

COSTS OF PRODUCTION AND BENEFIT COST ANALYSIS OF FRUIT FARMING IN NEPAL

2073/74 (2016/17)



Government of Nepal
Ministry of Agriculture Development
Department of Agriculture

Agribusiness Promotion and Market Development Directorate

Market Research and Statistics Management Program
Hariharbhawan, Lalitpur

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FOREWORD

Market Research and Statistics Management Program (MRSMP) has been publishing annually “Costs Of Production and Benefit Cost Analysis of Fruit Farming In Nepal” with useful agricultural information. This study is a regular activity of MRSMP. The objective of this program is to generate reliable data and their dissemination as far as possible. This is comprehensive and valuable information which is presented by encompassing updated data and information relating to Nepalese fruit crops. The information on cost of production of the fruit crops and their benefit cost analysis is crucial for program planning, monitoring and policy making as well as related agricultural aspects of the country. Analysis of these types of data are imperative for commercially driven agriculture enterprises.



Information is a power and valid information is a foundation for sustainable development of agriculture enterprises like fruit crops as well as making these farming operations competitive in the global market, and will be key for economic development of the country.

My deep gratitude goes to Mr. Dinesh Bhattarai, Senior Statistical Officer, for his valuable technical contribution to prepare this publication in this useful format. I express my gratefulness to Mr. Narendra Kumar Mahaseth, Senior Extension Officer, Mr. Gokrana Sharma Acharya, Agriculture Economist and other staff under this organization for their direct and indirect involvement to accomplish this report in anticipated time.

My words of thank goes to all Senior Agriculture Development Officers and other staffs of related Districts and farmers. Lastly, my special thank is to the Technical Committee and the Department of Agriculture for valuable directions and guidance to accomplish this report in this comprehensive shape.

I welcome advice and comments from the users for further improvement of this publication.



Januka Pandit
Chief

Ashad, 2074

Market Research and Statistics Management Program

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Cost of Production and Benefit Cost Analysis of Fruit Farming in Nepal

1. INTRODUCTION

Agriculture has become a way of life for 65% of the people in Nepal. This sector is contributing average 29.37% to the Gross Domestic Product (GDP) from 2068/69 to 2072/73 (Economic Survey, 2016/17). Moreover, horticulture contributes 16.75%, where from vegetable is 9.71% and from fruits and spices is 7.04 to the total Agricultural Gross Domestic Product (AGDP). Agricultural diversification and commercialization have drawn attention to the planners and policy makers in terms of generating more income, employment opportunities and biodiversity conservation. The cultivation of high value and low volume crops and optimum utilization of the available resources for production, processing and marketing operations has been conceived for the sustainable development of the nation. A twenty years Agriculture Development Strategy (ADS) has implemented since 2015 with a view to develop overall economy and thus gain agricultural trade surplus. Nepal being rich in climatic diversity, we have wider scope for the production of various types of fruits and vegetables. Horticultural crops can contribute in food security, improve nutritional status, and provide employment opportunities, increase income and thus increasing the overall GDP of the country. Compared to the traditional food grain crops like maize, wheat, rice, fruit farming has been found much more profitable. The area under fruits cultivation in Nepal is 1,57,199 hectare where the production area is 1,10,586 hectare (MoAD, 2015/16). Citrus alone contributes about 22.37% of the total fruits production of the country. During fiscal year 2015/16, we have climate as well as land topography very much suitable for fruit cultivation. Thus there is need to explore the potentiality of fruit cultivation in Nepal for export promotion as well as import substitution to raise the living standard of the farmers.

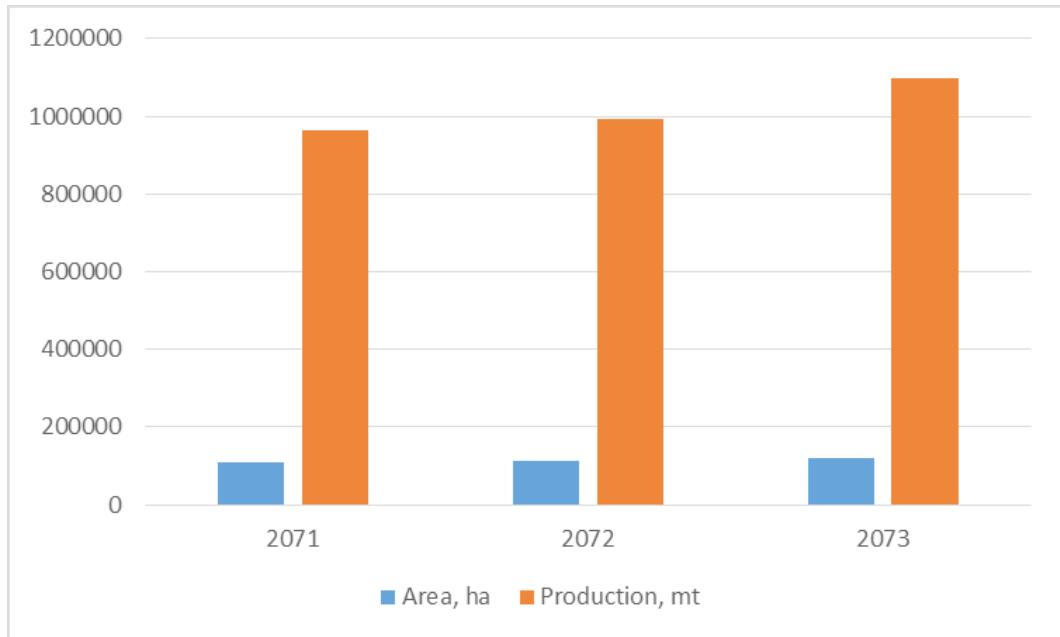


Figure 1 : Productive area (ha)and production (MT) trend of fruit crops from 2071-2073 in Nepal

The production of fruit was in increasing trend irrespective of decreasing area (Figure 1). The production was found greater in 2014 compared to the preceding years. The importance of agriculture sector and its overall development is directly linked with the objectives of meeting basic needs of the people. Increasing farm production and farmers' income depend upon how the farmers plan and manage their farms. Farmers usually do production planning and management in their own judgment as per individual's family needs. However, they surely can maximize their farm income by adopting profitable enterprise. Management of resources for maximizing the returns and minimizing costs as well as improving the overall efficiency of farmers is the major concern of all the institutions involved in uplifting agricultural livelihood. Information on production cost is fundamental and is helpful to all the policy makers; agricultural scientist, researchers and farming communities including the farmers need to be aware.

The present report aims to fulfill the above kind of requirement for major agricultural growers concentrating on major fruit crops including Mandarin Orange, Sweet Orange, Apple, Mango, Litchi, Kiwi, Banana & Lime.

2. OBJECTIVES

The general objective of this study is to provide detail information on production costs and gross profits from fruit farming in Nepal.

The specific objectives are:

- To analyze cost of production of different fruit crops by districts.
- To provide data on the cost items and gross profit of major fruit crops under different conditions.
- To estimate benefit cost ratio of different fruit crops.

3. RATIONALE

The yield and input use level, therefore, as it will be noted, will appear to be higher compared to the national average production. Nevertheless, it is hoped that it would be helpful to assess the status of various efficiency indicators and provide basis to judge appropriate resource allocations by farmers so that the effective costs can be reduced to some extent if possible. In addition this report will also assist toward formulation of appropriate price policy. This data will be a great asset to plan their fruit farm in future. On the basis of benefit cost (B/C) ratio, farmers can select the most profitable fruit crop, plan accordingly and can get more profit from the selected farm business. Value chain is another important tool, on the basis of production; some processing industries may be established which add value to the product, jobs opportunity and help to reduce the poverty in grass root level.

4. METHODOLOGY

The districts are selected on the basis of area of production and in consultation with district agriculture development offices (DADOs). Generally, DADO declared some VDCs as pocket areas of fruit production on the basis of area cultivation. The farms are selected from those pocket. PMAMP project also declared some VDCs of the districts as pocket, block, zone and superzone eg Sindhuli as a superzone of sweet orange. The data collected by conducting household surveys on major fruit crops growing areas of various districts. At least 30 households are taken as a sample farms from one district. This report also uses the published reports of some DADOs on cost of production of agricultural crops as part of their annual program and the input data supplied by the DADO. Similarly, the wholesale price data is used from the reports of Agribusiness Promotion and Market Development Directorate. Secondary information regarding the cost of production and yield of fruit crops were collected

from Fruit Development Directorate, Kirtipur. The data are processed and analyzed by using software strata & Excel.

5. DEFINITION AND CONCEPTS

The followings are the list of definitions and concepts used in the study.

5.1 Cost of Production

Cost of production is reported in two forms viz. (a) Total cost per hectare and (b) Cost per plant.

(a) Total Cost

This is the summation of both variable and fixed cost, both costs in cash and kind including household labor incurred during the production process.

(b) Cost per plant and Cost per Kg

Cost per plant is to be computed on the basis of "total cost" minus "value of by-product" divided by "total number of plants" using the following formula.

$$\text{Cost per Plant} = \frac{\text{Total cost per hectare} - \text{Value of by-products}}{\text{Total number of plants}}$$

However, as no by-products were reported to have been valued, the by-product case is not applicable at this point. So the formula will remain at this moment as:

$$\text{Cost per Plant} = \frac{\text{Total cost per hectare}}{\text{Total number of plants}}$$

Cost per Kg is to be computed on the basis of "total cost" minus "value of by-product" divided by "volume of main product in Kg" using the following formula.

$$\text{Cost per Kg} = \frac{\text{Total cost per hectare} - \text{Value of by-products}}{\text{Total production}}$$

5.2 Production Condition

Production condition may vary within and between the districts depending upon its geographical conditions and niches of the respective districts. Varieties of fruit crops (Local/ Improved) under which the crop in question is cultivated.

The cost calculation of perennial crop is different than seasonal/annual crops. Generally, the

fruit crops are perennial and produce fruits after 4-5 years of plantation. During this period, farmers may make the use of land to cultivate intercrops which are seasonal in nature like cereals and vegetables. So, upto 4-5 years, the farm is in loss due to no production and just after 4-5 years, fruit plant start to produce fruits and the farm may proceed in profit condition. So, It is not good to calculate B/C ratio before production. There are four major components to be considered in cost calculation. They are called factors of production like Land, Labor, Capital and Management. These four factors of production were taken as a major part of cost of production calculation.

5.3 Total Variable Cost

Total variable costs are the costs at market price level and incurred both in cash or kind on items such as human labor, bullock labor, seed, manures, irrigation cost, fertilizers, plant protection aids, lease land rent, interest of the capital, management cost and other miscellaneous cost. Level of these costs varies depending on production locations, technology and scale of production.

5.3.1 Human Labor

Human labor forms one of the important components of cost involved in cost of fruit crop production. It is measured in terms of adult man-day (eight working hours) in the field.

Human labor is expressed in adult man-day. Generally in rural areas, woman workday and child workday is converted in terms of adult man-day, and it is being calculated as it usually practiced.

- 1.25 woman days is equivalent to One-man day; implying 1 woman day = 0.8 man day.
- 2 child-days is equivalent to One-man day; implying 1 child day = 0.5 man day.

A. Own Family Labor

It implies the labor contribution on farm by own family members. It is the main source of farm labor in case of small and medium sized farms. For estimating such costs, family labor has been valued as paid type of labor. Labor taken on exchange basis is also included in family labor.

B. Hired Labor

Hired labor is the non-family labor employed for farm work on payment on wages in cash, kind or both. On the basis of work nature, the wage rate is different between man and women.

5.3.2 Bullock Labor

Bullock labor inputs are measured in terms of bullock day, which means use of a pair of bullock for eight hours. Bullock services costs have been calculated at the current market rate per pair of bullock per day. The cost incurred for ploughman is separately included in the human labor.

Nowadays, bullocks are being replaced by tractor in Terai and hill areas. The tractor labor is calculated per hour basis. Besides this, for the harvesting of cereal crops, harvesting machines are being used. These machineries will help to save the time and cost compare to human labor and bullock labor. These machineries are very useful to increase the benefit as well as efficiency.

5.3.3 Manures and Fertilizers

Manures and fertilizers are measured in physical as well as value terms. Marketing of manure is not usual in most of the rural areas of Nepal. As substantial amount of labor is involved in preparation of manure, a minimum cost is assigned. While taking an account of the fertilizers, Urea, Di-ammonium Phosphate (DAP) and Mauriate of Potash are commonly available in the market and applied in the farms. The cost of fertilizers has been calculated on the basis of actual price paid by the farmers.

5.3.4 Irrigation

Irrigation charge or cost incurred while hiring pump-set has been taken as actual amount paid. The labor involvement in irrigating field is accounted in human labor.

5.3.5 Propagations

In case of fruits, propagations from seed or different propagation methods are purchased from government or private nurseries. The propagation price was found lower from government institutions but the quantity is very low where private nurseries have enough numbers but the price was found higher. Generally, the propagations developed from seed will take 5 years to produce fruits but the propagations developed from different propagation methods like cutting, layering, grafting etc will take just 3-4 years to produce fruits. The price of propagations developed from seed and from different propagation methods is different. The propagations developed from seed were found lower than different propagation method.

5.3.6 Other Material Inputs

Material inputs such as pesticides and insecticides have been taken at actual price paid have been evaluated accordingly.

5.4 Fixed Cost

Fixed costs are those that do not vary with size of enterprise and have no bearing upon decisions to increase or decrease production. It includes land revenue, water tax, depreciation as well as tools and implements and interest in fixed assets.

5.4.1 Land Tax

Agricultural land is classified into upland and lowland. The land survey has divided each type of land into 4 categories namely, Abbal, Doyam, Sim and Chahar. The land tax has been taken as actual tax paid by the farmers.

5.4.2 Other Tax

It includes water tax and local tax and other governmental taxes if any levied in some special areas for specific unique purpose.

5.4.3 Depreciation

Depreciation cost is calculated on the basis of purchase value and economic life of an asset. The economic life of an asset is provided by the company. The formula for calculating annual depreciation cost is as follows:

Depreciation Cost = (Purchase value – Scrap value)/Economic lifetime of the farm asset.

For those small agricultural tools and implements, which last around a year scrap, value is not taken into account since they are negligible.

Farm families have agricultural tools and these are used virtually for almost all crops. Depreciation charge for each crop is calculated by the following formulae:

Depreciation cost/Crop = (Area under a crop x Annual depreciation cost)/ Total cropped area

5.4.4 Repairs and Maintenance

Farmers in rural areas pay a fixed amount of their main produce to local blacksmiths who provide regular services of repair and maintaining services of agricultural tools and implements in rural areas. An annual repairing and maintenance cost is calculated by using the following formula:

Repair and Maintenance = Area under particular crop x Fruit quantity paid x Price/unit
Total Cropped Area

However, payments made by the farmer for the repair and maintenance all the year round are proportioned as per the crop duration and the area of cultivation.

5.5 Interest on Working Capital

Interest on the working capital is charged cash expenses incurred are calculated as 10-12 percent per annum (Based on Agricultural Development Bank interest rate) and thus calculated for a particular crop for the months it covers the arable land and it is incurred in the conditions such as:

- a. Hired human and bullock labor
- b. Hired tractor and pump-set
- c. Other taxes
- d. Expenses incurred on material inputs such as seeds, chemicals, fertilizers, manures, insecticides and pesticides.

5.6 Lease land value

Land is another important factor for production. Generally, land leasing is not common in fruit crops but it is better to use lease land value for the calculation of B/C ratio including all factors of production. We have to include the land, labor, capital and management factors for B/C ratio calculation. Then, anyone who is interested to invest in fruit production business, they are well informed and can calculate the real cost of production including all factors of production like family labor cost, land lease value, interest of investment. In this study, land lease value of hills and mountain is estimated Rs. 1000-1500 per ropani and in case of terai Rs. 850-1000 per katha.

5.7 Management cost

It is necessary to use the management cost in cost calculation because management is also an important factors of production and fruit crops are perennial in nature. The life span of fruit crop is generally 25-30 years.

5.8 Gross Income

It is the value of the total crop produce (output) including main and by-product multiplied by farm gate price.

Gross Income = Total products x Farm gate price

In case of fruit, the crop started to produce fruits after 3-4 years. Therefore, the gross income will be positive after 5 years only. During the growth period, the business has negative gross income.

5.9 Benefit Cost Ratio

This is the ratio of the value of output including for by-product and the total cost of production on per hectare basis.

B/C ratio = Gross Income/Total cost

If the B/C ratio is above 1, then the farm is earning profit. If the B/C ratio was found less than 1 or negative, then the farm is in loss. The fruit farm will generate positive B/C ratio after 5 years only.

5.10 Gross Profit at Farm Gate

It is the difference between the gross incomes to the total cost considering the product price at farm gate.

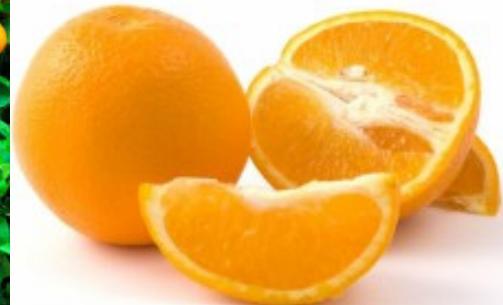
6. SOME IMPORTANT INFORMATION OF FRUIT CROPS

6.1 Mandarin Orange Tangerine (*Citrus reticulata*)



SN	Particulars	Details
1	Altitude and Temperature	950-1500 masl in the mid-hills, 5°C to 35°C
2	Planting	Asar-Shrawan (Aug-Sept), Pit digging before 2-3 months
3	Flowering and Fruiting	March-April (Falgun-Chaitra)
4	Harvesting	November-December (Aswin-Mangsir)
5	Propagation	Grafting, Seed, Layering, Budding
6	Manure and fertilizer	30-50 kg FYM or compost (2 doko), 544 gm DAP, 874 gm Urea and 833 gm Potash
7	Plant Density	300 plants/ha (15 plants/ropani)
8	Spacing	5 m * 6 m
9	Varieties	Dhankuta local, Pokhara local, Local, Nagpur, Ponkan, Kinnow

6.2 Sweet Orange (*Citrus sinensis*)



SN	Particulars	Details
1	Best	800-1400 masl in the mid-hills, 5°C to 35°C
2	Planting	Asar-Shrawan (Aug-Sept), Pit digging before 2-3 months
3	Flowering and Fruiting	March-April (Falgun-Chaitra)
4	Harvesting	November-December (Aswin-Poush)
5	Propagation	Grafting, Seed, Budding, Layering
6	Manure and fertilizer	30-50 kg FYM or compost (2 doko), 250 gm DAP, 400 gm Urea and 500 gm Potash
7	Plant Density	300 plants/ha (15 plants/ropani)
8	Spacing	5m*6 m
9	Varieties	Washington navel, local, Valencia let

6.3 Apple (*Malus pumila*)



SN	Particulars	Details
1	Best	High chilling varieties : 2000-3000 masl Mid chilling varieties : 1500-2000 masl Low chilling varieties : 1200-1500 masl
2	Planting	Poush-Magh (December-January), Pit digging before 2-3 months
3	Flowering and Fruiting	July-August (Shrawan-Bhadra), Feb-March (Magh-Falgun)
4	Harvesting	August-November (Aswin-Mansir)
5	Propagation	Grafting, Seed
6	Manure and fertilizer	30-50 kg FYM or compost (2 doko), 434 gm DAP, 700 gm Urea and 133 gm Potash
7	Plant Density	300 plants/ha (15 plants/ropani)
8	Spacing	6m*6 m
9	Varieties	High chilling varieties : Golden Delicious, Red Delicious, Royal Delicious, Jonathan, Well spur, Granny Smith, Vance Delicious Mid chilling varieties : Crispin, Red June, Pippin Low chilling varieties : Anna and Vered

6.4 Mango (*Mangifera indica*)



SN	Particulars	Details
1	Best	61 masl in the Terai to 600 m in the mid-hills
2	Planting	Asar-Shrawan (June-Aug), Pit digging before 2-3 months
3	Flowering and Fruiting	March-April (Falgun-Chaitra)
4	Harvesting	June-August (Jestha-Shrawan)
5	Propagation	Enarching, Seed, tongue Grafting, Shaddle grafting
6	Manure and fertilizer	30-50 kg FYM or compost (2 doko), 931 gm DAP, 1434 gm Urea and 1133 gm Potash
7	Plant Density	100-120 plants/ha
8	Spacing	10m*12 m & 8m*8 m (For Dwarf-Amrapali)
9	Varieties	Bombay Green, Dashahari, Maldaha, Amrapali, Kalkattiya, Alphonso, Langra, Chausa, Neelum

6.5 Litchi (*Litchi chinensis*)



SN	Particulars	Details
1	Best	61 masl in the Terai to 800 m in the mid-hills
2	Pit digging and planting	Asar-Shrawan (Aug-Sept)
3	Flowering	March-April (Falgun-Chaitra)
4	Fruiting	June-August (Jestha-Shrawan)
5	Propagation	Air layering, Seed
6	Manure and fertilizer	30-50kg FYM or compost (2 doko), 435 gm DAP, 1134 gm Urea and 1000 gm Potash
7	Plant Density	140-160 plants/ha
8	Spacing	10m*10 m
9	Varieties	Mujafurpur, Bedana, Colcuttiya, Seedless, Rose Scented, Shahi, Dehra Dun, China

6.6 Kiwi Fruits (*Actinidia deliciousa*)



SN	Particulars	Details
1	Best	Mid hills (1000-2200 masl)
2	Planting	Kartik-Mangsir and Poush- Magh (Jan-Feb)
3	Flowering and Fruiting	March-April (Falgun-Chaitra)
4	Harvesting	November-December (Kartik-Mangsir)
5	Propagation	Splice/bench grafting, grafting, Cutting
6	Manure and fertilizer	20-30kg FYM or (1 doko), 5 kg wood ash, 500g bone-meal
7	Varieties	Aalisan, Heyward (Female), Tomore (Male), Monty, Bruno
8	Male : Female ratio	1:8
9	Propagations per hectare	400 plants/ha (20 plants/ropani)
10	Spacing	6m*4 m

6.7 Banana (*Musa paradisiaca*)



SN	Particulars	Details
1	Best	60-800 m in the Terai to mid hills
2	Planting	Asar-Shrawan (July-August)
3	Flowering and Fruiting	July-August (Shrawan-Bhadra), Throughout the year
4	Harvesting	September-November (Kartik-Mansir)
5	Propagation	Sucker, Tissue culture
6	Manure and fertilizer	20-30 kg FYM or compost (1 doko), 239 gm DAP, 341 gm Urea and 416 gm Potash
7	Plant Density	1000 plants/ha (50 plants/ropani)
8	Spacing	2m*2 m
9	Varieties	William Hybrid, Jhapali Malbhog, Local, Robusta, Harichal, Malbhog

6.8 Lime (*Citrus aurantiifolia*)



SN	Particulars	Details
1	Best	300-2000 m in the Terai and mid hills
2	Planting	Major season : Jestha-Shrawan (June-August)
3	Flowering and Fruiting	Throughout the year (2-3 cycle)
4	Harvesting	After 3-4 years of plantation
5	Propagation	Grafting, Seed, Budding
6	Manure and fertilizer	30-50 kg FYM or compost (2 doko), 434 gm DAP, 700 gm Urea and 55 gm Potash
7	Plant Density	300 plants/ha (15 plants/ropani)
8	Spacing	4-5 m * 4-5 m
9	Varieties	Mexican, Banarasi, Local

7. RESULTS AND DISCUSSION

Land lease, interest on variable cost and management cost had higher cost percentage (42%) compared to others followed by labor (27%), propagation cost (12%), manures/fertilizers (9%), plant protection (5%) and miscellaneous (6%) (Fig 2). The Benefit cost ratio was ranging from 1 to 5. It means the profit is 5 times more than the total cost. It depends upon the fruits type and life span of the crops. In general, Kiwi has higher B/C ratio followed by Banana, and Papaya. Kiwi is new fruit for Nepal and had higher farm gate price per Kg. B/C ratio of the fruits crop varied from 1.86 to 3.66 showing their relatively higher level of profitability in terms of investment (Economic Aspects of Fruit And Vegetable Production, 1992).

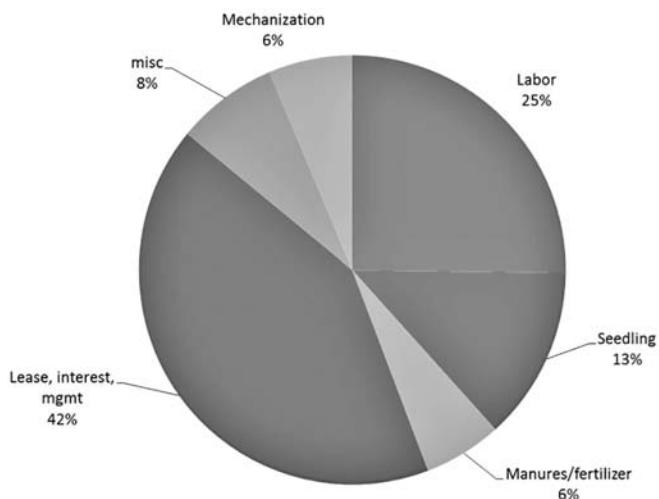


Figure 2 : Expenditure percentage on different items for production cost of fruit crops

Generally, fruit crops are perennial and have long life span of around 3-40 years. Majority of the fruit crops start to fruit after 4 years of planting. Therefore, the farm is in loss upto 5 years in case of propagations produced by seed and started to gain profit after 5 years where B/C ratio was found higher than 1. If the farmers planted grafted or layering propagation, it will produce fruits within 2-4 years. The farm will produce optimum production around 9-10 years of planting where farmers can get the highest B/C ratio. The payback period of the farm was found at 9-10 years. Then, the farm will be in profit throughout the life span of the crop. In this study, interest rate is used 11% levied by Agriculture Development Bank limited of Nepal. Interest was not added after 10 years on variable cost because the payback period of the farm was found at 9-10 years except Banana and Papaya.

The farm has production of 80% of the plant population at the start of the production and production declines by 10-20% after 15 years of plant age.

8. CONCLUSION

From the results, we can conclude that the fruit farming is profitable compared to cereals & vegetables. It means the profit gained from fruit farming was higher than the profit gained from cereals and vegetables. The fruit farming can earn more profit if we start to add value by processing in future. This enterprise provides more employment opportunities through value addition by establishing processing industry in future. These fruits are perishable in nature but we can extend their life up to six months after harvesting through cold store, cellar store and other advanced techniques which help to generate higher price than the seasonal price.

9. RECOMMENDATION

On the basis of the results obtained from this study, the Ministry of Agriculture Development and Department of Agriculture will plan the different programs for farmers. The government should focus on production of sufficient propagation as per the demand of farmers and should supply on time of plantation. The propagation produced from government farms is cheaper as compared to private nurseries. This propagation cost would play a vital role to reduce the cost and increase the B/C ratio. Besides this, the production is earlier from propagated propagations than direct from seed. The program should focus to increase the area of production including high yielding varieties to increase higher profits for farmers. The central offices should focus on reducing the interest cost by providing interest subsidy in the fruit business. The labor should be replaced by machines to reduce the cost and increase profit. The cost will be reduced by 40% if the machines replaced labor (MRSMP, 2012). Therefore, the government should provide subsidy on machines and encourage the farmers to make the use of machines from plantation to harvesting.

ANNEXES

Annex 1: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Local

Year: 2016/2017

District : Terathum
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				110645			78700
a.	Human labor	Day	58	325	18850	32	325	10400
b.	Bullock labor	Day	6	800	4800	2	800	1600
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	12	160	1920	15	160	2400
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	45	14850			0
h.	Manure	Kg	5000	1.2	6000	6000	1.2	7200
i.	Fertilizer							
	Urea	Kg	25	30	750			
	DAP	Kg	15	55	825			
	Potash	Kg	10	40	400			
j.	Plant protection chemical	Rs			3500	3	1500	4500
k.	Bordeaux mixture and micro nutrient	Lum			3500			4000
l.	Training and Pruning					4	1100	4400
m.	Equipments	Number	5	1250	6250			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				14383.85			10231
p.	Others	Rs			5000			5000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2650			2650
a.	Land tax	Rs			400			400
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			750			750
d.	Repair and maintenance of farm equipments	Rs			900			900
3	Total cost	Rs			127678.85			91581

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)				6	15	24
2	Production (Kg/ha)			1560	3900	6240	8840
3	Total income (Rs)			51480	128700	205920	291720
4	Variable cost	125028.85	88931.00	97824.10	107606.51	118367.16	130203.88
5	Fixed cost	2650	2650	2650	2650	2650	2650
6	Total cost	127678.85	91581.00	100474.10	110256.51	121017.16	132853.88
7	Profit/Loss	-127678.85	-91581.00	-100474.10	-58776.51	7682.84	73066.12
8	B/C ratio				1.06	1.55	2.00

SN	Year		8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		40	44	45	50	40
2	Production (Kg/ha)		10400	11440	11700	13000	10400
3	Total income (Rs)		343200	377520	386100	429000	343200
4	Variable cost	157546.69	173301.36	190631.50	190631.50	190631.50	190631.50
5	Fixed cost	2650	2650	2650	2650	2650	2650
6	Total cost	160196.69	175951.36	193281.50	193281.50	193281.50	193281.50
7	Profit/Loss	183003.31	201568.64	192818.50	235718.50	149918.50	
8	B/C ratio	2.14	2.15	2.00	2.22	1.78	

Annex 2: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Local

Year: 2016/2017

District : Udayapur
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				103214			76250
a.	Human labor	Day	60	360	21600	35	360	12600
b.	Bullock labor	Day	6	800	4800	1	800	800
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	150	1500	15	150	2250
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1500	4500			
g.	Sapling	Number	330	36	11880			0
h.	Manure	Kg	5000	1.3	6500	7000	1.3	9100
i.	Fertilizer							
	Urea	Kg	30	26	780			
	DAP	Kg	15	50	750			
	Potash	Kg	8	38	304			
j.	Plant protection chemical	Rs			3500	2	1750	3500
k.	Bordeaux mixture and micro nutrient	Lum			3600			4000
l.	Training and Pruning					4	1250	5000
m.	Equipments	Number	5	900	4500			
n.	Land lease value	Rs/Year			18000			18000
o.	Interest on variable cost				13417.82			9912.5
p.	Others	Rs			3000			3000
q.	Management Cost	Month	12	1500	18000	12	1500	18000
2	Fixed cost				2700			2700
a.	Land tax	Rs			400			400
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			900			900
3	Total cost	Rs			119331.82			88862.5

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			5	12	22	32
2	Production (Kg/ha)			1300	3120	5720	8320
3	Total income (Rs)		45500	109200	200200	291200	
4	Variable cost	116631.82	86162.50	94778.75	104256.63	114682.29	126150.52
5	Fixed cost	2700	2700	2700	2700	2700	2700
6	Total cost	119331.82	88862.50	97478.75	106956.63	117382.29	128850.52
7	Profit/Loss	-119331.82	-88862.50	-97478.75	-61456.63	-8182.29	149734.43
8	B/C ratio				0.93	1.55	2.06

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		40	45	48	48
2	Production (Kg/ha)		10400	11700	12480	12480
3	Total income (Rs)	364000	409500	436800	436800	345800
4	Variable cost	152642.12	167906.34	184696.97	184696.97	184696.97
5	Fixed cost	2700	2700	2700	2700	2700
6	Total cost	155342.12	170606.34	187396.97	187396.97	187396.97
7	Profit/Loss	208657.88	238893.66	249403.03	249403.03	158403.03
8	B/C ratio	2.34	2.40	2.33	2.33	1.85

Annex 3: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandaine Orange
Variety : Dhankuta Local

Year: 2016/2017

District : Dolakha
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				104910			78170
a.	Human labor	Day	60	350	21000	36	350	12600
b.	Bullock labor	Day	6	850	5100	1	850	850
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	160	1600	15	160	2400
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1400	4200			
g.	Sapling	Number	330	40	13200			0
h.	Manure	Kg	4400	1.4	6160	5800	1.4	8120
i.	Fertilizer							
	Urea	Kg	35	26	910			
	DAP	Kg	16	50	800			
	Potash	Kg	5	38	190			
j.	Plant protection chemical	Rs			3000	2	1550	3100
k.	Bordeaux mixture and micro nutrient	Lum			3250			3600
l.	Training and Pruning					5	1100	5500
m.	Equipments	Number	4	1000	4000			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				13638.3			10162.1
p.	Others	Rs			3500			4000
q.	Management Cost	Month	12	1500	18000	12	1500	18000
2	Fixed cost				2750			2750
a.	Land tax	Rs			450			450
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			900			900
3	Total cost	Rs			121298.3			91082.1

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			7	15	25	32
2	Production (Kg/ha)			1820	3900	6500	8320
3	Total income (Rs)		63700	136500	227500	291200	
4	Variable cost	118548.30	88332.10	97165.31	106881.84	117570.03	129327.03
5	Fixed cost	2750	2750	2750	2750	2750	2750
6	Total cost	121298.30	91082.10	99915.31	109631.84	120320.03	132077.03
7	Profit/Loss	-121298.30	-91082.10	-99915.31	-45931.84	16179.97	95422.97
8	B/C ratio				1.13	1.72	2.01

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		38	42	45	50
2	Production (Kg/ha)		9880	10920	11700	13000
3	Total income (Rs)	345800	382200	409500	455000	364000
4	Variable cost	156485.70	172134.27	189347.70	189347.70	189347.70
5	Fixed cost	2750	2750	2750	2750	2750
6	Total cost	159235.70	174884.27	192097.70	192097.70	192097.70
7	Profit/Loss	186564.30	207315.73	217402.30	262902.30	171902.30
8	B/C ratio	2.17	2.19	2.13	2.37	1.89

Annex 4: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Local

Year: 2016/2017

District : Ramechhap
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				113006			83975
a.	Human labor	Day	62	350	21700	38	350	13300
b.	Bullock labor	Day	6	850	5100	2	850	1700
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	12	175	2100	15	175	2625
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	38	12540			0
h.	Manure	Kg	5000	1.5	7500	6500	1.5	9750
i.	Fertilizer							
	Urea	Kg	28	26	728			
	DAP	Kg	16	50	800			
	Potash	Kg	8	36	288			
j.	Plant protection chemical	Rs			3500	2	1500	3000
k.	Bordeaux mixture and micro nutrient	Lum			4500			5000
l.	Training and Pruning				0	4	1100	4400
m.	Equipments	Number	5	1250	6250			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				14690.78			10916.75
p.	Others	Rs			4000			5000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				3150			3150
a.	Land tax	Rs			450			450
b.	Water tax	Rs			800			800
c.	Depreciation cost of farm equipments	Rs			900			900
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			130846.78			98041.75

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			8	15	22		35
2	Production (Kg/ha)			2080	3900	5720		9100
3	Total income (Rs)		74880	140400	205920	327600		
4	Variable cost	127696.78	94891.75	104380.93	114819.02	126300.92	138931.01	152824.11
5	Fixed cost	3150	3150	3150	3150	3150	3150	3150
6	Total cost	130846.78	98041.75	107530.93	117969.02	129450.92	142081.01	155974.11
7	Profit/Loss	-130846.78	-98041.75	-107530.93	-43089.02	10949.08	63838.99	171625.89
8	B/C ratio				1.08	1.45	2.10	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		40	44	49	50
2	Production (Kg/ha)		10400	11440	12740	130000
3	Total income (Rs)	374400	411840	458640	468000	374400
4	Variable cost	168106.52	184917.18	203408.89	203408.89	203408.89
5	Fixed cost	3150	3150	3150	3150	3150
6	Total cost	171256.52	188067.18	206558.89	206558.89	206558.89
7	Profit/Loss	203143.48	223772.82	252081.11	261441.11	167841.11
8	B/C ratio	2.19	2.19	2.22	2.27	1.81

Annex 5: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Local

Year: 2016/2017

District : Kavre
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				109374			79250
a.	Human labor	Day	60	350	21000	30	350	10500
b.	Bullock labor	Day	6	850	5100	1	850	850
c.	Tractor	hour	3	500	1500			0
d.	Pump set, water pond	hour	12	160	1920	15	160	2400
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1500	6000			
g.	Sapling	Number	330	38	12540			0
h.	Manure	Kg	4200	1.75	7350	6000	1.8	10800
i.	Fertilizer							
	Urea	Kg	35	26	910			
	DAP	Kg	15	50	750			
	Potash	Kg	8	38	304			
j.	Plant protection chemical	Rs			3000	2	1600	3200
k.	Bordeaux mixture and micro nutrient	Lum			3000			3500
l.	Training and Pruning					5	1000	5000
m.	Equipments	Number	4	1000	4000			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				14218.62			10302.5
p.	Others	Rs			4000			5000
q.	Management Cost	Month	12	1500	18000	12	1500	18000
2	Fixed cost				2700			2700
a.	Land tax	Rs			450			450
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			750			750
d.	Repair and maintenance of farm equipments	Rs			900			900
3	Total cost	Rs			126292.62			92252.5

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			8	15	23	33
2	Production (Kg/ha)			2080	3900	5980	8580
3	Total income (Rs)		74880	140400	215280	308880	
4	Variable cost	123592.62	89552.50	98507.75	108358.53	119194.38	131113.82
5	Fixed cost	2700	2700	2700	2700	2700	2700
6	Total cost	126292.62	92252.50	101207.75	111058.53	121894.38	133813.82
7	Profit/Loss	-126292.62	-92252.50	-101207.75	-36178.53	18505.62	81466.18
8	B/C ratio				1.15	1.61	2.10

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		38	40	45	50
2	Production (Kg/ha)		9880	10400	11700	13000
3	Total income (Rs)	355680	374400	421200	468000	374400
4	Variable cost	158647.72	174512.49	191963.74	191963.74	191963.74
5	Fixed cost	2700	2700	2700	2700	2700
6	Total cost	161347.72	177212.49	194663.74	194663.74	194663.74
7	Profit/Loss	194332.28	197187.51	226536.26	273336.26	179736.26
8	B/C ratio	2.20	2.11	2.16	2.40	1.92

Annex 6: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Pokhara Local

Year: 2016/2017

District : Parbat
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				105060			78675
a.	Human labor	Day	55	350	19250	32	350	11200
b.	Bullock labor	Day	6	800	4800	1	800	800
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	12	225	2700	15	225	3375
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	38	12540			0
h.	Manure	Kg	5000	1.3	6500	7000	1.3	9100
i.	Fertilizer							
	Urea	Kg	32	26	832			
	DAP	Kg	15	50	750			
	Potash	Kg	8	36	288			
j.	Plant protection chemical	Rs			2750	2	1600	3200
k.	Bordeaux mixture and micro nutrient	Lum			3000			3500
l.	Training and Pruning					4	1200	4800
m.	Equipments	Number	4	1100	4400			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				13657.8			10227.75
p.	Others	Rs			3250			3500
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				1975			1975
a.	Land tax	Rs			300			300
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			525			525
d.	Repair and maintenance of farm equipments	Rs			600			600
3	Total cost	Rs			120692.8			90877.75

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			7		14	24	30
2	Production (Kg/ha)			1820		3640	6240	7800
3	Total income (Rs)		65520	131040	224640	280800		
4	Variable cost	118717.80	88902.75	97793.03	107572.33	118329.56	130162.52	143178.77
5	Fixed cost	1975	1975	1975	1975	1975	1975	1975
6	Total cost	120692.80	90877.75	99768.03	109547.33	120304.56	132137.52	145153.77
7	Profit/Loss	-120692.80	-90877.75	-99768.03	-44027.33	10735.44	92502.48	135646.23
8	B/C ratio					1.09	1.70	1.93

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		36	40	42	45
2	Production (Kg/ha)		9360	10400	10920	11700
3	Total income (Rs)	336960	374400	393120	421200	374400
4	Variable cost	157496.64	173246.31	190570.94	190570.94	190570.94
5	Fixed cost	1975	1975	1975	1975	1975
6	Total cost	159471.64	175221.31	192545.94	192545.94	192545.94
7	Profit/Loss	177488.36	199178.69	200574.06	228654.06	181854.06
8	B/C ratio	2.11	2.14	2.04	2.19	1.94

Annex 7: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Pokhara Local

Year: 2016/2017

District : Baglung
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				104496			79970
a.	Human labor	Day	60	350	21000	35	350	12250
b.	Bullock labor	Day	6	800	4800	2	800	1600
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	12	150	1800	15	150	2250
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	36	11880			0
h.	Manure	Kg	4400	1.4	6160	5800	1.4	8120
i.	Fertilizer							
	Urea	Kg	25	26	650			
	DAP	Kg	15	50	750			
	Potash	Kg	12	38	456			
j.	Plant protection chemical	Rs			2750	3	1550	4650
k.	Bordeaux mixture and micro nutrient	Lum			3000			3600
l.	Training and Pruning					4	1200	4800
m.	Equipments	Number	4	1000	4000			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				13584.48			10396.1
p.	Others	Rs			3250			3500
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2750			2750
a.	Land tax	Rs			450			450
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			900			900
3	Total cost	Rs			120830.48			93116.1

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			8	15	27	34
2	Production (Kg/ha)		2080	3900	7020	8840	
3	Total income (Rs)		79040	148200	266760	335920	
4	Variable cost	118080.48	90366.10	99402.71	109342.98	120277.28	132305.01
5	Fixed cost	2750	2750	2750	2750	2750	2750
6	Total cost	120830.48	93116.10	102152.71	112092.98	123027.28	135055.01
7	Profit/Loss	-120830.48	-93116.10	-102152.71	-33052.98	25172.72	187634.49
8	B/C ratio				1.20	1.98	2.27

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		40	42	45	50
2	Production (Kg/ha)	10400	10920	11700	130000	10400
3	Total income (Rs)	395200	414960	444600	494000	395200
4	Variable cost	160089.06	176097.96	193707.76	193707.76	193707.76
5	Fixed cost	2750	2750	2750	2750	2750
6	Total cost	162839.06	178847.96	196457.76	196457.76	196457.76
7	Profit/Loss	2322360.94	236112.04	248142.24	297542.24	198742.24
8	B/C ratio	2.43	2.32	2.26	2.51	2.01

Annex 8: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Local

Year: 2016/2017

District : Rukum
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				104179			77425
a.	Human labor	Day	56	325	18200	35	325	11375
b.	Bullock labor	Day	5	800	4000	2	800	1600
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	12	150	1800	15	150	2250
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	48	15840			0
h.	Manure	Kg	4500	1.25	5625	6000	1.25	7500
i.	Fertilizer							
	Urea	Kg	28	28	784			
	DAP	Kg	15	52	780			
	Potash	Kg	10	40	400			
j.	Plant protection chemical	Rs			3250	2	1550	3100
k.	Bordeaux mixture and micro nutrient	Lum			3500			4000
l.	Training and Pruning					4	1100	4400
m.	Equipments	Number	5	900	4500			
n.	Land lease value	Rs/Year			18000			20000
o.	Interest on variable cost				13543.27			10065.25
p.	Others	Rs			3500			4000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2650			2650
a.	Land tax	Rs			400			400
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			750			750
d.	Repair and maintenance of farm equipments	Rs			900			900
3	Total cost	Rs			120372.27			90140.25

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			8	15	22	33
2	Production (Kg/ha)			2080	3900	5720	8580
3	Total income (Rs)		66560	124800	183040	274560	
4	Variable cost	117722.27	87490.25	96239.28	105863.20	116449.52	128094.48
5	Fixed cost	2650	2650	2650	2650	2650	2650
6	Total cost	120372.27	90140.25	98889.28	108513.20	119099.52	130744.48
7	Profit/Loss	-120372.27	-90140.25	-98889.28	-41953.20	5700.48	52295.52
8	B/C ratio				1.05	1.40	1.91

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)	45	48	50	46	35
2	Production (Kg/ha)	11700	12480	13000	11960	9100
3	Total income (Rs)	374400	399360	416000	382720	291200
4	Variable cost	154,994.31	170,493.75	187,543.12	187,543.12	187,543.12
5	Fixed cost	2650	2650	2650	2650	2650
6	Total cost	157644.31	173143.75	190193.12	190193.12	190193.12
7	Profit/Loss	216755.69	226216.25	225806.88	192526.88	101006.88
8	B/C ratio	2.37	2.31	2.19	2.01	1.53

Annex 9: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Local

Year: 2016/2017

District : Baitadi
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				106635			82975
a.	Human labor	Day	55	325	17875	35	325	11375
b.	Bullock labor	Day	6	700	4200	2	700	1400
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	12	150	1800	15	150	2250
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	50	16500			0
h.	Manure	Kg	4800	1.2	5760	5500	1.2	6600
i.	Fertilizer							
	Urea	Kg						
	DAP	Kg						
	Potash	Kg						
j.	Plant protection chemical	Rs			3200	3	1550	4650
k.	Bordeaux mixture and micro nutrient	Lum			4500			5000
l.	Training and Pruning					5	1500	7500
m.	Equipments	Number	4	1200	4800			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				13862.55			10786.75
p.	Others	Rs			4000			5000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2550			2550
a.	Land tax	Rs			400			400
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			700			700
d.	Repair and maintenance of farm equipments	Rs			900			900
3	Total cost	Rs			123047.55			96311.75

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			8	16	30	40	
2	Production (Kg/ha)			2080	4160	7800	10400	
3	Total income (Rs)		64480	128960	241800	322400		
4	Variable cost	120497.55	93761.75	103137.93	113451.72	124796.89	137276.58	151004.24
5	Fixed cost	2550	2550	2550	2550	2550	2550	2550
6	Total cost	123047.55	96311.75	105687.93	116001.72	127346.89	139826.58	153554.24
7	Profit/Loss	-123047.55	-96311.75	-105687.93	-51521.72	1613.11	101973.42	168845.76
8	B/C ratio				1.01	1.73	2.10	
9	Cost per Kg			54.63	34.27	19.50	18.07	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		43	45	46	48
2	Production (Kg/ha)	11180	11700	11960	12480	10400
3	Total income (Rs)	346580	362700	370760	386880	322400
4	Variable cost	166104.66	182715.13	200986.64	200986.64	200986.64
5	Fixed cost		2550	2550	2550	2550
6	Total cost	168654.66	185265.13	203536.64	203536.64	203536.64
7	Profit/Loss	177925.34	177434.87	167223.36	183343.36	118863.36
8	B/C ratio	2.05	1.96	1.82	1.90	1.58
9	Cost per Kg		16.28	16.61	16.30	19.15

Annex 10: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Local

Year: 2016/2017

District : Achham
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				111345			81100
a.	Human labor	Day	60	325	19500	40	325	13000
b.	Bullock labor	Day	7	850	5950	2	850	1700
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	12	300	3600	15	300	4500
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	5	1250	6250			
g.	Sapling	Number	330	50	16500			0
h.	Manure	Kg	4500	1.25	5625	6000	1.25	7500
i.	Fertilizer							
	Urea	Kg	25	26	650			
	DAP	Kg	15	50	750			
	Potash	Kg	12	35	420			
j.	Plant protection chemical	Rs			3000	3	1600	4800
k.	Bordeaux mixture and micro nutrient	Lum			3500			4000
l.	Training and Pruning					4	1000	4000
m.	Equipments	Number	4	1100	4400			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				14474.85			10543
p.	Others	Rs			3200			3600
q.	Management Cost	Month	12	1500	18000	12	1500	18000
2	Fixed cost				2700			2750
a.	Land tax	Rs			400			400
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			700			750
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			128519.85			94393

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO

SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)				8	14	27	32
2	Production (Kg/ha)				2080	3640	7020	8320
3	Total income (Rs)			72800	127400	245700	291200	
4	Variable cost	125819.85	91643.00	100807.30	110888.03	121976.83	134174.52	147591.97
5	Fixed cost	2700	2750	2750	2750	2750	2750	2750
6	Total cost	128519.85	94393.00	103557.30	113638.03	124726.83	136924.52	150341.97
7	Profit/Loss	-128519.85	-94393.00	-103557.30	-40838.03	2673.17	108775.48	140858.03
8	B/C ratio					1.02	1.79	1.94
9	Cost per Kg				54.63	34.27	19.50	18.07

SN	Year		8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		39	42	47	50	40
2	Production (Kg/ha)		10140	10920	12220	13000	10400
3	Total income (Rs)		354900	382200	427700	455000	364000
4	Variable cost	162351.16	178586.28	196444.91	196444.91	196444.91	196444.91
5	Fixed cost	2750	2750	2750	2750	2750	2750
6	Total cost	165101.16	181336.28	199194.91	199194.91	199194.91	
7	Profit/Loss	189798.84	200863.72	228505.09	255805.09	164805.09	
8	B/C ratio	2.15	2.11	2.15	2.28	1.83	
9	Cost per Kg		16.28	16.61	16.30	15.32	19.15

Annex 11: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Local

Year: 2016/2017

District : Palpa
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				108720			82100
a.	Human labor	Day	55	350	19250	38	350	13300
b.	Bullock labor	Day	6	800	4800	2	800	1600
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	12	150	1800	15	160	2400
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1600	6400			
g.	Sapling	Number	330	42	13860			0
h.	Manure	Kg	5000	1.3	6500	6000	1.3	7800
i.	Fertilizer							
	Urea	Kg	30	26	780			
	DAP	Kg	15	50	750			
	Potash	Kg	10	38	380			
j.	Plant protection chemical	Rs			3200	3	1600	4800
k.	Bordeaux mixture and micro nutrient	Lum			4000			4200
l.	Training and Pruning					5	1000	5000
m.	Equipments	Number	4	1250	5000			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				14133.6			10673
p.	Others	Rs			4000			5000
q.	Management Cost	Month	12	1500	18000	12	1500	18000
2	Fixed cost				2700			2700
a.	Land tax	Rs			400			400
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			750			750
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			125553.6			95473

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			10	20	28	38
2	Production (Kg/ha)			2600	5200	7280	9880
3	Total income (Rs)		96200	192400	269360	365560	
4	Variable cost	122853.60	92773.00	102050.30	112255.33	123480.86	135828.95
5	Fixed cost	2700	2700	2700	2700	2700	2700
6	Total cost	125553.60	95473.00	104750.30	114955.33	126180.86	138528.95
7	Profit/Loss	-125553.60	-95473.00	-104750.30	-18755.33	66219.14	130831.05
8	B/C ratio				1.52	1.94	2.40

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		42	46	48	50
2	Production (Kg/ha)		10920	11960	12480	130000
3	Total income (Rs)	404040	442520	461760	481000	365560
4	Variable cost	164353.03	180788.33	198867.16	198867.16	198867.16
5	Fixed cost	2700	2700	2700	2700	2700
6	Total cost	167053.03	183488.33	201567.16	201567.16	201567.16
7	Profit/Loss	236986.97	259031.67	260192.84	279432.84	163992.84
8	B/C ratio	2.42	2.41	2.29	2.39	1.81

Annex 12: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mandarine Orange
Variety : Pokhara Local

Year: 2016/2017

District : Dailekh
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				108660			82860
a.	Human labor	Day	58	340	19720	35	340	11900
b.	Bullock labor	Day	6	850	5100	2	850	1700
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	12	160	1920	16	160	2560
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	330	40	13200			0
h.	Manure	Kg	4500	1.4	6300	6000	1.4	8400
i.	Fertilizer							
	Urea	Kg	32	26	832			
	DAP	Kg	12	50	600			
	Potash	Kg	8	36	288			
j.	Plant protection chemical	Rs			3000	2	1550	3100
k.	Bordeaux mixture and micro nutrient	Lum			4000			5000
l.	Training and Pruning					5	1200	6000
m.	Equipments	Number	5	900	4500			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				14125.8			10771.8
p.	Others	Rs			5000			5000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2700			2700
a.	Land tax	Rs			400			400
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			900			900
3	Total cost	Rs			125485.8			96331.8

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			7		16	24	35
2	Production (Kg/ha)			1820	4160	6240	9100	
3	Total income (Rs)			63700	145600	218400	318500	
4	Variable cost	122785.80	93631.80	102994.98	113294.48	124623.93	137086.32	150794.95
5	Fixed cost	2700	2700	2700	2700	2700	2700	2700
6	Total cost	125485.80	96331.80	105694.98	115994.48	127323.93	139786.32	153494.95
7	Profit/Loss	-125485.80	-96331.80	-105694.98	-52294.48	18276.07	78613.68	165005.05
8	B/C ratio				1.14	1.56	2.07	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		38	44	52	48
2	Production (Kg/ha)		9880	11440	13520	12480
3	Total income (Rs)	345800	400400	473200	436800	349440
4	Variable cost	165874.45	182461.89	200708.08	200708.08	200708.08
5	Fixed cost	2700	2700	2700	2700	2700
6	Total cost	168574.45	185161.89	203408.08	203408.08	203408.08
7	Profit/Loss	177225.55	215238.11	269791.92	233391.92	146031.92
8	B/C ratio	2.05	2.16	2.33	2.15	1.72

Annex 13: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Sweet Orange
Variety : Local

Year: 2016/2017

District : Ramechhap
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				110804			83125
a.	Human labor	Day	58	350	20300	33	350	11550
b.	Bullock labor	Day	6	900	5400	2	900	1800
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	200	2000	15	180	2700
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1250	3750			
g.	Sapling	Number	330	42	13860			0
h.	Manure	Kg	4800	1.5	7200	6250	1.5	9375
i.	Fertilizer							
	Urea	Kg	25	26	650			
	DAP	Kg	30	50	1500			
	Potash	Kg	12	37	444			
j.	Plant protection chemical	Rs			4000	2	1600	3200
k.	Bordeaux mixture and micro nutrient	Lum			3500			4500
l.	Training and Pruning					4	1200	4800
m.	Equipments	Number	5	800	4000			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				12188.44			9143.75
p.	Others	Rs			5000			6000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				3000			3000
a.	Land tax	Rs			400			400
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			1200			1200
3	Total cost	Rs			125992.44			95268.75

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)				6	15	28	38
2	Production (Kg/ha)				1560	3900	7280	9880
3	Total income (Rs)			57720	144300	269360	365560	
4	Variable cost	122992.44	92268.75	101495.63	111645.19	122809.71	135090.68	148599.74
5	Fixed cost	3000	3000	3000	3000	3000	3000	3000
6	Total cost	125992.44	95268.75	104495.63	114645.19	125809.71	138090.68	151599.74
7	Profit/Loss	-125992.44	-95268.75	-104495.63	-56925.19	18490.29	131269.32	213960.26
8	B/C ratio					1.15	1.95	2.41

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		41	45	47	50
2	Production (Kg/ha)		10660	11700	12220	130000
3	Total income (Rs)	394420	432900	452140	481000	384800
4	Variable cost	163459.72	179805.69	197786.26	197786.26	197786.26
5	Fixed cost	3000	3000	3000	3000	3000
6	Total cost	166459.72	182805.69	200786.26	200786.26	200786.26
7	Profit/Loss	227960.28	250094.31	251353.74	280213.74	184013.74
8	B/C ratio	2.37	2.37	2.25	2.40	1.92

Annex 14: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Sweet Orange
Variety : Local

Year: 2016/2017

District : Sindhuli
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				109480			85050
a.	Human labor	Day	60	350	21000	35	350	12250
b.	Bullock labor	Day	5	900	4500	2	900	1800
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	225	2250	15	225	3375
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1200	3600			
g.	Sapling	Number	330	40	13200			0
h.	Manure	Kg	5000	1.4	7000	6350	1.5	9525
i.	Fertilizer							
	Urea	Kg	25	26	650			
	DAP	Kg	30	50	1500			
	Potash	Kg	8	35	280			
j.	Plant protection chemical	Rs			4000	3	1500	4500
k.	Bordeaux mixture and micro nutrient	Lum			4000			6000
l.	Training and Pruning					4	900	3600
m.	Equipments	Number	5	900	4500			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				12042.8			9355.5
p.	Others	Rs			5000			6000
q.	Management Cost	Month	12	1500	18000	12	1500	18000
2	Fixed cost				2800			2800
a.	Land tax	Rs			400			400
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			124322.8			97205.5

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)				8	18	27	36
2	Production (Kg/ha)				2080	4680	7020	9360
3	Total income (Rs)			83200	187200	280800	374400	
4	Variable cost	121522.80	94405.50	103846.05	114230.66	125653.72	138219.09	152041.00
5	Fixed cost	2800	2800	2800	2800	2800	2800	2800
6	Total cost	124322.80	97205.50	106646.05	117030.66	128453.72	141019.09	154841.00
7	Profit/Loss	-124322.80	-97205.50	-106646.05	-33830.66	58746.28	139780.91	219559.00
8	B/C ratio					1.46	1.99	2.42
9	Cost per Kg					27.45	20.09	16.54

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		42	44	46	48
2	Production (Kg/ha)	10920	11440	11960	12480	9984
3	Total income (Rs)	436800	457600	478400	499200	399360
4	Variable cost	167245.10	183969.61	202366.57	202366.57	202366.57
5	Fixed cost	2800	2800	2800	2800	2800
6	Total cost	170045.10	186769.61	205166.57	205166.57	205166.57
7	Profit/Loss	266754.90	270830.39	273233.43	294033.43	194193.43
8	B/C ratio	2.57	2.45	2.33	2.43	1.95
9	Cost per Kg	15.57	16.33	17.15	16.44	20.55

Annex 15: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Sweet Orange
Variety : Local

Year: 2016/2017

District : Palpa
Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				112320			85675
a.	Human labor	Day	55	350	19250	35	350	12250
b.	Bullock labor	Day	6	900	5400	1	900	900
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	8	225	1800	15	225	3375
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	45	14850			0
h.	Manure	Kg	4800	1.6	7680	6000	1.6	9600
i.	Fertilizer							
	Urea	Kg	30	26	780			
	DAP	Kg	22	50	1100			
	Potash	Kg	10	36	360			
j.	Plant protection chemical	Rs			3500	2	1800	3600
k.	Bordeaux mixture and micro nutrient	Lum			5000			6000
l.	Training and Pruning					5	950	4750
m.	Equipments	Number	4	900	3600			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				12355.2			9424.25
p.	Others	Rs			5000			6000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				3200			3200
a.	Land tax	Rs			450			450
b.	Water tax	Rs			750			750
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			1200			1200
3	Total cost	Rs			127875.2			98299.25

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			9	17	28	32
2	Production (Kg/ha)			2340	4420	7280	8320
3	Total income (Rs)		93600	176800	291200	332800	
4	Variable cost	124675.20	95099.25	104609.18	115070.09	126577.10	139234.81
5	Fixed cost	3200	3200	3200	3200	3200	3200
6	Total cost	127875.20	98299.25	107809.18	118270.09	129777.10	142434.81
7	Profit/Loss	-127875.20	-98299.25	-107809.18	-24670.09	47022.90	148765.19
8	B/C ratio				1.36	2.04	2.13

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		35	42	45	46
2	Production (Kg/ha)		9100	10920	11700	11960
3	Total income (Rs)	364000	436800	468000	478400	374400
4	Variable cost	168474.12	185321.53	203853.69	203853.69	203853.69
5	Fixed cost	3200	3200	3200	3200	3200
6	Total cost	171674.12	188521.53	207053.69	207053.69	207053.69
7	Profit/Loss	1922325.88	248278.47	260946.31	271346.31	167346.31
8	B/C ratio	2.12	2.32	2.26	2.31	1.81

Annex 16: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Apple

Year: 2016/2017

District : Manang

Variety : Golden Delicious

Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				128975			94860
a.	Human labor	Day	72	300	21600	45	300	13500
b.	Bullock labor	Day	6	750	4500	2	750	1500
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	180	1800	12	180	2160
e.	Fencing	Lum	0	0	10000			
f.	Layout	Day	4	1300	5200			
g.	Sapling	Number	330	45	14850			0
h.	Manure	Kg	4500	2.25	10125	6000	2.25	13500
i.	Fertilizer							
	Urea	Kg						
	DAP	Kg						
	Potash	Kg						
j.	Plant protection chemical	Rs			4000	2	1650	3300
k.	Bordeaux mixture and micro nutrient	Lum			4500			5000
l.	Training and Pruning					5	1600	8000
m.	Equipments	Number	5	1200	6000			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				15477			11383.2
p.	Others	Rs			6000			7500
q.	Management Cost	Month	12	1700	20400	12	1700	20400
2	Fixed cost				2700			2700
a.	Land tax	Rs			450			450
b.	Water tax	Rs			500			500
c.	Depreciation cost of farm equipments	Rs			750			750
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			147152			108943.2

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			7		16	22	36
2	Production (Kg/ha)			1680	3840	5280		8640
3	Total income (Rs)		67200	153600	211200	345600		
4	Variable cost	144452	106243.20	116867.52	128554.27	141409.70	155550.67	171105.74
5	Fixed cost	2700	2700	2700	2700	2700	2700	2700
6	Total cost	147152	108943.20	119567.52	131254.27	144109.70	158250.67	173805.74
7	Profit/Loss	-147152	-108943.20	-119567.52	-64054.27	9490.30	52949.33	171794.26
8	B/C ratio				1.07	1.33	1.99	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		40	43	45	50
2	Production (Kg/ha)		9600	10320	10800	12000
3	Total income (Rs)	384000	412800	432000	480000	336000
4	Variable cost	188216.31	207037.94	227741.73	250515.91	275567.50
5	Fixed cost	2700	2700	2700	2700	2700
6	Total cost	190916.31	209737.94	230441.73	253215.91	278267.50
7	Profit/Loss	193083.69	203062.06	201558.27	226784.09	57732.50
8	B/C ratio	2.01	1.97	1.87	1.90	1.21

Annex 17: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Apple

Year: 2016/2017

District : Mustang

Variety : Golden Delicious

Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				129610			101575
a.	Human labor	Day	80	300	24000	45	300	13500
b.	Bullock labor	Day	6	800	4800	2	800	1600
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	225	2250	15	225	3375
e.	Fencing	Lum	0	0	10000			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	42	13860			0
h.	Manure	Kg	4000	2.2	8800	6500	2.2	14300
i.	Fertilizer							
	Urea	Kg						
	DAP	Kg						
	Potash	Kg						
j.	Plant protection chemical	Rs			3000	2	1600	3200
k.	Bordeaux mixture and micro nutrient	Lum			4500			5000
l.	Training and Pruning					5	1600	8000
m.	Equipments	Number	5	1000	5000			
n.	Land lease value	Rs/Year			22000			25000
o.	Interest on variable cost				16849.3			13204.75
p.	Others	Rs			5000			6000
q.	Management Cost	Month	12	1800	21600	12	1800	21600
2	Fixed cost				3100			3100
a.	Land tax	Rs			400			400
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			900			900
d.	Repair and maintenance of farm equipments	Rs			1200			1200
3	Total cost	Rs			149559.3			117879.75

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			8	15	28		36
2	Production (Kg/ha)			1920	3600	6720		8640
3	Total income (Rs)		92160	172800	322560	414720		
4	Variable cost	146459.30	114779.75	126257.73	138883.50	152771.85	168049.03	184853.94
5	Fixed cost	3100	3100	3100	3100	3100	3100	3100
6	Total cost	149559.30	117879.75	129357.73	141983.50	155871.85	171149.03	187953.94
7	Profit/Loss	-149559.30	-117879.75	-129357.73	-49823.50	16928.15	151410.97	226766.06
8	B/C ratio					1.11	1.88	2.21
9	Cost per Kg				43.30	25.47	21.75	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		40	45	45	48
2	Production (Kg/ha)	9600	10800	10800	11520	8880
3	Total income (Rs)	460800	518400	552960	426240	
4	Variable cost	203339.33	223673.26	246040.59	270644.65	297709.11
5	Fixed cost	3100	3100	3100	3100	3100
6	Total cost	206439.33	226773.26	249140.59	273744.65	300809.11
7	Profit/Loss	254360.67	291626.74	269259.41	279215.35	125430.89
8	B/C ratio		2.23	2.29	2.08	1.42
9	Cost per Kg		21.50	21.00	23.07	33.87

Annex 18: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Apple

Year: 2016/2017

District : Jumla

Variety : Red Delicious

Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				128660			95400
a.	Human labor	Day	72	300	21600	40	300	12000
b.	Bullock labor	Day	6	700	4200	2	700	1400
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	200	2000	15	200	3000
e.	Fencing	Lum	0	0	10000			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	330	42	13860			0
h.	Manure	Kg	4500	2.5	11250	5800	2.5	14500
i.	Fertilizer							
	Urea	Kg						
	DAP	Kg						
	Potash	Kg						
j.	Plant protection chemical	Rs			4000	3	1500	4500
k.	Bordeaux mixture and micro nutrient	Lum			4500			5500
l.	Training and Pruning					5	1500	7500
m.	Equipments	Number	5	1250	6250			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				15439.2			11448
p.	Others	Rs			5000			6000
q.	Management Cost	Month	12	1750	21000	12	1750	21000
2	Fixed cost				2850			2850
a.	Land tax	Rs			400			400
b.	Water tax	Rs			650			650
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			146949.2			109698

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			8	18	24		37
2	Production (Kg/ha)			1920	4320	5760		8880
3	Total income (Rs)		72960	164160	218880	337440		
4	Variable cost	144,099.20	106,848.00	117,532.80	129,286.08	142,214.69	156,436.16	172,079.77
5	Fixed cost	2850	2850	2850	2850	2850	2850	2850
6	Total cost	146949.20	109698.00	120382.80	132136.08	145064.69	159286.16	174929.77
7	Profit/Loss	-146949.20	-109698.00	-120382.80	-59176.08	19095.31	59593.84	162510.23
8	B/C ratio				1.13	1.37	1.93	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		40	44	46	48
2	Production (Kg/ha)		9600	10560	11040	11520
3	Total income (Rs)	364800	401280	419520	437760	310080
4	Variable cost	189287.75	208216.52	229038.18	251941.99	277136.19
5	Fixed cost	2850	2850	2850	2850	2850
6	Total cost	192137.75	211066.52	231888.18	254791.99	279986.19
7	Profit/Loss	172662.25	190213.48	187631.82	182968.01	300933.81
8	B/C ratio	1.90	1.90	1.81	1.72	1.11

Annex 19: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Apple

Year: 2016/2017

District : Dolpa

Variety : Golden Delicious

Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				131200			97650
a.	Human labor	Day	70	300	21000	40	300	12000
b.	Bullock labor	Day	6	700	4200	2	700	1400
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	210	2100	15	220	3300
e.	Fencing	Lum	0	0	10000			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	50	16500			0
h.	Manure	Kg	4600	2.5	11500	6300	2.5	15750
i.	Fertilizer							
	Urea	Kg						
	DAP	Kg						
	Potash	Kg						
j.	Plant protection chemical	Rs			4000	2	1800	3600
k.	Bordeaux mixture and micro nutrient	Lum			4500			5000
l.	Training and Pruning					5	1500	7500
m.	Equipments	Number	5	1000	5000			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				15744			11718
p.	Others	Rs			6000			7500
q.	Management Cost	Month	12	1800	21600	12	1800	21600
2	Fixed cost				2850			2850
a.	Land tax	Rs			450			450
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			149794			112218

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			8	14	20	27
2	Production (Kg/ha)			1920	3360	4800	6480
3	Total income (Rs)		67200	117600	168000	226800	
4	Variable cost	146944	109368	120304.80	132335.28	145568.81	160125.69
5	Fixed cost	2850	2850	2850	2850	2850	2850
6	Total cost	149794	112218	123154.80	135185.28	148418.81	162975.69
7	Profit/Loss	-149794	-112218	-123154.80	-67985.28	-30818.81	47811.74
8	B/C ratio					1.03	1.27

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)	32	36	42	45	36
2	Production (Kg/ha)	7680	8640	10080	10800	8640
3	Total income (Rs)	268800	302400	352800	378000	302400
4	Variable cost	193752.08	213127.29	234440.02	257884.02	283672.43
5	Fixed cost	2850	2850	2850	2850	2850
6	Total cost	196602.08	215977.29	237290.02	260734.02	286522.43
7	Profit/Loss	72197.92	86422.71	115509.98	117265.98	15877.57
8	B/C ratio	1.37	1.40	1.49	1.45	1.06

Annex 20: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mango
Variety : Dashahari

Year: 2016/2017

District : Morang
Propagation: Layering

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				113753			85725
a.	Human labor	Day	50	350	17500	30	350	10500
b.	Bullock labor	Day	6	900	5400	1	900	900
c.	Tractor	hour	3	1600	4800	2	1600	3200
d.	Pump set, water pond	hour	15	150	2250	20	150	3000
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	5	1275	6375			
g.	Sapling	Number	110	50	5500			0
h.	Manure	Kg	3600	1.25	4500	2500	1.25	3125
i.	Fertilizer							
	Urea	Kg	18	26	468			
	DAP	Kg	25	50	1250			
	Potash	Kg	10	36	360			
j.	Plant protection chemical	Rs			4000	2	3500	7000
k.	Bordeaux mixture and micro nutrient	Lum			4000			3500
l.	Training and Pruning					2	1250	2500
m.	Equipments	Number	5	1150	5750			
n.	Land lease value	Rs/Year			27500			25000
o.	Interest on variable cost				14787.89			10287
p.	Others	Rs			2500			3000
q.	Management Cost	Month	12	1800	21600	12	2000	24000
2	Fixed cost				3250			3250
a.	Land tax	Rs			500			500
b.	Water tax	Rs			500			500
c.	Depreciation cost of farm equipments	Rs			750			750
d.	Repair and maintenance of farm equipments	Rs			1500			1500
3	Total cost	Rs			131790.89			99262

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			18		36	55	70
2	Production (Kg/ha)			1530	3060	4675	5950	5950
3	Total income (Rs)			64260	128520	196350	249900	
4	Variable cost	128540.89	96012.00	105613.20	116174.52	127791.97	140571.17	154628.29
5	Fixed cost	3250	3250	3250	3250	3250	3250	3250
6	Total cost	131790.89	99262.00	108863.20	119424.52	131041.97	143821.17	157878.29
7	Profit/Loss	-131790.89	-99262.00	-108863.20	-55164.52	-2521.97	52528.83	92021.71
8	B/C ratio					0.98	1.37	1.58
9	Cost per Kg					42.82	30.76	26.53

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		80	90	110	120
2	Production (Kg/ha)	6800	7650	9350	10200	8160
3	Total income (Rs)	285600	321300	392700	428400	342720
4	Variable cost	170091.11	187100.23	205810.25	226391.27	249030.40
5	Fixed cost	3250	3250	3250	3250	3250
6	Total cost	173341.11	190350.23	209060.25	229641.27	252280.40
7	Profit/Loss	112258.89	130949.77	183639.75	198758.73	90439.60
8	B/C ratio	1.65	1.69	1.88	1.87	1.36
9	Cost per Kg	25.49	24.88	22.36	22.51	30.92

Annex 21: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mango
Variety : Maldaha

Year: 2016/2017

District : Sunsari
Propagation: Layering

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				108027			83500
a.	Human labor	Day	52	360	18720	32	360	11520
b.	Bullock labor	Day	2	950	1900	1	950	950
c.	Tractor	hour	4	1600	6400	2	1600	3200
d.	Pump set, water pond	hour	15	135	2025	20	135	2700
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	110	60	6600			0
h.	Manure	Kg	3500	1.3	4550	3200	1.3	4160
i.	Fertilizer							
	Urea	Kg	30	26	780	35	26	910
	DAP	Kg	18	50	900	22	50	1100
	Potash	Kg	7	36	252	10	36	360
j.	Plant protection chemical	Rs			3500	4	1300	5200
k.	Bordeaux mixture and micro nutrient	Lum			3500			3200
l.	Training and Pruning					2	1250	2500
m.	Equipments	Number	4	1000	4000			
n.	Land lease value	Rs/Year			27500			25000
o.	Interest on variable cost				14043.51			10855
p.	Others	Rs			3200			3500
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2125			2125
a.	Land tax	Rs			300			300
b.	Water tax	Rs			525			525
c.	Depreciation cost of farm equipments	Rs			550			550
d.	Repair and maintenance of farm equipments	Rs			750			750
3	Total cost	Rs			124195.51			96480

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			25	45	60	80
2	Production (Kg/ha)			2125	3825	5100	6800
3	Total income (Rs)		82875	149175	198900	265200	
4	Variable cost	122070.51	94355.00	103790.50	114169.55	125586.51	138145.16
5	Fixed cost	2125	2125	2125	2125	2125	2125
6	Total cost	124195.51	96480.00	105915.50	116294.55	127711.51	140270.16
7	Profit/Loss	-124195.51	-96480.00	-105915.50	-33419.55	21463.50	58629.84
8	B/C ratio				1.17	1.42	1.72

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		95	115	120	130
2	Production (Kg/ha)		8075	9775	10200	11050
3	Total income (Rs)	314925	381225	397800	430950	344760
4	Variable cost	167155.64	183871.20	202258.32	222484.15	244732.57
5	Fixed cost	2125	2125	2125	2125	2125
6	Total cost	169280.64	185996.20	204383.32	224609.15	246857.57
7	Profit/Loss	145644.36	195228.80	193416.68	206340.85	97902.43
8	B/C ratio	1.86	2.05	1.95	1.92	1.40

Annex 22: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mango

Year: 2016/2017

District : Saptari

Variety : Maldaha

Propagation: Layering

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				103230			82210
a.	Human labor	Day	60	350	21000	35	350	12250
b.	Bullock labor	Day	1	850	850	1	850	850
c.	Tractor	hour	3	1600	4800	1	1600	1600
d.	Pump set, water pond	hour	15	140	2100	20	140	2800
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	110	42	4620			0
h.	Manure	Kg	3000	1.3	3900	3000	1.3	3900
i.	Fertilizer							
	Urea	Kg	25	26	650	25	26	650
	DAP	Kg	15	50	750	20	50	1000
	Potash	Kg	10	36	360	10	36	360
j.	Plant protection chemical	Rs			3000	3	1600	4800
k.	Bordeaux mixture and micro nutrient	Lum			3000			3000
l.	Training and Pruning					3	1200	3600
m.	Equipments	Number	4	1250	5000			
n.	Land lease value	Rs/Year			26000			25000
o.	Interest on variable cost				13419.9			10687.3
p.	Others	Rs			3000			3200
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2800			2800
a.	Land tax	Rs			450			450
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			600			600
d.	Repair and maintenance of farm equipments	Rs			1200			1200
3	Total cost	Rs			119449.9			95697.3

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			25		42	60	82
2	Production (Kg/ha)			2125	3570	5100	6970	
3	Total income (Rs)			80750	135660	193800	264860	
4	Variable cost	116649.90	92897.30	102187.03	112405.73	123646.31	136010.94	149612.03
5	Fixed cost	2800	2800	2800	2800	2800	2800	2800
6	Total cost	119449.90	95697.30	104987.03	115205.73	126446.31	138810.94	152412.03
7	Profit/Loss	-119449.90	-95697.30	-104987.03	-34455.73	9213.69	54989.06	112447.97
8	B/C ratio				1.07	1.40	1.74	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		95	108	116	120
2	Production (Kg/ha)		8075	9180	9860	10200
3	Total income (Rs)	306850	348840	374680	387600	310080
4	Variable cost	164573.23	181030.56	199133.61	219046.97	240951.67
5	Fixed cost	2800	2800	2800	2800	2800
6	Total cost	167373.23	183830.56	201933.61	221846.97	243751.67
7	Profit/Loss	139476.77	165009.44	172746.39	165753.03	66328.33
8	B/C ratio	1.83	1.90	1.86	1.75	1.27

Annex 23: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mango
Variety : Local

Year: 2016/2017

District : Dhading
Propagation: Layering/ Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				100218			83492
a.	Human labor	Day	55	350	19250	32	350	11200
b.	Bullock labor	Day	1	900	900	1	900	900
c.	Tractor-power tiller	hour	5	500	2500	3	500	1500
d.	Pump set, water pond	hour	12	150	1800	18	150	2700
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1250	3750			
g.	Sapling	Number	110	50	5500			0
h.	Manure	Kg	3500	2	7000	3000	2	6000
i.	Fertilizer							
	Urea	Kg	30	26	780	32	26	832
	DAP	Kg	15	50	750	18	50	900
	Potash	Kg	8	36	288	10	36	360
j.	Plant protection chemical	Rs			2500	3	1500	4500
k.	Bordeaux mixture and micro nutrient	Lum			3000			4500
l.	Training and Pruning					2	1200	2400
m.	Equipments	Number	4	1250	5000			
n.	Land lease value	Rs/Year			25000			25000
o.	Interest on variable cost				12026.16			10019.04
p.	Others	Rs			3000			3500
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2675			2675
a.	Land tax	Rs			450			450
b.	Water tax	Rs			525			525
c.	Depreciation cost of farm equipments	Rs			650			650
d.	Repair and maintenance of farm equipments	Rs			1050			1050
3	Total cost	Rs			114919.16			96186.04

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			25		50	75	100
2	Production (Kg/ha)			2125	4250	6375	8500	
3	Total income (Rs)			89250	178500	267750	357000	
4	Variable cost	112244.16	93511.04	102862.14	113148.36	124463.19	136909.51	150600.47
5	Fixed cost	2675	2675	2675	2675	2675	2675	2675
6	Total cost	114919.16	96186.04	105537.14	115823.36	127138.19	139584.51	153275.47
7	Profit/Loss	-114919.16	-96186.04	-105537.14	-26573.36	51361.81	128165.49	203724.53
8	B/C ratio				1.40	1.92	2.33	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		120	130	135	135
2	Production (Kg/ha)		10200	11050	11475	11475
3	Total income (Rs)	428400	464100	481950	481950	392700
4	Variable cost	165660.51	182226.56	200449.22	220494.14	242543.55
5	Fixed cost	2675	2675	2675	2675	2675
6	Total cost	168335.51	184901.56	203124.22	223169.14	245218.55
7	Profit/Loss	260064.49	279198.44	278825.78	258780.86	147481.45
8	B/C ratio	2.54	2.51	2.37	2.16	1.60

Annex 24: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mango
Variety : Local

Year: 2016/2017

District : Rautahat
Propagation: Layering

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				101911			82920
a.	Human labor	Day	60	350	21000	32	350	11200
b.	Bullock labor	Day	1	900	900	2	900	1800
c.	Tractor	hour	2	1600	3200	1	1600	1600
d.	Pump set, water pond	hour	15	145	2175	20	145	2900
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	110	35	3850			0
h.	Manure	Kg	3500	1.2	4200	3000	1.2	3600
i.	Fertilizer							
	Urea	Kg	20	26	520	32	26	832
	DAP	Kg	25	50	1250	22	50	1100
	Potash	Kg	6	36	216	8	36	288
j.	Plant protection chemical	Rs			3500	4	1200	4800
k.	Bordeaux mixture and micro nutrient	Lum			3000			4000
l.	Training and Pruning					2	1300	2600
m.	Equipments	Number	4	1275	5100			
n.	Land lease value	Rs/Year			25000			25000
o.	Interest on variable cost				13248.43			10779.6
p.	Others	Rs			4000			4000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2675			2675
a.	Land tax	Rs			400			400
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			525			525
d.	Repair and maintenance of farm equipments	Rs			1200			1200
3	Total cost	Rs			117834.43			96374.6

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			17	38	60	75	
2	Production (Kg/ha)			1445	3230	5100	6375	
3	Total income (Rs)			59245	132430	209100	261375	
4	Variable cost	115159.43	93699.60	103069.56	113376.52	124714.17	137185.58	150904.14
5	Fixed cost	2675	2675	2675	2675	2675	2675	2675
6	Total cost	117834.43	96374.60	105744.56	116051.52	127389.17	139860.58	153579.14
7	Profit/Loss	-117834.43	-96374.60	-105744.56	-56806.52	5040.83	69239.42	107795.86
8	B/C ratio				1.04	1.50	1.70	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		100	105	115	125
2	Production (Kg/ha)		8500	8925	9775	10625
3	Total income (Rs)	348500	365925	400775	435625	383350
4	Variable cost	16594.56	182594.01	200853.41	220938.76	243032.63
5	Fixed cost	2675	2675	2675	2675	2675
6	Total cost	168669.56	185269.01	203528.41	223613.76	245707.63
7	Profit/Loss	179830.44	180655.99	197246.59	212011.24	137642.37
8	B/C ratio	2.07	1.98	1.97	1.95	1.56

Annex 25: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mango

Year: 2016/2017

District : Parsa

Variety : Maldaha

Propagation: Layering

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				100530			80940
a.	Human labor	Day	55	350	19250	32	350	11200
b.	Bullock labor	Day	1	900	900	1	900	900
c.	Tractor	hour	4	1550	6200	1	1550	1550
d.	Pump set, water pond	hour	15	150	2250	20	150	3000
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1250	3750			
g.	Sapling	Number	110	42	4620			0
h.	Manure	Kg	3000	1.2	3600	3000	1.2	3600
i.	Fertilizer							
	Urea	Kg	25	26	650	30	26	780
	DAP	Kg	15	50	750	25	50	1250
	Potash	Kg	10	36	360	10	36	360
j.	Plant protection chemical	Rs			3200	3	1400	4200
k.	Bordeaux mixture and micro nutrient	Lum			3000			4000
l.	Training and Pruning					2	1200	2400
m.	Equipments	Number	4	1200	4800			
n.	Land lease value	Rs/Year			25000			25000
o.	Interest on variable cost				12063.6			9712.8
p.	Others	Rs			3000			3500
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2650			2650
a.	Land tax	Rs			450			450
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			600			600
d.	Repair and maintenance of farm equipments	Rs			1050			1050
3	Total cost	Rs			115243.6			93302.8

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			24	44	65	85	
2	Production (Kg/ha)			2040	3740	5525	7225	
3	Total income (Rs)			77520	142120	209950	274550	
4	Variable cost	112593.60	90652.80	99718.08	109689.89	120658.88	132724.76	145997.24
5	Fixed cost	2650	2650	2650	2650	2650	2650	2650
6	Total cost	115243.60	93302.80	102368.08	112339.89	123308.88	135374.76	148647.24
7	Profit/Loss	-115243.60	-93302.80	-102368.08	-34819.89	18811.12	74575.24	125902.76
8	B/C ratio				1.15	1.55	1.85	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)	104	116	126	127	101.6
2	Production (Kg/ha)	8840	9860	10710	10795	8636
3	Total income (Rs)	335920	374680	406980	410210	328168
4	Variable cost	160596.97	176656.66	194322.33	213754.56	235130.02
5	Fixed cost	2650	2650	2650	2650	2650
6	Total cost	163246.97	179306.66	196972.33	216404.56	237780.02
7	Profit/Loss	172673.03	195373.34	210007.67	193805.44	90387.98
8	B/C ratio	2.06	2.09	2.07	1.90	1.38

Annex 26: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mango
Variety : Local

Year: 2016/2017

District : Nawalparasi
Propagation: Layering

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				103890			80956
a.	Human labor	Day	56	350	19600	32	350	11200
b.	Bullock labor	Day	1	850	850	1	850	850
c.	Tractor	hour	3	1550	4650	1	1550	1550
d.	Pump set, water pond	hour	15	150	2250	15	150	2250
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	110	40	4400			0
h.	Manure	Kg	3500	1.5	5250	2800	1.5	4200
i.	Fertilizer							
	Urea	Kg	30	26	780	35	26	910
	DAP	Kg	20	50	1000	32	50	1600
	Potash	Kg	10	36	360	11	36	396
j.	Plant protection chemical	Rs			2500	3	1500	3000
k.	Bordeaux mixture and micro nutrient	Lum			2750			3000
l.	Training and Pruning					2	1250	2500
m.	Equipments	Number	4	1250	5000			
n.	Land lease value	Rs/Year			28000			28000
o.	Interest on variable cost				12466.8			9714.72
p.	Others	Rs			3500			3500
q.	Management Cost	Month	12	1500	18000	12	1500	18000
2	Fixed cost				2800			2800
a.	Land tax	Rs			450			450
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			550			550
d.	Repair and maintenance of farm equipments	Rs			1250			1250
3	Total cost	Rs			119156.8			93470.72

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)				18	40	66	85
2	Production (Kg/ha)			1530	3400	5610	7225	
3	Total income (Rs)			56610	125800	207570	267325	
4	Variable cost	116356.80	90670.72	99737.79	109711.57	120682.73	132751.00	146026.10
5	Fixed cost	2800	2800	2800	2800	2800	2800	2800
6	Total cost	119156.80	93470.72	102537.79	112511.57	123482.73	135551.00	148826.10
7	Profit/Loss	-119156.80	-93470.72	-102537.79	-553901.57	2317.27	72019.00	118498.90
8	B/C ratio					1.02	1.53	1.80

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		98	112	115	120
2	Production (Kg/ha)	8330	9520	9775	10200	8160
3	Total income (Rs)	308210	352240	361675	377400	301920
4	Variable cost	160628.71	176691.58	194360.74	213796.81	235176.50
5	Fixed cost	2800	2800	2800	2800	2800
6	Total cost	163428.71	179491.58	197160.74	216596.81	237976.50
7	Profit/Loss	144781.29	172748.42	164514.26	160803.19	63943.50
8	B/C ratio	1.89	1.96	1.83	1.74	1.27

Annex 27: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mango

Year: 2016/2017

District : Banke

Variety : Dashahari

Propagation: Layering

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				96475			76765
a.	Human labor	Day	55	350	19250	30	350	10500
b.	Bullock labor	Day	0	0	0	0	0	0
c.	Tractor	hour	3	1500	4500	1	1500	1500
d.	Pump set, water pond	hour	15	150	2250	20	150	3000
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1600	4800			
g.	Sapling	Number	110	42	4620			0
h.	Manure	Kg	3200	1.35	4320	2800	1.35	3780
i.	Fertilizer							
	Urea	Kg	25	25	625	25	25	625
	DAP	Kg	15	50	750	20	50	1000
	Potash	Kg	10	36	360	10	36	360
j.	Plant protection chemical	Rs			2500	3	1500	4500
k.	Bordeaux mixture and micro nutrient	Lum			2800			3000
l.	Training and Pruning					2	1250	2500
m.	Equipments	Number	4	1000	4000			
n.	Land lease value	Rs/Year			25000			25000
o.	Interest on variable cost				11577			9211.8
p.	Others	Rs			2700			3000
q.	Management Cost	Month	12	1500	18000	12	1500	18000
2	Fixed cost				2400			2450
a.	Land tax	Rs			450			450
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			500			500
d.	Repair and maintenance of farm equipments	Rs			900			950
3	Total cost	Rs			110452			88426.8

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			20		45	68	95
2	Production (Kg/ha)			1700	3825	5780	8075	
3	Total income (Rs)			62900	141525	213860	298775	
4	Variable cost	108052.00	85976.80	94574.48	104031.93	114435.12	125878.63	138466.50
5	Fixed cost	2400	2450	2450	2450	2450	2450	2450
6	Total cost	110452.00	88426.80	97024.48	106481.93	116885.12	128328.63	140916.50
7	Profit/Loss	-110452.00	-88426.80	-97024.48	-43581.93	24639.88	85531.37	157858.50
8	B/C ratio					1.21	1.67	2.12

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		112	119	123	125
2	Production (Kg/ha)		9520	10115	10455	10625
3	Total income (Rs)	352240	374255	386835	393125	314500
4	Variable cost	152313.15	167544.46	184298.91	202728.80	223001.68
5	Fixed cost	2450	2450	2450	2450	2450
6	Total cost	154763.15	169994.46	186748.91	205178.80	225451.68
7	Profit/Loss	197476.85	204260.54	200086.09	187946.20	89048.32
8	B/C ratio	2.28	2.20	2.07	1.92	1.39

Annex 28: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mango
Variety : Dashahari

Year: 2016/2017

District : Bardia
Propagation: Layering

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				103807			82825
a.	Human labor	Day	58	350	20300	38	350	13300
b.	Bullock labor	Day	1	900	900	1	900	900
c.	Tractor	hour	2	1500	3000	1	1500	1500
d.	Pump set, water pond	hour	14	130	1820	15	130	1950
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	110	50	5500			0
h.	Manure	Kg	3200	1.3	4160	2750	1.3	3575
i.	Fertilizer							
	Urea	Kg	22	26	572			
	DAP	Kg	19	50	950			
	Potash	Kg	5	36	180			
j.	Plant protection chemical	Rs			3000	4	1200	4800
k.	Bordeaux mixture and micro nutrient	Lum			3200			3600
l.	Training and Pruning					2	800	1600
m.	Equipments	Number	5	1275	6375			
n.	Land lease value	Rs/Year			27500			30000
o.	Interest on variable cost				13494.91			10767.25
p.	Others	Rs			2750			3000
q.	Management Cost	Month	12	1550	18600	12	1550	18600
2	Fixed cost				2800			2650
a.	Land tax	Rs			450			450
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			600			600
d.	Repair and maintenance of farm equipments	Rs			1200			1050
3	Total cost	Rs			120101.91			96242.25

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			22	48	60	78	
2	Production (Kg/ha)			1870	4080	5100	6630	
3	Total income (Rs)		67320	146880	183600	238680		
4	Variable cost	117301.91	93592.25	102951.48	113246.62	124571.28	137028.41	150731.25
5	Fixed cost	2800	2650	2650	2650	2650	2650	2650
6	Total cost	120101.91	96242.25	105601.48	115896.62	127221.28	139678.41	153381.25
7	Profit/Loss	-120101.91	-96242.25	-105601.48	-48576.62	19658.72	43921.59	85298.75
8	B/C ratio				1.15	1.31	1.56	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		92	105	115	120
2	Production (Kg/ha)		7820	8925	9775	10200
3	Total income (Rs)	281520	321300	351900	367200	293760
4	Variable cost	165804.38	182384.82	200623.30	220685.63	242754.19
5	Fixed cost	2650	2650	2650	2650	2650
6	Total cost	168454.38	185034.82	203273.30	223335.63	245404.19
7	Profit/Loss	113065.62	136265.18	148626.70	143864.37	48355.81
8	B/C ratio	1.67	1.74	1.73	1.64	1.20

Annex 29: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Mango
Variety : Local

Year: 2016/2017

District : Kailali
Propagation: Layering/Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				98690			82734
a.	Human labor	Day	48	360	17280	33	360	11880
b.	Bullock labor	Day	1	800	800	1	800	800
c.	Tractor	hour	3	1550	4650	1	1550	1550
d.	Pump set, water pond	hour	15	160	2400	17	160	2720
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1300	3900			
g.	Sapling	Number	110	45	4950			0
h.	Manure	Kg	3000	1.2	3600	2800	1.2	3360
i.	Fertilizer							
	Urea	Kg	22	26	572	25	26	650
	DAP	Kg	16	50	800	22	50	1100
	Potash	Kg	8	36	288	9	36	324
j.	Plant protection chemical	Rs			2750	4	1250	5000
k.	Bordeaux mixture and micro nutrient	Lum			2800			3200
l.	Training and Pruning					2	1225	2450
m.	Equipments	Number	5	1100	5500			
n.	Land lease value	Rs/Year			26000			27000
o.	Interest on variable cost				11842.8			9928.08
p.	Others	Rs			3200			3500
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2850			2850
a.	Land tax	Rs			450			450
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			550			550
d.	Repair and maintenance of farm equipments	Rs			1250			1250
3	Total cost	Rs			113382.8			95512.08

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			25		50	65	85
2	Production (Kg/ha)			2125	4250	5525	7225	
3	Total income (Rs)		82875	165750	215475	281775		
4	Variable cost	110532.80	92662.08	101928.29	112121.12	123333.23	135666.55	149233.21
5	Fixed cost	2850	2850	2850	2850	2850	2850	2850
6	Total cost	113382.80	95512.08	104778.29	114971.12	126183.23	138516.55	152083.21
7	Profit/Loss	-113382.80	-95512.08	-104778.29	-32096.12	39566.77	76958.45	129691.79
8	B/C ratio					1.56	1.85	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		100	115	120	130
2	Production (Kg/ha)		8500	9775	10200	11050
3	Total income (Rs)	331500	381225	397800	430950	331500
4	Variable cost	164156.53	180572.18	198629.40	218492.34	240341.57
5	Fixed cost	2850	2850	2850	2850	2850
6	Total cost	167006.53	183422.18	201479.40	221342.34	243191.57
7	Profit/Loss	164493.47	197802.82	196320.60	209607.66	88308.43
8	B/C ratio	1.98	2.08	1.97	1.95	1.36

Annex 30: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Litchi

Year: 2016/2017

District : Udayapur

Variety : Local

Propagation : Air layering/Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				137632			120040
a.	Human labor	Day	44	350	15400	30	350	10500
b.	Bullock labor	Day	4	800	3200	1	800	800
c.	Tractor	hour	0	0	0	0	0	0
d.	Pump set, water pond	hour	15	200	3000	15	200	3000
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	165	32	5280			0
h.	Manure	Kg	6500	1.8	11700	6500	1.8	11700
i.	Fertilizer							
	Urea	Kg	30	25	750	30	25	750
	DAP	Kg	15	50	750	25	50	1250
	Potash	Kg	7	36	252	15	36	540
j.	Plant protection chemical	Rs			2500	4	1500	3000
k.	Bordeaux mixture and micro nutrient	Lum						3500
l.	Training and Pruning					2	1000	2000
m.	Equipments	Number	5	1000	5000			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				16515.84			14404.8
p.	Others	Rs			5000			3000
q.	Management Cost	Month	12	5000	60000	12	5000	60000
2	Fixed cost				2375			2375
a.	Land tax	Rs			550			550
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			525			525
d.	Repair and maintenance of farm equipments	Rs			750			750
3	Total cost	Rs			156522.84			136819.8

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 25%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			12	25	48	70
2	Production (Kg/Ha)			1608	3350	6432	9380
3	Total income (Rs)			64320	134000	257280	375200
4	Variable cost	154147.84	134444.80	147889.28	162678.21	178946.03	216524.69
5	Fixed cost	2375	2375	2375	2375	2375	2375
6	Total cost	156522.84	136819.80	150264.28	165053.21	181321.03	199215.63
7	Profit/Loss	-156522.84	-136819.80	-150264.28	-100733.21	-47321.03	58064.37
8	B/C ratio				0.74	1.29	1.71

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		80	85	90	92
2	Production Kg/Ha	10720	11390	12060	12328	9648
3	Total income (Rs)	428800	455600	482400	493120	385920
4	Variable cost	238177.16	261994.88	288194.37	317013.81	348715.19
5	Fixed cost	2375	2375	2375	2375	2375
6	Total cost	240552.16	264369.88	290569.37	319388.81	351090.19
7	Profit/Loss	188247.84	191230.12	191830.63	173731.19	34829.81
8	B/C ratio	1.78	1.72	1.66	1.54	1.10

Annex 31: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Litchi

Year: 2016/2017

District : Morang

Variety : Local

Propagation : Air layering

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				101749			88729
a.	Human labor	Day	38	375	14250	27	375	10125
b.	Bullock labor	Day	1	900	900	1	900	900
c.	Tractor	hour	3	1600	4800	2	1600	3200
d.	Pump set, water pond	hour	15	180	2700	20	180	3600
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1350	5400			
g.	Sapling	Number	165	35	5775			0
h.	Manure	Kg	6000	1.6	9600	5000	1.6	8000
i.	Fertilizer							
	Urea	Kg	32	25	800	30	25	750
	DAP	Kg	14	50	700	25	50	1250
	Potash	Kg	9	36	324	14	36	504
j.	Plant protection chemical	Rs			2500	4	1500	6000
k.	Bordeaux mixture and micro nutrient	Lum						3500
l.	Training and Pruning					2	1200	2400
m.	Equipments	Number	5	1200	6000			
n.	Land lease value	Rs/Year			27000			27000
o.	Interest on variable cost				12209.88			10647.48
p.	Others	Rs			3000			3500
q.	Management Cost	Month	12	1500	18000	12	1500	18000
2	Fixed cost				2560			2560
a.	Land tax	Rs			560			560
b.	Water tax	Rs			500			500
c.	Depreciation cost of farm equipments	Rs			500			500
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			116518.88			101936.48

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 25%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			12	28	46	55	
2	Production (Kg/Ha)			1644	3836	6302	7535	
3	Total income (Rs)		62472	145768	239476	286330		
4	Variable cost	113958.88	99376.48	109314.13	120245.54	132270.09	145497.10	160046.81
5	Fixed cost	2560	2560	2560	2560	2560	2560	2560
6	Total cost	116518.88	101936.48	111874.13	122805.54	134830.09	148057.10	162606.81
7	Profit/Loss	-116518.88	-101936.48	-111874.13	-60333.54	10937.91	91418.90	123723.19
8	B/C ratio					1.62	1.76	

BENEFIT COST RATIO							
SN	Year		8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		72	88	92	97	75
2	Production Kg/Ha		9864	12056	12604	13289	10275
3	Total income (Rs)		374832	458128	478952	504982	390450
4	Variable cost	176051.50	193656.65	213022.31	234324.54	257757.00	
5	Fixed cost	2560	2560	2560	2560	2560	2560
6	Total cost	178611.50	196216.65	215582.31	236884.54	260317.00	
7	Profit/Loss	196220.50	261911.35	263369.69	268097.46	130133.00	
8	B/C ratio	2.10	2.33	2.22	2.13	1.50	

Annex 32: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Litchi
Variety : Local

Year: 2016/2017

District : Siraha
Propagation : Air layering/Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				104968			88732
a.	Human labor	Day	40	350	14000	28	350	9800
b.	Bullock labor	Day	1	850	850	1	850	850
c.	Tractor	hour	3	1600	4800	2	1600	3200
d.	Pump set, water pond	hour	15	180	2700	20	180	3600
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	165	32	5280			0
h.	Manure	Kg	8000	1.6	12800	5000	1.6	8000
i.	Fertilizer							
	Urea	Kg	30	25	750	30	25	750
	DAP	Kg	15	50	750	20	50	1000
	Potash	Kg	8	36	288	12	36	432
j.	Plant protection chemical	Rs			2500	4	1500	6000
k.	Bordeaux mixture and micro nutrient	Lum						3500
l.	Training and Pruning					2	1000	2000
m.	Equipments	Number	5	1250	6250			
n.	Land lease value	Rs/Year			25000			25000
o.	Interest on variable cost				12596.16			10647.84
p.	Others	Rs			3000			3000
q.	Management Cost	Month	12	1750	21000	12	1800	21600
2	Fixed cost				2350			2250
a.	Land tax	Rs			600			600
b.	Water tax	Rs			350			350
c.	Depreciation cost of farm equipments	Rs			500			500
d.	Repair and maintenance of farm equipments	Rs			900			800
3	Total cost	Rs			119914.16			101629.84

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 25%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			15	28	52	67
2	Production (Kg/Ha)			1995	3724	6916	8911
3	Total income (Rs)		77805	145236	269724	347529	
4	Variable cost	117564.16	99379.84	109317.82	120249.61	132274.57	145502.02
5	Fixed cost	2350	2250	2250	2250	2250	2250
6	Total cost	119914.16	101629.84	111567.82	122499.61	134524.57	147752.02
7	Profit/Loss	-119914.16	-101629.84	-111567.82	-44694.61	10711.43	121971.98
8	B/C ratio					1.83	2.14

BENEFIT COST RATIO							
SN	Year		8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		75	86	91	96	77
2	Production Kg/Ha		9975	11438	12103	12768	10241
3	Total income (Rs)		389025	446082	472017	497952	3999399
4	Variable cost	176057.45	193663.19	213029.51	234332.46	257765.71	
5	Fixed cost	2250	2250	2250	2250	2250	2250
6	Total cost	178307.45	195913.19	215279.51	236582.46	260015.71	
7	Profit/Loss	210717.55	250168.81	256737.49	261369.54	139383.29	
8	B/C ratio	2.18	2.28	2.19	2.10	1.54	

Annex 33: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Litchi

Year: 2016/2017

District : Nuwakot

Variety : Local

Propagation : Air layering

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				106163			88090
a.	Human labor	Day	45	350	15750	28	350	9800
b.	Bullock labor	Day	1	900	900	1	900	900
c.	Tractor	hour	4	1550	6200	2	1550	3100
d.	Pump set, water pond	hour	15	175	2625	20	175	3500
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	5	1200	6000			
g.	Sapling	Number	165	35	5775			0
h.	Manure	Kg	6000	1.5	9000	4500	1.6	7200
i.	Fertilizer							
	Urea	Kg	35	25	875	30	25	750
	DAP	Kg	15	50	750	25	50	1250
	Potash	Kg	8	36	288	15	36	540
j.	Plant protection chemical	Rs			2750	4	1200	4800
k.	Bordeaux mixture and micro nutrient	Lum						3500
l.	Training and Pruning					3	1250	3750
m.	Equipments	Number	5	1200	6000			
n.	Land lease value	Rs/Year			25000			25000
o.	Interest on variable cost				12739.56			10570.8
p.	Others	Rs			3250			3000
q.	Management Cost	Month	12	1750	21000	12	1750	21000
2	Fixed cost				2475			2475
a.	Land tax	Rs			650			650
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			525			525
d.	Repair and maintenance of farm equipments	Rs			750			750
3	Total cost	Rs			121377.56			101135.8

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 25%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			15		30	50
2	Production (Kg/Ha)			1980	3960	6600	75
3	Total income (Rs)			77220	148500	247500	371250
4	Variable cost	118902.56	98660.80	108526.88	119379.57	131317.52	144449.28
5	Fixed cost	2475	2475	2475	2475	2475	2475
6	Total cost	121377.56	101135.80	111001.88	121854.57	133792.52	146924.28
7	Profit/Loss	-121377.56	-101135.80	-111001.88	-44634.57	14707.48	100575.72
8	B/C ratio				1.11	1.68	2.30

BENEFIT COST RATIO							
SN	Year		8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		90	95	95	97	72.75
2	Production Kg/Ha		11880	12540	12540	12804	9603
3	Total income (Rs)		463320	470250	470250	480150	360112.5
4	Variable cost	174783.63	192261.99	211488.19	232637.01	255900.71	
5	Fixed cost	2475	2475	2475	2475	2475	2475
6	Total cost	177258.63	194736.99	213963.19	235112.01	258375.71	
7	Profit/Loss	286061.37	275513.01	256286.81	245037.99	101736.79	
8	B/C ratio	2.61	2.41	2.20	2.04	1.39	

Annex 34: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Litchi

Year: 2016/2017

District : Parsa

Variety : Local

Propagation : Air layering/Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				106143			91837
a.	Human labor	Day	40	360	14400	28	360	10080
b.	Bullock labor	Day	2	900	1800	1	900	900
c.	Tractor	hour	4	1650	6600	2	1650	3300
d.	Pump set, water pond	hour	15	175	2625	20	175	3500
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1400	5600			
g.	Sapling	Number	165	32	5280			0
h.	Manure	Kg	5000	1.5	7500	4500	1.5	6750
i.	Fertilizer							
	Urea	Kg	32	25	800	27	25	675
	DAP	Kg	12	50	600	22	50	1100
	Potash	Kg	8	36	288	12	36	432
j.	Plant protection chemical	Rs			3000	4	1500	6000
k.	Bordeaux mixture and micro nutrient	Lum						3500
l.	Training and Pruning					3	1000	3000
m.	Equipments	Number	6	900	5400			
n.	Land lease value	Rs/Year			28000			28000
o.	Interest on variable cost				12737.16			11020.44
p.	Others	Rs			3250			3000
q.	Management Cost	Month	12	1750	21000	12	1800	21600
2	Fixed cost				2575			2575
a.	Land tax	Rs			500			500
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			525			525
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			121455.16			105432.44

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 25%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			12		30	42	63
2	Production (Kg/Ha)			1680	4200	5880		8820
3	Total income (Rs)		63840	159600	223440	335160		
4	Variable cost	118880.16	102857.44	113143.18	124457.50	136903.25	150593.58	165652.94
5	Fixed cost	2575	2575	2575	2575	2575	2575	2575
6	Total cost	121455.16	105432.44	115718.18	127032.50	139478.25	153168.58	168227.94
7	Profit/Loss	-121455.16	-105432.44	-115718.18	-63192.50	20121.75	70271.42	166932.06
8	B/C ratio				1.14	1.46	1.99	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		78	85	90	96
2	Production Kg/Ha	10920	11900	12600	13440	10360
3	Total income (Rs)	414960	452200	478800	510720	393680
4	Variable cost	182218.23	200440.05	220484.06	242532.46	266785.71
5	Fixed cost	2575	2575	2575	2575	2575
6	Total cost	184793.23	203015.05	223059.06	245107.46	269360.71
7	Profit/Loss	230166.77	249184.95	255740.94	265612.54	124319.29
8	B/C ratio	2.25	2.23	2.15	2.08	1.46

Annex 35: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Litchi

Year: 2016/2017

District : Gulmi

Variety : Local

Propagation : Air layering/Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				106393			88974
a.	Human labor	Day	42	350	14700	30	350	10500
b.	Bullock labor	Day	3	900	2700	1	900	900
c.	Tractor	hour	4	300	1200	2	300	600
d.	Pump set, water pond	hour	15	250	3750	20	250	5000
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1500	6000			
g.	Sapling	Number	165	35	5775			0
h.	Manure	Kg	6600	1.8	11880	4500	1.8	8100
i.	Fertilizer							
	Urea	Kg	30	25	750	22	25	550
	DAP	Kg	15	50	750	18	50	900
	Potash	Kg	8	36	288	9	36	324
j.	Plant protection chemical	Rs			2500	4	1600	3000
k.	Bordeaux mixture and micro nutrient	Lum						3500
l.	Training and Pruning					3	1200	3600
m.	Equipments	Number	5	1200	6000			
n.	Land lease value	Rs/Year			25000			25000
o.	Interest on variable cost				13831.09			10676.88
p.	Others	Rs			3500			3000
q.	Management Cost	Month	12	1800	21600	12	2000	24000
2	Fixed cost				2425			2425
a.	Land tax	Rs			300			300
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			525			525
d.	Repair and maintenance of farm equipments	Rs			1050			1050
3	Total cost	Rs			122649.09			102075.88

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 25%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			12	26	38	55	
2	Production Kg/Ha			1560	3380	4940	7150	
3	Total income (Rs)			59280	128440	187720	271700	
4	Variable cost	120224.09	99650.88	109615.97	120577.56	132635.32	145898.85	160488.74
5	Fixed cost	2425	2425	2425	2425	2425	2425	2425
6	Total cost	122649.09	102075.88	112040.97	123002.56	135006.32	148323.85	162913.74
7	Profit/Loss	-122649.09	-102075.88	-112040.97	-63722.56	-6620.32	39396.15	108786.26
8	B/C ratio					0.95	1.27	1.67
9	Cost per Kg					39.96	30.03	22.79

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)	66	80	88	95	75
2	Production (Kg/ha)	8580	10400	11440	12350	9750
3	Total income (Rs)	326040	395200	434720	469300	370500
4	Variable cost	176537.61	194191.37	212610.51	234971.56	258468.72
5	Fixed cost	2425	2425	2425	2425	2425
6	Total cost	178962.61	196616.37	216035.51	237396.56	260893.72
7	Profit/Loss	147077.39	198583.63	218684.49	231903.44	109606.28
8	B/C ratio	1.82	2.01	2.01	1.98	1.42
9	Cost per Kg	20.86	18.91	18.88	19.22	26.76

Annex 36: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Litchi

Year: 2016/2017

District : Nawalparasi

Variety : Local

Propagation : Air layering/Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				108444			91232
a.	Human labor	Day	40	400	16000	25	400	10000
b.	Bullock labor	Day	0	0	0	0	0	0
c.	Tractor	hour	4	1650	6600	2	1650	3300
d.	Pump set, water pond	hour	15	200	3000	20	200	4000
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1400	5600			
g.	Sapling	Number	165	38	6270			0
h.	Manure	Kg	6000	1.6	9600	5000	1.6	8000
i.	Fertilizer							
	Urea	Kg	30	25	750	30	25	750
	DAP	Kg	22	50	1100	25	50	1250
	Potash	Kg	9	36	324	12	36	432
j.	Plant protection chemical	Rs			2500	4	1500	3000
k.	Bordeaux mixture and micro nutrient	Lum						3500
l.	Training and Pruning					2	1000	2000
m.	Equipments	Number	4	1200	4800			
n.	Land lease value	Rs/Year			28000			28000
o.	Interest on variable cost				13013.28			10947.84
p.	Others	Rs			3500			3000
q.	Management Cost	Month	12	1700	20400	12	2000	24000
2	Fixed cost				2300			2400
a.	Land tax	Rs			600			600
b.	Water tax	Rs			400			500
c.	Depreciation cost of farm equipments	Rs			500			500
d.	Repair and maintenance of farm equipments	Rs			800			800
3	Total cost	Rs			123757.28			104579.84

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 25%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			12	27	45	66
2	Production (Kg/Ha)			1584	3564	5940	8712
3	Total income (Rs)		66528	149688	249480	365904	
4	Variable cost	121457.28	102179.84	112397.82	123637.61	136001.37	149601.50
5	Fixed cost	2300	2400	2400	2400	2400	2400
6	Total cost	123757.28	104579.84	114797.82	126037.61	138401.37	152001.50
7	Profit/Loss	-123757.28	-104579.84	-114797.82	-59509.61	11286.63	97478.50
8	B/C ratio				1.08	1.64	2.19

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		76	87	94	95
2	Production Kg/Ha	10032	11484	12408	12540	10032
3	Total income (Rs)	421344	482328	521136	526680	421344
4	Variable cost	181017.82	199119.60	219031.56	240934.72	265028.19
5	Fixed cost	2400	2400	2400	2400	2400
6	Total cost	183417.82	201519.60	221431.56	243334.72	267428.19
7	Profit/Loss	237926.18	280808.40	299704.44	283345.28	153915.81
8	B/C ratio	2.30	2.39	2.35	2.16	1.58

Annex 37: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Litchi

Year: 2016/2017

District : Rupandehi

Variety : Local

Propagation : Air layering/Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				108660			89182
a.	Human labor	Day	45	360	16200	30	360	10800
b.	Bullock labor	Day	1	900	900	1	900	0
c.	Tractor	hour	3	1650	4950	2	1650	3300
d.	Pump set, water pond	hour	15	200	3000	20	200	4000
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	165	35	5775			0
h.	Manure	Kg	7000	1.6	11200	4500	1.6	7200
i.	Fertilizer							
	Urea	Kg	35	25	875	30	35	1050
	DAP	Kg	15	50	750	20	50	1000
	Potash	Kg	10	36	360	12	36	432
j.	Plant protection chemical	Rs			2250	3	1600	4800
k.	Bordeaux mixture and micro nutrient	Lum						3500
l.	Training and Pruning					2	1100	2200
m.	Equipments	Number	5	1200	6000			
n.	Land lease value	Rs/Year			27500			27500
o.	Interest on variable cost				13039.2			10701.84
p.	Others	Rs			3500			3000
q.	Management Cost	Month	12	1700	20400	12	1700	20400
2	Fixed cost				2325			2325
a.	Land tax	Rs			500			500
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			525			525
d.	Repair and maintenance of farm equipments	Rs			750			750
3	Total cost	Rs			124024.2			102208.84

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 25%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			11		30	48
2	Production (Kg/Ha)			1496	4080	6528	69
3	Total income (Rs)			56100	153000	244800	351900
4	Variable cost	121699.20	99883.84	109872.22	120859.45	132945.39	160863.92
5	Fixed cost	2325	2325	2325	2325	2325	2325
6	Total cost	124024.20	102208.84	112197.22	123184.45	135270.39	148564.93
7	Profit/Loss	-124024.20	-102208.84	-112197.22	-67084.45	17729.61	188711.08
8	B/C ratio				1.13	1.65	2.16

BENEFIT COST RATIO							
SN	Year		8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		76	84	90	97	72.75
2	Production (Kg/ha)		10336	11424	12240	13192	9894
3	Total income (Rs)		387600	428400	459000	494700	371025
4	Variable cost	176950.32	194645.35	214109.88	235520.87	259072.96	
5	Fixed cost	2325	2325	2325	2325	2325	2325
6	Total cost	179275.32	196970.35	216434.88	237845.87	261397.96	
7	Profit/Loss	208324.68	231429.65	242565.12	256854.13	109627.04	
8	B/C ratio	2.16	2.17	2.12	2.08	1.42	

Annex 38: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Litchi

Year: 2016/2017

District : Bardia

Variety : Local

Propagation : Air layering/Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				110878			91779
a.	Human labor	Day	38	350	13300	29	350	10150
b.	Bullock labor	Day	1	900	900	1	900	0
c.	Tractor	hour	4	1650	6600	2	1650	3300
d.	Pump set, water pond	hour	15	180	2700	20	180	3600
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	5	1200	6000			
g.	Sapling	Number	165	36	5940			0
h.	Manure	Kg	9000	1.5	13500	6000	1.5	9000
i.	Fertilizer							
	Urea	Kg	30	25	750	33	25	825
	DAP	Kg	15	50	750	20	50	1000
	Potash	Kg	8	36	288	14	36	504
j.	Plant protection chemical	Rs			3500	4	1200	4800
k.	Bordeaux mixture and micro nutrient	Lum						3500
l.	Training and Pruning					3	1000	3000
m.	Equipments	Number	5	1000	5000			
n.	Land lease value	Rs/Year			27500			27500
o.	Interest on variable cost				13305.36			11013.48
p.	Others	Rs			3750			3000
q.	Management Cost	Month	12	1700	20400	12	1800	21600
2	Fixed cost				2600			2800
a.	Land tax	Rs			525			525
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			525			525
d.	Repair and maintenance of farm equipments	Rs			1000			1200
3	Total cost	Rs			126783.36			105592.48

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 25%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)				14	32	45
2	Production (Kg/Ha)				1974	4512	6345
3	Total income (Rs)			73038	166944	234765	339105
4	Variable cost	124183.36	102792.48	113071.73	124378.90	136816.79	150498.47
5	Fixed cost	2600	2800	2800	2800	2800	2800
6	Total cost	126783.36	105592.48	115871.73	127178.90	139616.79	153298.47
7	Profit/Loss	-126783.36	-105592.48	-115871.73	-54140.90	27327.21	81466.53
8	B/C ratio				1.20	1.53	2.01

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		75	88	90	94
2	Production Kg/Ha		10575	12408	12690	13254
3	Total income (Rs)	391275	459096	469530	490398	406926
4	Variable cost	182103.15	200313.46	220344.81	242379.29	266617.22
5	Fixed cost	2800	2800	2800	2800	2800
6	Total cost	184903.15	203113.46	223144.81	245179.29	269417.22
7	Profit/Loss	206371.85	255982.54	246385.19	245218.71	137508.78
8	B/C ratio	2.12	2.26	2.10	2.00	1.51

Annex 39: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Litchi

Year: 2016/2017

District : Surkhet

Variety : Local

Propagation : Air layering/Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				109585			92307
a.	Human labor	Day	45	350	15750	30	350	10500
b.	Bullock labor	Day	2	900	1800	2	900	1800
c.	Tractor	hour	2	1500	3000	2	1500	3000
d.	Pump set, water pond	hour	15	200	3000	20	200	4000
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	5	1500	7500			
g.	Sapling	Number	165	35	5775			0
h.	Manure	Kg	7500	1.6	12000	5000	1.6	8000
i.	Fertilizer							
	Urea	Kg	30	25	750	35	25	875
	DAP	Kg	15	50	750	22	50	1100
	Potash	Kg	10	36	360	12	36	432
j.	Plant protection chemical	Rs			2500	4	1250	5000
k.	Bordeaux mixture and micro nutrient	Lum						3500
l.	Training and Pruning					2	1250	2500
m.	Equipments	Number	4	1200	4800			
n.	Land lease value	Rs/Year			27000			27000
o.	Interest on variable cost				13150.2			11076.84
p.	Others	Rs			3000			3000
q.	Management Cost	Month	12	1800	21600	12	1800	21600
2	Fixed cost				2675			2625
a.	Land tax	Rs			600			600
b.	Water tax	Rs			525			525
c.	Depreciation cost of farm equipments	Rs			550			550
d.	Repair and maintenance of farm equipments	Rs			1000			950
3	Total cost	Rs			125410.2			106008.84

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 25%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			18	38	53	68
2	Production (Kg/Ha)			2448	5168	7208	9248
3	Total income (Rs)			93024	196384	273904	351424
4	Variable cost	122735.20	103383.84	113722.22	125094.45	137603.89	151364.28
5	Fixed cost	2675	2625	2625	2625	2625	2625
6	Total cost	125410.20	106008.84	116347.22	127719.45	140228.89	153989.28
7	Profit/Loss	-125410.20	-106008.84	-116347.22	-34695.45	56155.11	119914.72
8	B/C ratio				1.40	1.78	2.08

BENEFIT COST RATIO							
SN	Year		8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		85	90	92	96	74
2	Production Kg/Ha		11560	12240	12512	13056	10064
3	Total income (Rs)		439280	465120	475456	496128	382432
4	Variable cost		183150.78	201465.86	221612.44	243773.69	268151.06
5	Fixed cost		2625	2625	2625	2625	2625
6	Total cost		185775.78	204090.86	224237.44	246398.69	270776.06
7	Profit/Loss		253504.22	261029.14	251218.56	249729.31	111655.94
8	B/C ratio		2.36	2.28	2.12	2.01	1.41

Annex 40: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop: Kiwi

Year: 2016/2017

District: Solukhumbu

Variety: Hey wart

Propagation: Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				298360			121190
a.	Human labor	Day	55	350	19250	38	350	13300
b.	Bullock labor	Day	10	850	8500	2	850	1700
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	20	275	5500	22	275	6050
e.	Fencing	Lum	0	0	110000			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	330	200	66000			0
h.	Manure	Kg	9000	2	18000	10500	2.1	22050
i.	Fertilizer							
	Urea	Kg	25	30	750	20	25	500
	DAP	Kg	15	50	750	25	50	1250
	Potash	Kg	10	36	360	15	36	540
j.	Plant protection chemical	Rs			2500	3	1800	5400
k.	Bordeaux mixture and micro nutrient	Lum			1500			4000
l.	Training and Pruning					4	1600	6400
m.	Equipments	Number	6	900	5400			
n.	Land lease value	Rs/Year			30000			30000
o.	Interest on variable cost				38786.8			14542.8
p.	Others/neting cost	Rs			3250			3000
q.	Management Cost	Month	12	1800	21600	12	2250	27000
2	Fixed cost				2540			2440
a.	Land tax	Rs			500			500
b.	Water tax	Rs			300			400
c.	Depreciation cost of farm equipments	Rs			540			540
d.	Repair and maintenance of farm equipments	Rs			1200			1000
3	Total cost	Rs			339686.8			138172.8

Note : From 3-15 years : Cost increased by 15%

From 16-25 years : Cost same of 15 years but production decrease by 15%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)				4	9	19	26
2	Production (Kg/ha)				980	2205	4655	6370
3	Total income (Rs)			151900	341775	721525	987350	
4	Variable cost	337146.80	135732.80	156092.72	179506.63	206432.62	237397.52	273007.14
5	Fixed cost	2540	2440	2440	2440	2440	2440	2440
6	Total cost	339686.80	138172.80	158532.72	181946.63	208872.62	239837.52	275447.14
7	Profit/Loss	-339686.80	-138172.80	-158532.72	-30046.63	132902.38	481687.48	711902.86
8	B/C ratio					1.64	3.01	3.58
9	Cost per Kg					94.73	51.52	43.24

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		36	39	42	48
2	Production (Kg/Ha)	8820	9555	10290	11760	10535
3	Total income (Rs)	1367100	1481025	1594950	1822800	1632925
4	Variable cost	313958.21	361051.95	415209.74	477491.20	549114.88
5	Fixed cost	2440	2440	2440	2440	2440
6	Total cost	316398.21	363491.95	417649.74	479931.20	551554.88
7	Profit/Loss	1050701.79	1117533.05	1177300.26	1342868.80	1081370.12
8	B/C ratio	4.32	4.07	3.82	3.80	2.96
9	Cost per Kg		35.87	38.04	40.59	40.81

Annex 41: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop: Kiwi

Year: 2016/2017

District: Illam

Variety: Hey wart

Propagation: Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				291333			109449
a.	Human labor	Day	58	350	20300	32	350	11200
b.	Bullock labor	Day	8	850	6800	2	850	1700
c.	Tractor	hour			0			0
d.	Pump set, water pond	hour	15	275	4125	20	275	5500
e.	Fencing	Lum	0	0	105000			
f.	Layout	Day	3	1500	4500			
g.	Sapling	Number	330	210	69300			0
h.	Manure	Kg	9000	1.75	15750	10500	1.8	18900
i.	Fertilizer							
	Urea	Kg	20	26	520	25	25	625
	DAP	Kg	15	50	750	18	50	900
	Potash	Kg	8	36	288	9	36	324
j.	Plant protection chemical	Rs			3000	3	1600	4800
k.	Bordeaux mixture and micro nutrient	Lum			2500			5000
l.	Training and Pruning					4	1500	6000
m.	Equipments	Number	5	1000	5000			
n.	Land lease value	Rs/Year			27500			27500
o.	Interest on variable cost (14%)				34959.96			13133.88
p.	Others	Rs			5000			3000
q.	Management Cost	Month	12	1750	21000	12	2000	24000
2	Fixed cost				2950			3100
a.	Land tax	Rs			600			600
b.	Water tax	Rs			500			500
c.	Depreciation cost of farm equipments	Rs			1050			1100
d.	Repair and maintenance of farm equipments	Rs			800			900
3	Total cost	Rs			329242.96			125682.88

Note : From 3-15 years : Cost increased by 15%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			3.5		8	21	28
2	Production Kg/Ha			840	1920	5040	6720	
3	Total income (Rs)		126000	288000	756000	1008000		
4	Variable cost	326,292.96	122,582.88	140,970.31	162,115.86	186,433.24	214,398.22	246,557.96
5	Fixed cost	2950	3100	3100	3100	3100	3100	3100
6	Total cost	329242.96	125682.88	144070.31	165215.86	189533.24	217498.22	249657.96
7	Profit/Loss	-329242.96	-125682.88	-144070.31	-39215.86	98466.76	538501.78	758342.04
8	B/C ratio				1.52	3.48	4.04	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		32	36	43	45
2	Production (Kg/Ha)		7680	8640	10320	10800
3	Total income (Rs)	1152000	1296000	1548000	1620000	1368000
4	Variable cost	283541.65	326072.90	374983.83	431231.41	495916.12
5	Fixed cost		3100	3100	3100	3100
6	Total cost	286641.65	329172.90	378083.83	434331.41	499016.12
7	Profit/Loss		865358.35	966827.10	1169916.17	1185668.59
8	B/C ratio		4.02	3.94	4.09	3.73

Annex 42: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Kiwi

Year: 2016/2017

District : Sindhupalchok

Variety : Heywart

Propagation: Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				297455			111428
a.	Human labor	Day	62	350	21700	32	350	11200
b.	Bullock labor	Day	7	900	6300	2	900	1800
c.	Tractor	hour			0			0
d.	Pump set, water pond	hour	15	225	3375	20	225	4500
e.	Fencing	Lum	0	0	115000			
f.	Layout	Day	5	1250	6250			
g.	Sapling	Number	330	180	59400			0
h.	Manure	Kg	9000	1.8	16200	10500	1.8	18900
i.	Fertilizer							
	Urea	Kg	25	26	650	20	26	520
	DAP	Kg	15	48	720	15	48	720
	Potash	Kg	10	36	360	8	36	288
j.	Plant protection chemical	Rs			3000	4	1500	6000
k.	Bordeaux mixture and micro nutrient	Lum			2500			5000
l.	Training and Pruning					4	1500	6000
m.	Equipments	Number	6	1000	6000			
n.	Land lease value	Rs/Year			28000			28000
o.	Interest on variable cost				35694.6			13371.36
p.	Others	Rs			4000			4500
q.	Management Cost	Month	12	2000	24000	12	2000	24000
2	Fixed cost				2400			2400
a.	Land tax	Rs			500			500
b.	Water tax	Rs			400			400
c.	Depreciation cost of farm equipments	Rs			500			500
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			335549.6			127199.36

Note : From 3-15 years : Cost increased by 15%

From 16-25 years : Cost same of 15 years but production decrease by 15%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			5		12	19
2	Production (Kg/ha)			1210	2904	4598	24
3	Total income (Rs)			193600	464640	735680	929280
4	Variable cost	333149.60	124799.36	143519.26	165047.15	189804.23	218274.86
5	Fixed cost	2400	2400	2400	2400	2400	2400
6	Total cost (Rs)	335549.60	127199.36	145919.26	167447.15	192204.23	220674.86
7	Profit/Loss	-335549.60	-127199.36	-145919.26	26152.85	272435.77	515005.14
8	B/C ratio			1.16	2.42	3.33	3.67

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		29	36	38	46
2	Production (Kg/ha)	7018	8712	9196	11132	9680
3	Total income (Rs)	1122880	1393920	1471360	1781120	1548800
4	Variable cost	288668.50	331968.78	381764.10	439028.71	504883.02
5	Fixed cost	2400	2400	2400	2400	2400
6	Total cost (Rs)	291068.50	334368.78	384164.10	441428.71	507283.02
7	Profit/Loss	831811.50	1089551.22	1087195.90	1339691.29	1041516.98
8	B/C ratio	3.86	4.17	3.83	4.03	3.05

Annex 43: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Kiwi

Year: 2016/2017

District : Gorkha

Variety : Local

Propagation: Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				308832			115607
a.	Human labor	Day	58	350	20300	36	350	12600
b.	Bullock labor	Day	9	1000	9000	1	1000	1000
c.	Tractor	hour			0			0
d.	Pump set, water pond	hour	15	250	3750	18	250	4500
e.	Fencing	Lum	0	0	120000			
f.	Layout	Day	5	1200	6000			
g.	Sapling	Number	330	200	66000			0
h.	Manure	Kg	8000	1.9	15200	10500	2	21000
i.	Fertilizer							
	Urea	Kg	22	27	594	25	27	675
	DAP	Kg	12	50	600	16	50	800
	Potash	Kg	8	36	288	12	36	432
j.	Plant protection chemical	Rs			3000	4	1400	5600
k.	Bordeaux mixture and micro nutrient	Lum			4000			6000
l.	Training and Pruning					5	1500	7500
m.	Equipments	Number	7	1000	7000			
n.	Land lease value	Rs/Year			28000			28000
o.	Interest on variable cost (14%)				37059.84			13872.84
p.	Others	Rs			3500			3500
q.	Management Cost	Month	12	1800	21600	12	2000	24000
2	Fixed cost				2200			2200
a.	Land tax	Rs			600			600
b.	Water tax	Rs			350			350
c.	Depreciation cost of farm equipments	Rs			500			500
d.	Repair and maintenance of farm equipments	Rs			750			750
3	Total cost	Rs			348091.84			131679.84

Note : From 3-15 years : Cost increased by 15%

From 16-25 years : Cost same of 15 years but production decrease by 15%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)				4	9	18	22
2	Production (Kg/ha)				960	2160	4320	5280
3	Total income (Rs)			168000	378000	756000	924000	
4	Variable cost	345891.84	129479.84	148901.82	171237.09	196922.65	226461.05	260430.21
5	Fixed cost	2200	2200	2200	2200	2200	2200	2200
6	Total cost	348091.84	131679.84	151101.82	173437.09	199122.65	228661.05	262630.21
7	Profit/Loss	-348091.84	-131679.84	-151101.82	-5437.09	178877.35	527338.95	661369.79
8	B/C ratio					1.90	3.31	3.52

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		29	35	40	44
2	Production (Kg/ha)	6960	8400	9600	10560	9360
3	Total income (Rs)	1218000	1470000	1680000	1848000	1638000
4	Variable cost	299494.74	344418.95	396081.79	455494.06	523818.17
5	Fixed cost	2200	2200	2200	2200	2200
6	Total cost	301694.74	346618.95	398281.79	457694.06	526018.17
7	Profit/Loss	916305.26	1123381.05	1281718.21	1390305.94	1111981.83
8	B/C ratio	4.04	4.24	4.22	4.04	3.11

Annex 44: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Kiwi

Year: 2016/2017

District : Gulmi

Variety : Local

Propagation: Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				317115			125550
a.	Human labor	Day	60	400	24000	33	400	13200
b.	Bullock labor	Day	7	1000	7000	2	1000	2000
c.	Tractor	hour			0			0
d.	Pump set, water pond	hour	15	225	3375	20	225	4500
e.	Fencing	Lum	0	0	120000			
f.	Layout	Day	5	1500	7500			
g.	Sapling	Number	330	200	66000			0
h.	Manure	Kg	8000	1.9	15200	10000	2	20000
i.	Fertilizer							
	Urea	Kg	30	26	780	35	26	910
	DAP	Kg	18	50	900	20	50	1000
	Potash	Kg	10	36	360	15	36	540
j.	Plant protection chemical	Rs			4000	4	1200	4800
k.	Bordeaux mixture and micro nutrient	Lum						5000
l.	Training and Pruning					6	1400	8400
m.	Equipments	Number	5	1000	5000			
n.	Land lease value	Rs/Year			35000			35000
o.	Interest on variable cost (14%)				38053.8			15066
p.	Others	Rs			4000			5000
q.	Management Cost	Month	12	2000	24000	12	2100	25200
2	Fixed cost				2350			2350
a.	Land tax	Rs			550			550
b.	Water tax	Rs			300			300
c.	Depreciation cost of farm equipments	Rs			500			500
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			357518.8			142966

Note : From 3-15 years : Cost increased by 15%

From 16-25 years : Cost same of 15 years but production decrease by 15%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			3		8	15
2	Production (Kg/ha)			690	1840	3450	4140
3	Total income (Rs)		124200	331200	621000	745200	
4	Variable cost	355168.80	140616.00	161708.40	185964.66	213859.36	245938.26
5	Fixed cost	2350	2350	2350	2350	2350	2350
6	Total cost	357518.80	142966.00	164058.40	188314.66	216209.36	248288.26
7	Profit/Loss	-357518.80	-142966.00	-164058.40	-64114.66	114990.64	372711.74
8	B/C ratio				1.53	2.50	2.61

BENEFIT COST RATIO							
SN	Year		8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		27	35	38	42	36.5
2	Production (Kg/ha)		6210	8050	8740	9660	8395
3	Total income (Rs)		1117800	14490000	1573200	1738800	1511100
4	Variable cost	325253.35	374041.36	430147.56	494669.69	568870.15	
5	Fixed cost	2350	2350	2350	2350	2350	2350
6	Total cost	327603.35	376391.36	432497.56	497019.69	571220.15	
7	Profit/Loss	790196.65	1072608.64	1140702.44	1241780.31	939879.85	
8	B/C ratio	3.41	3.85	3.64	3.50	2.65	

Annex 45: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Kiwi

Year: 2016/2017

District : Rolpa

Variety : Hey wart

Propagation: Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				303368			112622
a.	Human labor	Day	58	375	21750	36	375	13500
b.	Bullock labor	Day	7	1000	7000	2	1000	2000
c.	Tractor	hour			0			0
d.	Pump set, water pond	hour	12	280	3360	18	280	5040
e.	Fencing	Lum	0	0	110000			
f.	Layout	Day	5	1200	6000			
g.	Sapling	Number	330	225	74250			0
h.	Manure	Kg	8500	2	17000	9500	2	19000
i.	Fertilizer							
	Urea	Kg	26	26	676	25	26	650
	DAP	Kg	18	50	900	20	50	1000
	Potash	Kg	12	36	432	12	36	432
j.	Plant protection chemical	Rs			4000	4	1500	6000
k.	Bordeaux mixture and micro nutrient	Lum						5000
l.	Training and Pruning					4	1500	6000
m.	Equipments	Number	5	1000	5000			
n.	Land lease value	Rs/Year			25000			25000
o.	Interest on variable cost (14%)				36404.16			13514.64
p.	Others	Rs			4000			5000
q.	Management Cost	Month	12	2000	24000	12	2000	24000
2	Fixed cost				2325			2325
a.	Land tax	Rs			475			475
b.	Water tax	Rs			350			350
c.	Depreciation cost of farm equipments	Rs			500			500
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			342097.16			128461.64

Note : From 3-15 years : Cost increased by 15%

From 16-25 years : Cost same of 15 years but production decrease by 15%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)				4	10	18	25
2	Production Kg/Ha				960	2400	4320	6000
3	Total income (Rs)			153600	384000	691200	960000	
4	Variable cost	339772.16	126136.64	145057.14	166815.71	191838.06	220613.77	253705.84
5	Fixed cost	2325	2325	2325	2325	2325	2325	2325
6	Total cost	342097.16	128461.64	147382.14	169140.71	194163.06	222938.77	256030.84
7	Profit/Loss	-342097.16	-128461.64	-147382.14	-15540.71	189836.94	468261.23	703969.16
8	B/C ratio				1.98	3.10	3.75	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		31	35	42	44
2	Production (Kg/ha)		7440	8400	10080	10560
3	Total income (Rs)	1190400	1344000	1612800	1689600	1436160
4	Variable cost	291761.71	335525.97	385854.87	443733.10	510293.06
5	Fixed cost	2325	2325	2325	2325	2325
6	Total cost	294086.71	337850.97	388179.87	446058.10	512618.06
7	Profit/Loss	896313.29	1006149.03	1224620.13	1243541.90	923541.94
8	B/C ratio	4.05	3.98	4.15	3.79	2.80

Annex 46: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Kiwi

Year: 2016/2017

District : Dailekh

Variety : Local

Propagation: Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				285935			113215
a.	Human labor	Day	60	350	21000	36	350	12600
b.	Bullock labor	Day	7	1100	7700	2	1100	2200
c.	Tractor	hour			0			0
d.	Pump set, water pond	hour	15	225	3375	20	225	4500
e.	Fencing	Lum	0	0	105000			
f.	Layout	Day	5	1200	6000			
g.	Sapling	Number	330	180	59400			0
h.	Manure	Kg	8800	2	17600	9500	2	19000
i.	Fertilizer							
	Urea	Kg	30	25	750	25	25	625
	DAP	Kg	15	50	750	25	50	1250
	Potash	Kg	10	36	360	15	36	540
j.	Plant protection chemical	Rs			5000	4	1500	6000
k.	Bordeaux mixture and micro nutrient	Lum						5000
l.	Training and Pruning					5	1500	7500
m.	Equipments	Number	5	1200	6000			
n.	Land lease value	Rs/Year			25000			25000
o.	Interest on variable cost				34312.2			13585.8
p.	Others	Rs			4000			5000
q.	Management Cost	Month	12	2000	24000	12	2000	24000
2	Fixed cost				2290			2300
a.	Land tax	Rs			550			550
b.	Water tax	Rs			400			400
c.	Depreciation cost of farm equipments	Rs			450			450
d.	Repair and maintenance of farm equipments	Rs			890			900
3	Total cost	Rs			322537.2			129100.8

Note : From 3-15 years : Cost increased by 15%

From 16-25 years : Cost same of 15 years but production decrease by 15%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)				4	9	15
2	Production (Kg/ha)				940	2115	3525
3	Total income (Rs)			155100	348975	581625	853050
4	Variable cost	320247.20	126800.80	145820.92	167694.06	192848.17	221775.39
5	Fixed cost	2290	2300	2300	2300	2300	2300
6	Total cost	322537.20	129100.80	148120.92	169994.06	195148.17	224075.39
7	Profit/Loss	-322537.20	-129100.80	-148120.92	-14894.06	153826.83	357549.61
8	B/C ratio					1.79	2.60
						3.31	

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		28	33	38	42
2	Production (Kg/ha)		6580	7755	8930	9870
3	Total income (Rs)	1085700	1279575	1473450	1628550	1384267.5
4	Variable cost	293297.96	337292.65	387886.55	446069.53	512979.96
5	Fixed cost	2300	2300	2300	2300	2300
6	Total cost	295597.96	339592.65	390186.55	448369.53	515279.96
7	Profit/Loss	790102.04	939982.35	1083263.45	1180180.47	868987.54
8	B/C ratio	3.67	3.77	3.78	3.63	2.69

Annex 47: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Banana
Variety : Local

Year: 2016/2017

District : Illam
Propagation : Sucker

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				126846			97974
a.	Human labor	Day	90	350	31500	52	350	18200
b.	Bullock labor	Day	6	900	5400	2	900	1800
c.	Tractor-power tiller	hour	1	600	600			0
d.	Pump set, water pond	hour	10	250	2500	15	250	3750
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	1100	10	11000			0
h.	Manure	Kg	4000	1.5	6000	4800	1.5	7200
i.	Fertilizer							
	Urea	Kg	25	26	650	30	26	780
	DAP	Kg	35	50	1750	40	50	2000
	Potash	Kg	8	37	296	12	37	444
j.	Plant protection chemical	Rs			4000	2	1500	3000
k.	Bordeaux mixture and micro nutrient	Lum			4500			5000
l.	Cleaning					4	950	3800
m.	Equipments	Number	3	1250	3750			
n.	Land lease value	Rs/Year			25000			25000
o.	Interest on variable cost				15221.52			11756.88
p.	Others	Rs			4500			6000
q.	Management Cost	Month	12	1700	20400	12	1750	21000
2	Fixed cost				2350			2350
a.	Land tax	Rs			400			400
b.	Water tax	Rs			550			550
c.	Depreciation cost of farm equipments	Rs			600			600
d.	Repair and maintenance of farm equipments	Rs			800			800
3	Total cost	Rs			144417.52			112080.88

BENEFIT COST RATIO					
SN	Year	Investment Phase	2	3	4
1	Production (Kg/plant)		11	15	16
2	Production (Kg/ha)		9900	13500	14400
3	Total income (Rs)		316800	432000	460800
4	Variable cost	142067.52	109730.88	120703.97	132774.36
5	Fixed cost	2350	2350	2350	2350
6	Total cost	144417.52	112080.88	123053.97	135124.36
7	Profit/Loss	-144417.52	204719.12	308946.03	325675.64
8	B/C ratio		2.83	3.51	3.41

Annex 48: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Banana

Year: 2016/2017

District : Morang

Variety : Malbhog

Propagation : Sucker

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				140610			100012
a.	Human labor	Day	98	400	39200	65	400	26000
b.	Bullock labor	Day	0	0	0	0	0	0
c.	Tractor	hour	6	1600	9600	2	1600	3200
d.	Pump set, water pond	hour	10	250	2500	15	250	3750
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1500	6000			
g.	Sapling	Number	1100	15	16500			0
h.	Manure	Kg	3000	1.5	4500	4500	1.5	6750
i.	Fertilizer							
	Urea	Kg	25	26	650	30	26	780
	DAP	Kg	30	50	1500	35	50	1750
	Potash	Kg	10	36	360	12	36	432
j.	Plant protection chemical	Rs			4000	2	1800	3600
k.	Bordeaux mixture and micro nutrient	Lum			5000			3000
l.	Cleaning					5	750	3750
m.	Equipments	Number	4	1200	4800			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				16873.2			12001.44
p.	Others	Rs			5000			6000
q.	Management Cost	Month	12	1750	21000	12	1750	21000
2	Fixed cost				2600			2600
a.	Land tax	Rs			450			450
b.	Water tax	Rs			500			500
c.	Depreciation cost of farm equipments	Rs			750			750
d.	Repair and maintenance of farm equipments	Rs			900			900
3	Total cost	Rs			160083.2			114613.44

BENEFIT COST RATIO					
SN	Year	Investment Phase	2	3	4
1	Production (Kg/plant)		10	15	18
2	Production (Kg/ha)		9000	13500	16200
3	Total income (Rs)		324000	486000	583200
4	Variable cost	157483.20	112013.44	123214.78	135536.26
5	Fixed cost	2600	2600	2600	2600
6	Total cost	160083.20	114613.44	125814.78	138136.26
7	Profit/Loss	-160083.20	209386.56	360185.22	445063.74
8	B/C ratio		2.83	3.86	4.22

Annex 49: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Banana

Year: 2016/2017

District : Dhading

Variety : Jhapali Malbhog

Propagation : Sucker

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				136565			106496
a.	Human labor	Day	90	400	36000	60	400	24000
b.	Bullock labor	Day	2	900	1800	1	900	900
c.	Tractor	hour	5	1600	8000			0
d.	Pump set, water pond	hour	10	250	2500	15	250	3750
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1250	5000			
g.	Sapling	Number	1100	12	13200			0
h.	Manure	Kg	3000	1.5	4500	4200	1.5	6300
i.	Fertilizer							
	Urea	Kg	35	26	910	25	26	650
	DAP	Kg	40	50	2000	35	50	1750
	Potash	Kg	15	37	555	158	37	5846
j.	Plant protection chemical	Rs			3000	2	1600	3200
k.	Bordeaux mixture and micro nutrient	Lum			3200			3500
l.	Cleaning					4	1000	4000
m.	Equipments	Number	4	950	3800			
n.	Land lease value	Rs/Year			26000			26000
o.	Interest on variable cost				16387.8			12779.52
p.	Others	Rs			4500			5000
q.	Management Cost	Month	12	1800	21600	12	1800	21600
2	Fixed cost				3650			3650
a.	Land tax	Rs			500			500
b.	Water tax	Rs			750			750
c.	Depreciation cost of farm equipments	Rs			1200			1200
d.	Repair and maintenance of farm equipments	Rs			1200			1200
3	Total cost	Rs			156602.8			122925.52

BENEFIT COST RATIO					
SN	Year	Investment Phase	2	3	4
1	Production (Kg/plant)		12	18	21
2	Production (Kg/ha)		10800	16200	18900
3	Total income (Rs)		324000	486000	567000
4	Variable cost	152952.80	119275.52	131203.07	144323.38
5	Fixed cost	3650	3650	3650	3650
6	Total cost	156602.80	122925.52	134853.07	147973.38
7	Profit/Loss	-156602.80	201074.48	351146.93	419026.62
8	B/C ratio		2.64	3.60	3.83

Annex 50: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Banana
Variety : Local

Year: 2016/2017

District : Mahottari
Propagation : Sucker

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				120160			87129
a.	Human labor	Day	90	350	31500	60	350	21000
b.	Bullock labor	Day	0	0	0	0	0	0
c.	Tractor	hour	6	1600	9600			0
d.	Pump set, water pond	hour	10	225	2250	15	225	3375
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1250	3750			
g.	Sapling	Number	1100	10	11000			0
h.	Manure	Kg	3000	1.5	4500	4200	1.5	6300
i.	Fertilizer							
	Urea	Kg	25	26	650	22	26	572
	DAP	Kg	35	50	1750	35	50	1750
	Potash	Kg	10	36	360	12	36	432
j.	Plant protection chemical	Rs			3500	2	1600	3200
k.	Bordeaux mixture and micro nutrient	Lum			3500		0	3500
l.	Cleaning					5	800	4000
m.	Equipments	Number	4	1200	4800			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				14419.2			10455.48
p.	Others	Rs			5000			5000
q.	Management Cost	Month	12	1500	18000	12	1500	18000
2	Fixed cost				2250			2250
a.	Land tax	Rs			400			400
b.	Water tax	Rs			500			500
c.	Depreciation cost of farm equipments	Rs			600			600
d.	Repair and maintenance of farm equipments	Rs			750			750
3	Total cost	Rs			136829.2			99834.48

BENEFIT COST RATIO				
SN	Year	Investment Phase	2	3
1	Production (Kg/plant)		11	16
2	Production (Kg/ha)		9900	14400
3	Total income (Rs)		297000	432000
4	Variable cost	134579.20	97584.48	107342.93
5	Fixed cost	2250	2250	2250
6	Total cost	136829.20	99834.48	109592.93
7	Profit/Loss	-136829.20	197165.52	322407.07
8	B/C ratio		2.97	3.94

Annex 51: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Banana
Variety : Willium Hybrid

Year: 2016/2017

District : Surkhet
Propagation : Sucker

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				131946			101999
a.	Human labor	Day	90	350	31500	55	350	19250
b.	Bullock labor	Day	0	0	0	0	0	0
c.	Tractor	hour	6	1600	9600			0
d.	Pump set, water pond	hour	10	225	2250	15	225	3375
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1250	3750			
g.	Sapling	Number	1100	15	16500			0
h.	Manure	Kg	3000	1.5	4500	4500	1.5	6750
i.	Fertilizer							
	Urea	Kg	25	26	650	28	26	728
	DAP	Kg	30	50	1500	35	50	1750
	Potash	Kg	8	37	296	158	37	5846
j.	Plant protection chemical	Rs			3000	2	1800	3600
k.	Bordeaux mixture and micro nutrient	Lum			4000			4500
l.	Cleaning					4	1200	4800
m.	Equipments	Number	4	1000	4000			
n.	Land lease value	Rs/Year			26000			26000
o.	Interest on variable cost				15833.52			12239.88
p.	Others	Rs			4000			5000
q.	Management Cost	Month	12	1700	20400	12	1700	20400
2	Fixed cost				2400			2400
a.	Land tax	Rs			400			400
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			600			600
d.	Repair and maintenance of farm equipments	Rs			800			800
3	Total cost	Rs			150179.52			116638.88

BENEFIT COST RATIO					
SN	Year	Investment Phase	2	3	4
1	Production (Kg/plant)		12	16	18
2	Production (Kg/ha)		10800	14400	16200
3	Total income (Rs)		378000	504000	567000
4	Variable cost	147779.52	114238.88	125662.77	138229.04
5	Fixed cost	2400	2400	2400	2400
6	Total cost	150179.52	116638.88	128062.77	140629.04
7	Profit/Loss	-150179.52	261361.12	375937.23	426370.96
8	B/C ratio		3.24	3.94	4.03

Annex 52: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Banana
Variety : G-9

Year: 2016/2017

District : Kailali
Propagation : Tissue culture

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				208870			115114
a.	Human labor	Day	120	400	48000	75	400	30000
b.	Bullock labor	Day	0	0	0	0	0	0
c.	Tractor	hour	5	1600	8000			0
d.	Pump set, water pond	hour	10	250	2500	15	250	3750
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	1100	60	66000			0
h.	Manure	Kg	4000	1.2	4800	5000	1.2	6000
i.	Fertilizer							
	Urea	Kg	25	26	650	45	26	1170
	DAP	Kg	30	50	1500	35	50	1750
	Potash	Kg	10	37	370	12	37	444
j.	Plant protection chemical	Rs			4000	2	2000	4000
k.	Bordeaux mixture and micro nutrient	Lum			5000			5000
l.	Cleaning					4	1000	4000
m.	Equipments	Number	5	1250	6250			
n.	Land lease value	Rs/Year			30000			30000
o.	Interest on variable cost				25064.4			13813.68
p.	Others	Rs			6000			8000
q.	Management Cost	Month	12	1750	21000	12	1750	21000
2	Fixed cost				3500			3500
a.	Land tax	Rs			500			500
b.	Water tax	Rs			800			800
c.	Depreciation cost of farm equipments	Rs			1000			1000
d.	Repair and maintenance of farm equipments	Rs			1200			1200
3	Total cost	Rs			237434.4			132427.68

Note : From 2 years : Cost increased by 10%

BENEFIT COST RATIO					
SN	Year	Investment Phase	2	3	4
1	Production (Kg/plant)		18	20	22
2	Production (Kg/ha)		16200	18000	19800
3	Total income (Rs)		486000	540000	594000
4	Variable cost	233934.40	128927.68	141820.45	156002.49
5	Fixed cost	3500	3500	3500	3500
6	Total cost	237434.40	132427.68	145320.45	159502.49
7	Profit/Loss	-237434.40	353572.32	394679.55	434497.51
8	B/C ratio		3.67	3.72	3.72
9	Cost per Kg		8.17	8.07	8.06

Annex 53: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Lime

Year: 2016/2017

District : Dhankuta

Variety : Banarasi

Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				108096			79600
a.	Human labor	Day	54	350	18900	30	350	10500
b.	Bullock labor	Day	6	900	5400	2	900	1800
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	200	2000	15	200	3000
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	45	14850			0
h.	Manure	Kg	4800	1.5	7200	6250	1.6	10000
i.	Fertilizer							
	Urea	Kg	25	26	650			
	DAP	Kg	20	50	1000			
	Potash	Kg	8	37	296			
j.	Plant protection chemical	Rs			3200	2	1800	3600
k.	Bordeaux mixture and micro nutrient	Lum			3000			4000
l.	Training and Pruning					2	1250	2500
m.	Equipments	Number	4	900	3600			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				11890.56			8756
p.	Others	Rs			4000			5000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2950			2950
a.	Land tax	Rs			450			450
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			1100			1100
3	Total cost	Rs			122936.56			91306

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			4	5	10	13
2	Production (Kg/ha)		1040	1300	2600	3380	3900
3	Total income (Rs)	95680	119600	239200	310960	358800	
4	Variable cost	119986.56	88356.00	97191.60	106910.76	117601.84	129362.02
5	Fixed cost	2950	2950	2950	2950	2950	2950
6	Total cost	122936.56	91306.00	100141.60	109860.76	120551.84	132312.02
7	Profit/Loss	-122936.56	-91306.00	-461.60	9739.24	118648.16	178647.98
8	B/C ratio				1.09	1.98	2.35
							2.47

BENEFIT COST RATIO							
SN	Year	8	9	10	11-15 Yr	16-25 Yr	
1	Production (Kg/plant)		19	26	28	30	24
2	Production (Kg/ha)	4940	6760	7280	7800	6240	
3	Total income (Rs)	454480	621920	669760	717600	574080	
4	Variable cost	156528.04	172180.85	189398.93	189398.93	189398.93	
5	Fixed cost	2950	2950	2950	2950	2950	2950
6	Total cost	159478.04	175130.85	192348.93	192348.93	192348.93	
7	Profit/Loss	295001.96	446789.15	477411.07	525251.07	381731.07	
8	B/C ratio	2.85	3.55	3.48	3.73	2.98	

Annex 54: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Lime

Year: 2016/2017

District : Morang

Variety : Local

Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				113428			83725
a.	Human labor	Day	60	350	21000	35	350	12250
b.	Bullock labor	Day	6	900	5400	1	900	900
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	225	2250	15	225	3375
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	4	1200	4800			
g.	Sapling	Number	330	42	13860			0
h.	Manure	Kg	5000	1.5	7500	7000	1.5	10500
i.	Fertilizer							
	Urea	Kg	22	26	572			
	DAP	Kg	25	50	1250			
	Potash	Kg	8	37	296			
j.	Plant protection chemical	Rs			3500	2	1750	3500
k.	Bordeaux mixture and micro nutrient	Lum			4000			5000
l.	Training and Pruning					3	1000	3000
m.	Equipments	Number	4	1200	4800			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				12477.08			9209.75
p.	Others	Rs			5000			6000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2850			2850
a.	Land tax	Rs			400			400
b.	Water tax	Rs			650			650
c.	Depreciation cost of farm equipments	Rs			800			800
d.	Repair and maintenance of farm equipments	Rs			1000			1000
3	Total cost	Rs			128755.08			95784.75

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO								
SN	Year	Investment Phase	2	3	4	5	6	7
1	Production (Kg/plant)			5.5	8	12	16	24
2	Production (Kg/ha)		1430	2080	3120	4160	6240	
3	Total income (Rs)	121550	176800	265200	353600	530400		
4	Variable cost	125905.08	92934.75	10228.23	112451.05	123696.15	136065.77	149672.34
5	Fixed cost	2850	2850	2850	2850	2850	2850	2850
6	Total cost	128755.08	95784.75	105078.23	115301.05	126546.15	138915.77	152522.34
7	Profit/Loss	-128755.08	-95784.75	16471.78	61498.95	138653.85	214684.23	377877.66
8	B/C ratio			1.16	1.53	2.10	2.55	3.48
9	Cost per Kg					40.56	33.39	24.44

SN	Year	8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)		27	30	32	35
2	Production (Kg/ha)	7020	7800	8320	9100	7280
3	Total income (Rs)	596700	663000	707200	773500	618800
4	Variable cost	164639.58	181103.54	199213.89	199213.89	199213.89
5	Fixed cost	2850	2850	2850	2850	2850
6	Total cost	167489.58	183953.54	202063.89	202063.89	202063.89
7	Profit/Loss	429210.42	479046.46	505136.11	571436.11	416736.11
8	B/C ratio	3.56	3.60	3.50	3.83	3.06
9	Cost per Kg	23.86	23.58	24.29	22.20	27.76

Annex 55: AVERAGE COST OF PRODUCTION AND GROSS PROFIT PER HECTARE

Crop : Lime

Year: 2016/2017

District : Kavre

Variety : Local

Propagation : Seed

SN	Particulars	Unit	First Year			Second Year		
			Quantity	Price	Value in Rs	Quantity	Price	Value in Rs
1	Variable cost				109638			80625
a.	Human labor	Day	60	350	21000	35	350	12250
b.	Bullock labor	Day	6	900	5400	1	900	900
c.	Tractor	hour	0	0	0			0
d.	Pump set, water pond	hour	10	225	2250	15	225	3375
e.	Fencing	Lum	0	0	0			
f.	Layout	Day	3	1200	3600			
g.	Sapling	Number	330	45	14850			0
h.	Manure	Kg	4200	1.6	6720	6000	1.6	9600
i.	Fertilizer							
	Urea	Kg	30	26	780			
	DAP	Kg	25	50	1250			
	Potash	Kg	8	36	288			
j.	Plant protection chemical	Rs			3500	2	1800	3600
k.	Bordeaux mixture and micro nutrient	Lum			3200			4000
l.	Training and Pruning					3	900	2700
m.	Equipments	Number	3	1200	3600			
n.	Land lease value	Rs/Year			20000			20000
o.	Interest on variable cost				12060.18			8868.75
p.	Others	Rs			4000			5000
q.	Management Cost	Month	12	1600	19200	12	1600	19200
2	Fixed cost				2700			2700
a.	Land tax	Rs			450			450
b.	Water tax	Rs			600			600
c.	Depreciation cost of farm equipments	Rs			750			750
d.	Repair and maintenance of farm equipments	Rs			900			900
3	Total cost	Rs			124398.18			92193.75

Note : From 3-15 years : Cost increased by 10%

From 16-25 years : Cost same of 15 years but production decrease by 20%

BENEFIT COST RATIO							
SN	Year	Investment Phase	2	3	4	5	6
1	Production (Kg/plant)			5	8	12	15
2	Production (Kg/ha)			1300	2080	3120	3900
3	Total income (Rs)		117000	187200	280800	351000	468000
4	Variable cost	121698.18	89493.75	98443.13	108287.44	119116.18	131027.80
5	Fixed cost	2700	2700	2700	2700	2700	2700
6	Total cost	124398.18	92193.75	101143.13	110987.44	121816.18	133727.80
7	Profit/Loss	-124398.18	-92193.75	15856.88	76212.56	158983.82	211727.20
8	B/C ratio					2.31	2.62
							3.19

BENEFIT COST RATIO							
SN	Year		8	9	10	11-15 Yr	16-25 Yr
1	Production (Kg/plant)			23	25	25	30
2	Production (Kg/ha)			5980	6500	6500	7800
3	Total income (Rs)		538200	585000	585000	702000	608400
4	Variable cost		158543.64	174398.00	191837.80	191837.80	191837.80
5	Fixed cost		2700	2700	2700	2700	2700
6	Total cost		161243.64	177098.00	194537.80	194537.80	194537.80
7	Profit/Loss		376956.36	407902.00	390462.20	507462.20	413862.20
8	B/C ratio		3.34	3.30	3.01	3.61	3.13

