

# Financial Analysis of the Private Organic Farm: Sanga Agro Farm

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## Abstract

*This study was carried out to find out the financial profitability of a private organic farm of Sanga, Kavre. In order to fulfill the objective, the study used both primary and secondary sources of data. The primary data were collected using interview with the owner of organic farm and farmers. Such responses of informants were analyzed by presenting them in tables and interpreted through Benefit Cost Ratio (BCR) in 10 percent discount rate. For this, all figures were converted into Net Present Value (NPV) of Nepalese rupees. The findings of the study showed that the BCR was greater than one such as 1.47 ratio ( $BCR > 1$ ). The BCR value showed that the farm has contributed to increase more profit to owner by selling the farm's products. The project of organic items was able to produce fresh items and provide space for employment. These organic products supported human health, soil health, and maintained conducive environment.*

**Keywords:** Organic farming, transactions, solvency, liquidity, stability, profitability, gestation period.

## Background of the Study

Financial analysis is the process of evaluating projects, budget and other finance related transactions to determine financial strengths and weaknesses of the company. It is also called financial statement analysis (accounting analysis). It is an assessment of how viable, stable and profitable a project is. It is analyzed for profitable investment. It looks at many aspects of projects from its profitability and stability to its solvency and liquidity. It is a method involving specific techniques for evaluating risks, performance, financial health and future prospects of an organization. It helps in decision making process of a business or project. Supporting this view, Shkodra et al. (2011) state that the financial analysis plays an important role in decision making process for every kind of business. According to them, financial analysis is more beneficial to agro farm, and consciousness of managers and their knowledge is more important for financial analysis.

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The value chain in each intervention of projects is needed in order to find out the economic and financial profitability. In agriculture and agro-business, value chains development projects aim to support farmers' productivity and preservation of their farm. International Fund for Agricultural Development developed value chain including inputs, farmers, processors or manufacturers, retailers or exporters and consumers. It used market prices to assess the financial profitability for farmers, while economic prices are considered in evaluating the project for the society. Most of the agro projects have earned less financial profitability (IFAD, 2016).

This study has analyzed the financial profitability of the private organic farm that lies in Banepa Municipality, Sanga, Kavrepalanchowk district. It lies near by Kathmandu valley. This project was regulated through organic method using organic fertilizers to grow major vegetables such as cabbage, mushroom, cauliflower, tomato, spinach, radish, green leaf, garden cress and beans. The target market for the product of the project is Kathmandu valley. The whole products of the farm were collected and distributed from Summit Hotel, Kupondole, Lalitpur. During the gestation period, the project is normally large and is less affected by the climatic condition because of shed in farming. Such organic farms produce fresh and hygienic food items that the consumption of such items keeps us healthy. It shows that the production of organic food items occupy important space in public health. As the producers do not use pesticides and other harmful chemicals among the vegetable plants and in the fields, it does not pollute the surroundings and always support to maintain conducive environment to human health. So the project is environment friendly and it has spillover effects such as employment creation, use of local resources and inducement for local people to copy similar project. These are the reasons behind selecting this project. In addition, such project was running investing low cost from financial point of view. The future aims of the project are to expand the farm and regulate poultry farming, goat farming and horticulture.

### **Statement of the Problem**

Nepal is an agriculture-based country. The Three Year Interim Plan (2007/8- 2009/10) of the government of Nepal described need to secure Nepal's access to the international markets by increasing the credibility of its organic projects and the very policy is still in existence. However, most of the farmers have cultivated the land without technical knowledge and low level of equipment especially, the small farmers. Only few people and few consumers have knowledge about organic food and its importance for health and environment. The organic agriculture production in Nepal is best hoped for the country in the context of international competition to earn foreign currency. People are less conscious about organic products, their importance, consumptions, public health and environment. This study is based on such backgrounds.

## **Objective of the Study**

Majority of the farmers in Nepal have still adopted the traditional methods of agriculture and are not aware of the cost benefit analysis in farming and other fields of agriculture. In this juncture, the present study attempted to examine the actual profitability of two crops: garden cress and beans of the farm using organic production methods.

## **Review of Literature**

Young and Shumway (1991) have stated about the cow farm producers' profit maximization. They developed logistic regression (logit) model to examine how socio-economic characteristics of cow-calf producers influenced the perceptions of the producers as profit maximizes. The labor increased the producer's probability claiming to be in the business primarily to maximize profits. Some sociological reasons for owning cattle significantly reduced the probability of the producer claiming to be profit maximizes while others significantly increased the probability.

Canavari, et al. (2007) in their study stated that organic agriculture has represented alternative to conventional agriculture. Despite a still high relevance of non-economic factors and the uncertainty given by short-term and mid-term fluctuations of prices, a decisive point is whether the conversion to organic farming may be worthwhile from an economic perspective. The objective of their study was to compare the actual and potential profitability between farms using organic production methods and farms adopting conventional production methods.

The organic food market is growing strongly all over the world. The organic products are needed for better health. They help reduce the disease because they are produced without chemical and insecticides. In this context, Connolly and Moran (2007) have focused on European organic food market. Their study proved that organic cattle rearing farms was 56 percent higher than conventional farms due to lower costs of production. The organic farms were 24 percent larger than conventional farms. The organic dairy farms had 7 percent higher income over conventional dairy farm.

Following the spirit of Connolly and Moran, MC Donnell (2009) argues that organic farms have enjoyed renewed interest in recent times. The majorities of cattle farmers were making a positive gross margin but were spending some of the premia cheque to cover fixed costs. In the organic situation costs are generally lower. His study analyzes that organic cattle farm is better than organic agro farms.

To achieve the objectives, the study used primary and secondary data and applied stratified random sampling design to select the units of analysis. The descriptive tools including

average, cross tabulation, graphing and different techniques of test were adopted. The study showed that the net returns were high for marginal farms as compared with small and medium/large farms. The net return was found to vary significantly. The government provided more support to enhance the crops.

Todisca, et al. (2015) have discussed the market reorientation of farms on olive grown using organic production methods protecting the environment and the agricultural ecosystem. Their study analyzed the olive's production costs and market's position strategies. They found that rural tourism can be a potential strategy to increase the competitiveness of olive growing activities.

Brozova and Beranova (2017) in their study presented a comparative analysis of organic and conventional farming profitability to determine the economic performance of organic farms compared with conventional farms. It focused on the evaluation of the economic and financial standing of the farms using selected returns, liquidity, debt and activity related ratio indicators. The result was significant because the farm had achieved more profit. The established results showed that the situation of organic farms on the national level tends to be economically more favourable.

Dimitry and Baron (2019) focused to certify organic firms situated between the farm and the consumer along with the supply chain. The transaction cost was one reason that grown in organic farm land fails to keep pace with consumer demand for organic food. When costs were sufficiently high, certified organic handling firms was chosen directly to support farmers as they undergo the 3-year transition process. They provided advice or financial assistance. The study found that about 20 percent of certified organic firms in the sample assisted farmers with the transition. It reduced technical barriers to organic farming. It helped to increase organic production and business. The farms production had significantly increased by advice and financial support.

Murshed and Uddin (2020) in the study entitled *Organic Farming in Bangladesh: To Pursue or not to Pursue? An Exploratory Study Based on Consumer Perception* discussed about the transition from conventional to organic farming in the context of their own. The study attempted to solve whether to adopt organic agriculture or promote inorganic production, particularly to meet the need of growing population. It found that inorganic farms have occupied space because of the large amount of production, and the lack of environment and human health awareness in publics. Income constraint was a major factor that compelled civilians to buy inorganic food items that cost less and such barrier shows the potential of the organic market.

Likewise, the study of Parajuli, Shrestha and Ghimire (2020) was an attempt to find out the status of organic agriculture in the context of Nepal. Their study looked for an option that

can replace the production of inorganic agriculture. The study found that organic agriculture provides us with the benefits of environmental protection, conservation of non-renewable resources, improvement of food quality and human health status. The study concluded that the adoption of organic agriculture production improves soil health, and consumer's health. It seems a better option in a country like Nepal where integrated crop- livestock system is still in practice.

Vuckovic (2020) conducted a case study of nearly identical agricultural enterprises. The study showed that financial mix even in scope of similar companies can lead to various profit indicators through comparative financial analysis in the same industry and activities by applying methods and techniques. The study showed better results in majority of the indicators. Horizontal and vertical analysis indicators that companies in agro- business partner group used expensive external sources of financing.

The aforementioned studies have shown less attention to organic method of farming for agriculture production and the analysis of cost benefit. This study attempts to analyze the financial profitability of organic farm of Sanga, Kavre.

## **Methodology**

This study has applied a descriptive, analytical research design. For this, one organic farm was selected. To accomplish this study, both primary and secondary sources of data were used. The data was gathered from the responses of investor and farmers through survey method. The survey was conducted by visiting the farmers in the cultivated place named Sanga, Banepa Municipality, 14 of Kavre district. And cost benefit was analyzed using net present value criteria method. While analyzing the data, land, labour cost, fertilizer and seed cost, irrigation structure cost, shed construction cost, electricity, water and communication costs were included in total input cost. Similarly, beans and garden cress production was included in total output. For this, all input and output values were converted into present value with ten percent discount rate. And it was calculated for fifteen years. Then the total expected benefit was divided by total expected cost, and BCR was found. The reports and other related materials of Central Bureau of Statistics and various authentic books, research reports, articles, journals, magazines were used as secondary sources of data. The garden cress and beans were the sample plants of this organic farm.

## **Results and Discussion**

The study has analyzed the financial profitability of the private organic farm. In order to find out the profitability of the farm, this study has used benefit cost ratio in which input as expenditure and output as benefit has been used. Moreover, the profitability of this farm is expected and calculated for fifteen years in future. As the future value of money becomes

less, future value of income, cost and profitability have been converted into current value. The plantation was done five times annually for garden cress and three times for beans. The annual revenue was expected to grow at 20 percent from second year on account of the increasing awareness and market demand of organic vegetables. The annual cost was assumed to grow at 5 percent from the second year to compensate with the inflation level.

### **Benefit Cost Ratio (BCR)**

The study has discussed input and output of the farm. Input is known as an expenditure (cost) of the farm and output as a revenue (benefit) of the farm.

#### **Input**

The land, labours, fertilizers, seeds, irrigation, construction of sheds, electricity, water and communication were the major input of the project in which, land has occupied the largest cost. The cost of per ropani land was NRs. 300000, and three ropani land was purchased investing NRs. 900000. The wage of each labourer was NRs.500 and 45 labourers were used in each plantation. Here, farmers grow three times beans and five times garden cress and the total cost was NRs.180000. Similarly, five bottles of fertilizers were purchased paying NRs.300 for each bottle and the amount was NRs. 1500. Ten packets of seeds were purchased paying NRs. 2000 for a packet and the total cost of seeds was NRs.20000. The organic farm spent NRs.50000 to construct the irrigation structure. Nine sheds were built by spending NRs.10000 for per shed and total amount of shed construction was NRs. 90000. And NRs.50000 was spent in electricity, water and communication.

#### **Output**

There were varieties of plantation. For the purpose of this study, garden cress and beans have been used as an output. Garden Cress grows 900 bundles and NRs.40 for each bundle which is produced five times in a year. Beans grow 70 kgs, NRs. 70 which is produced three times in a year. Here, total income from beans was NRs.14700 and total income from garden cress was NRs. 180000. The total income of the farms (beans and cress) was NRs.194,700 during the first one year. The output was increased by twenty percent each year. These products were expensive while compared to conventional farm production method. The pesticides have not been used in such productions. Organic productions need hard work and more time with low cost.

#### **Capital Expenditure**

The present study included land, irrigation and construction of sheds as capital expenditure. The total capital expenditure was calculated by adding land cost, irrigation structure

cost, and shed construction cost: NRs. 900000+50000+90000 = NRs. 1,040,000. These expenditures occur in the base year of farming.

**Table 1: Computation of Benefit Cost Ratio (BCR)**

Year	Total Cost	Total Benefit	Net cash flow	Discount factor 10%	Net Present Value of Cost (NPV of cost)	Net Present Value of Benefit (NPV of benefit)
0	10,40,000.00	0.00	-10,40,000.00	1.000	10,40,000.00	0.00
1	251,500.00	194,700.00	-56,800.00	0.900	226,350.00	175,230.00
2	264,075.00	233,640.00	-30,435.00	0.826	218,125.95	192,986.64
3	277,278.75	280,368.00	3,089.25	0.751	208,236.34	210,569.89
4	291,142.69	336,441.60	45,298.91	0.683	198,850.46	229,789.61
5	305,699.82	403,729.92	98,030.10	0.621	189,839.59	250,716.28
6	320,984.81	484,475.90	163,491.09	0.564	181,035.43	273,244.41
7	337,034.05	581,371.08	244,337.03	0.513	172,898.47	298,243.36
8	353,885.75	697,645.30	343,759.55	0.467	165,264.65	325,800.35
9	371,580.04	837,174.36	465,594.32	0.424	157,549.94	354,961.93
10	390,159.04	1,004,609.23	614,450.19	0.386	150,601.39	387,779.16
11	409,666.99	1,205,531.08	795,864.09	0.350	143,383.45	421,935.88
12	430,150.34	1,446,637.30	1,016,486.96	0.319	137,217.96	461,477.30
13	451,657.86	1,735,964.76	1,284,306.90	0.290	130,980.78	503,429.78
14	474,240.75	2,083,157.71	1,608,916.96	0.263	124,725.32	547,870.48
15	497,952.79	2,499,789.25	2,001,836.46	0.239	119,010.72	597,449.63

**Source: Field Survey, 2020**

All figures are in Nepalese Rupees.

Total Net Present Value (NPV) of cost was calculated by adding the expected cost for fifteen years and the figure of total expected cost was Rs.3, 564,070.45. Likewise, total Net Present Value (NPV) of benefit was calculated by adding the expected benefit for fifteen years and the figure of total expected benefit was Rs. 5,231,484.70.

The formula for BCR was calculated by using the following steps.

Step 1: Determine all the cash outflows which were basically the costs to be incurred in order to complete the upcoming project. It was the initial investment of a project.

Step 2: Determine all the cash inflows or benefits that were expected from the farm. Incremental revenue or sales and cost savings were expected benefits of farm.

Step 3: Determine the discounting rate based on available market information or opportunities cost.

Step 4: Computed the present value of all the expected cash outflows or costs by using 10 percent discounting rate.

Step 5: Computed the present value of all the expected cash inflows or benefits by using 10 percent discounting rate.

Step 6: The formula for a benefit-cost ratio was derived by dividing the benefits from the farm by the present value of all the expected costs of the farm as shown below.

Benefit Cost Ratio (BCR) equals to Present Value (PV) of benefit divided by PV of cost. It is shown as  $BCR = \text{Rs. } 5,231,484.70 / 3,564,070.45$ . So,  $BCR = 1.47$ .

The result of benefit cost ratio showed that the project was economically and financially viable. Similarly, the present value of benefit was more than present value of cost. Here, the study used Nepalese rupees in accounting of net present value of the project's costs and benefits. This finding is similar to the study of Canavari et al. (2007) which concluded that organic agriculture represents the alternative to conventional agriculture and is worthwhile from economic point of view. However, the interpretation of the present study is different from Connolly and Moran (2007) who concluded that the organic cattle farm showed more benefit than the organic agro farm.

## **Conclusion**

The present study is the financial analysis of private organic farm located at Banepa municipality, 14, Sanga of Kavrepalanchowk district of Nepal. This study used two crops: green plant garden cress and beans. The study has revealed that total present value of cost is Rs. 3,564,070.45 and total present value of benefit is Rs. 5,231,484.70. Similarly, the benefit cost ratio is 1.47. The results of benefit cost ratio show that the project is feasible as the value of BCR is more than one. The value of benefits, value of costs and value of profitability have been converted into current price (in Nepalese figure) with 10 percent discount rate in this study. It concludes that this organic farm project can support public health, maintain environment protection. So it is more beneficial for human life because it does not pollute the environment. It uses local raw materials. The farm can run with low cost and provide employment for educated and uneducated people. It supports in creating human immunity to fight against the diseases.



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