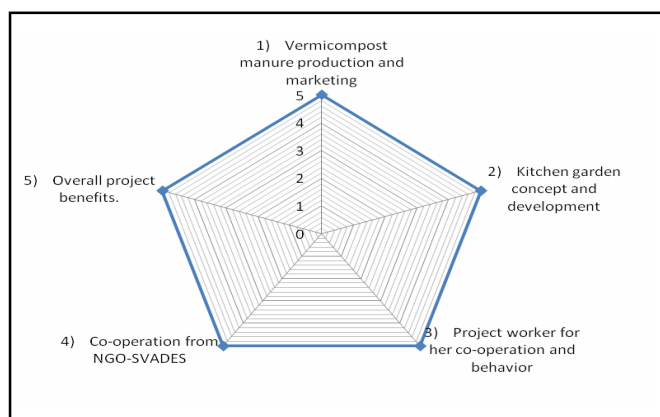


Fig. 1: Opinions of project participants on different aspects of the overall project at a glance

Achievements of the project at a glance:

The visualized effect and progress achieved in community-centred project of vermicomposting was also checked, measuring the following four main goals (Fig. 2) of enhancing capitals namely:

- Economical capital
- Natural capital
- Social capital and
- Human capital

The term livelihood in the project interpreted for participants -

- More income,

- Increased well-being,
- Reduced vulnerability and
- Improved food security.

Hence, visualized effects in achievements of project through -

- Effective use of the produced manure,
- Replicability of the project and
- Sustainability of the project helps to understand gain in the participants’ capitals *viz.*, economical, natural, social and human using vermicompost as a mean to strengthen livelihoods.

- Effective use of produced manure mainly checked by the project worker in terms of optimal use of manure for commercial and domestic purpose for economical gain. Further, its consistent use by project participants also promising to enhanced their financial capital.

- Replicability of the project aspect measured in terms of trainers developed under the project then gave training on the different project sites. Encouraging results was seen by CSR-Hero Honda group as they were approached many farm men and women to start vermicomposting project in their respective villages of Patada and Mahuvad after training imparted by trainers. Further, strengthening of individual participants’ capacities by providing knowledge and skill on vermicompost help participants to share their successful experience which in turn motivate other groups for replication of this practice.

- Sustainability aspect of the project was assessed when six trainers developed under project imparted training to other project sites successfully.

Recommendations:

A project on vermiculture technology can be taken up in phase III with the same group of participants.

Similar project with the Self-Help Groups can be carried out for promotion of income.

A research can be carried out to check the effectiveness of the vermicompost as a means to strengthen livelihoods.

Similar project can be continued for its expansion with these participants in developing vermicompost at micro enterprise.

SVADES with the help of trainers developed under the project can replicate this project design in its other adopted villages.

SVADES can replicate this project on larger level by involving entire villages selected under the project.

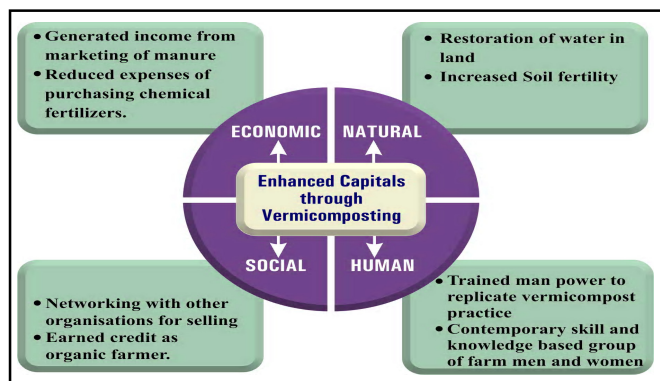


Fig. 2: Visualized effect of vermicomposting project

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