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Case studies about eco friendly conservation practices in the Nilgiris district of Western Ghats

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Abstract

Eco-friendly conservation practices is a comprehensive agricultural production system. The practices support the sustainable agricultural production and bio diversity conservation. These ecofriendly practices comprises of organic, mechanical, physical and cultural practices of agriculture. In this background two case study was conducted in the Nilgiris district of Western Ghats to assess the sustainable development of the farmers livelihood through eco friendly conservation practices. In this first case study is based on the research question of How a person gain the eco friendly farming based enterprise development by gaining of knowledge and adoption of various aspects of the eco friendly conservation practices?. And second case study is based on the research question of "How a person was able to regain the soil health improvement by gaining of knowledge regarding various aspects of the adoption of eco friendly conservation practices?. This case studies concludes that, this practice improves the soil health, pest and disease management by adoption of eco friendly conservation practices. Trainings plays important role in eco-friendly conservation practices, integrated approach, enterprise lanching skills, attitude towards environmental conservation and farmers interest towards sustainable farm production are very important factors for sustainable development and the non availability of organic seeds and appropriate organic market linkage and market promotions are main constraints identified in the study.

Keywords: Eco-friendly conservation practices, knowledge and adoption

1. Introduction

Case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used. Some sociologist termed case study as 'social microscope' mostly as an example of a general phenomenon, or of a general proposition.

A recent investigation by the Food and Agriculture Organization (FAO, 2005) ^[1] on the current status of land productivity in India revealed that there is a general trend towards declining or stagnating crop yields. These adverse trends are considered to be the result of intensive cropping through indiscriminate use of fertilizers and pesticides, continuous use of irrigation water, total removal of biomass from the agricultural fields and some other activities. These have generated new sets of problems such as soil erosion, loss of soil fertility, deficiencies of sulphur and zinc, etc. Reduced use of agro- chemicals by encouraging eco-friendly agricultural farming is steadily gaining popularity through the world and there are strong organic movement everywhere in Europe and North America (Joshi and Prabhakarasetty, 2005) ^[2].

Eco-friendly conservation practices are a comprehensive agricultural production system intensively engaged in accordance with the principles of ecology. The practices that are used in ecological agricultural production and bio diversity maintenance are known as eco friendly conservation practices. These practices are mainly organic, mechanical, physical and cultural practices of agriculture (Joshi and Prabhakarasetty, 2005) ^[2]. In light of the above case studies were conducted to evaluate and assess the impact of eco friendly conservation practices in the Nilgiri district of Western Ghats.

Case study-1

The subject of the case study was How a person gain the eco friendly farming based enterprise development by gaining of knowledge and adoption of various aspects of the eco friendly conservation practices?. The case study about the practices of eco-friendly conservation practices followed by the farmer in The Nilgiris District.

Mr. N. Prabhunanjan a 36 years old man lived in the village Porarhatty, block of Coonoor under The Nilgiris district. This village is a remote village under the Hubbathala village panchayat. His education was of collegiate level. He received first class degree in the subject of Biochemistry. The family size of that farmer was 6 numbers and possessed 7.00 ha of farm land. Annual net income of the respondent was 3 lakhs. The farmer had 14 years farming experience. Out of this 14 years of experience; he was directly involved with organic farming and bio dynamic farming practices from the year 2003 to 2014 through the NGO's support (Earth trust, Ooty). He has 10 years of intense experience of attending various training programs and practical experience in the eco friendly conservation based farming practices.

In this case, the farmer's parents were practices chemical fertilizers and pesticides based crop cultivation in their farm fields. Due to the educational and eco-friendly conservation practices of organic farming and biodynamic farming oriented agricultural practices related training's impact, he initiated the eco friendly farming practices with the eco-friendly conservation based knowledge, attitude and motivational programs through the NGO support. He started his agricultural operation through eco friendly conservation practices in innovative and successful manner. Consequently he started organic farming company in the name of 'Vijayalakshmi natural farms'. He suggested other neighbouring farmers to use eco-friendly conservation practices in their farmlands.

The Nilgiris hilly areas are gifted with varied agro-climatic conditions. More than 80 per cent of the population in hilly areas directly or indirectly depends on off-season vegetable production. The importance of vegetables in providing balanced nutritional diet to the people and hilly regions become off-season in the plains as result growers fetch lucrative returns. In this, he introduced the diversification in hill agriculture can be brought through introduction of rare exotic vegetables such as asparagus, broccoli, and red cabbage. The following important eco friendly conservation practices in their farm lands.

1. The most important eco friendly conservation practices were mulching and compost preparation in their own farm itself (Farm residue management).
2. Crop rotations are at the heart of organic farming. It supports the diversification farm practices.
3. Neem cake usage control the nematode and cut worms infestation in the vegetables.
4. Cultivation of lemon grass (Vetiver) crop to control the soil erosion.

At present, he cultivates seasonal vegetables (summer and winter), tea plantations papaya in his land. His family members are directly or indirectly involved and inspired by bio dynamic farming practices. He cultivates the crops by using manures cow dung, compost and FYM instead of chemical fertilizers. In case of vegetable cultivation he depends mainly on manures. He never uses any pesticides and chemical fertilizers for vegetable cultivation but during the severe pest attack he uses reasonable bio pesticides and biodynamic pest control solutions. He uses cultural practices like hand weeding and weeding by hand hoe for weed control. He is very much conscious about the most important

component of biodynamic farming practices like biological control, cultural control of pest etc.

In that organic tea cultivation, he is following handmade tea preparation. For that, he collect the tea leafs and separated as Green tea, White tea, Yellow tea and Black tea with quality. He has the organic farming certificate for his company. So, through this, he sell and export the products to the demanded distance market with quantum jump sale price. He also stated that by using the aforesaid eco-friendly conservation practices in crop production he could lower his production cost without decreasing his production and save more money by selling organic products in the market. Through this saving of money he improved his living house, cowshed and purchased an irrigation machine and seed drill.

He is enterprising the company (Vijayalakshmi natural farms company) to market his farm produce through value addition and direct marketing process. The organic products were marketing in local market, inter city and export market without the involvement of middlemen (Direct sale to the consumers). He is selling the farm produce through on line marketing by displaying the available organic products with the quantity in the web sites and mode of payment also online payment. The physical transaction carried out with the support of connected transport vehicles for this purpose. As stated, Mr. N. Prabhunanjan was able to overcome his previous losses of soil health and environment. Moreover, by minimizing production cost he saved money. Due to his role, he is honoured as an opinion leader, and as acting directly and indirectly to spread the idea of biodynamic farming practices to other farmers in his community.

ITKs in practices

- In the process of preservation and storage of seeds he used neem leaves.
- In the storage pulses, potato he is using sand for long preservation.
- He is using traps to control the insects and pest attack.

Finally, he reported that; these practices improved the soil health and helped in the management of pest and diseased by applying eco friendly conservation practices. It also improved his family health by pesticide free foods and it protect the environment for sustainable production.



Plate 1: Eco-friendly conservation practices of bio manure preparation



Plate 2: Preventing the inorganic materials by covering the nets out side the fields and diversified farm practices.

Case study-2

The subject of the study was “How a person was able to regain the soil health improvement by gaining of knowledge regarding various aspects of the adoption of eco friendly conservation practices.” Mr. O.V. Dency, a 42 years old man who lives in the village Makkumula, block of Gudalore under The Nilgiris district. He studied up to class ten only. His family size consists of 5 members, he possesses 2.6 ha lands. He is a successful eco friendly farmer. He received trainings from the State Department of Agriculture in the fields of Integrated Pest Management (IPM) practice, environment friendly Integrated Farming System (IFS) and Integrated Nutrient Management (INM) from Farmers Field School (FFS) for 2 months and he made contact with block level agricultural officers for adoption of eco friendly conservation practices. He also attended various training programmes conducted by organic farming forum oriented NGOs namely Dr. Nammalvar, Mr. Subasbalakar etc. Afterwards by his own interest he adopted eco-friendly agricultural practices through IFS, INM and IPM components of eco friendly conservation practices with less economic motivation.



Plate 3: Mulching the field by compost

He also received trainings on livestock, poultry, fish rearing and management. Through his effort, he got loan from commercial bank with minimum interest for extension of integrated farming system unit (Crop, livestock, poultry and fishery), because of that his standard of living was improved. He cultivated the crops of nutmeg, cardamom, jack fruit, pepper, arica nut, vanilla, fodder grass, coffee, chillies, sugar cane, ginger and banana through the mixed cropping pattern and his annual net income was 2 lakhs. He is transferring the

knowledge and experiences to other farmers for further increased level of adoption.

Constraints mentioned by him were

1. These eco friendly farm products needs stabilized markets and market intelligence.
2. Seed availability is not possible with the organic mood.

Conclusion

This case studies concludes that, this practice improves the soil health, pest and disease management by applying eco friendly conservation practices, improves the human health and protect the environment. Trainings plays important role in eco-friendly conservation practices, integrated approach, enterprise lanching skills, attitude towards environmental conservation and farmers interest towards sustainable farm production are very important factors for sustainable development and the non availability of organic seeds and appropriate organic market linkage and market promotions are main constraints identified in the study.

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