

A Business Plan of
Modal Pig Production Center
at
Balambu in Kathmandu



By

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PREFACE

Pig farming is one of the important activities in Nepal. It is rapidly developing, although, has been accepted socially and culturally by certain ethnic groups. It is changing gradually, probably, due to changes in lifestyle in urban areas, there is increasing meat demand in the country. Hence it is necessary to develop a well business plan before starting to produce it at a lower cost.



The business plan includes; description of farm and characteristics of the products, strategies of production/operation and marketing. It also covers strength, weakness, opportunity, and threats (SWOT) analysis and, a financial plan which envisage the financial condition of the business.

Hopefully, it will be highly useful to academicians, researchers and extension workers, policymakers, students, and commercial farmers.

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EXECUTIVE SUMMARY

An attempt was made to prepare a business plan of pig production, that has evolved from the sightseeing in Balambu and Kirtipur areas, reviewing the literature and roughly doing Strength, Weakness, Opportunity, and Threat (SWOT) analysis. In that area, there were some piglets producers but they were not producing in a systematic and strategic way. Hence, a pig farm was proposed to operate at Balambu in the joint venture including local commercial pig producer and livestock professional. The proposed farm will produce the piglets at a lower cost and under good care and management practice leading towards the good husbandry practice. There would be a herd of three Boars and 30 sows at the farm and about 4.4 hundred piglets will be produced annually for 5 years. The report says daily selling of pork in major hubs of Nepal is 23.84 metric tons with a total value of NRs 7,175,000.0, out of these Kathmandu alone covers 50 % of the total value. The pork processing industries and meat sellers stated that the pork consumption trend has increased by 10% during the previous years. The government encourages the peasants and entrepreneurs to rear pigs. Increasing demand for pork and supporting in insurance are the opportunities for the farm. But, the lower insured amount (25 to 30 thousand) may not recover the loss in case of the disease outbreak. However, preventive measures will be a tool to control it. Making involvement of local people and livestock professional, staying keep in touch with the government officials, and maintaining a good relationship with stakeholders would be the strategic objectives. Leading towards good husbandry practice as possible feeding improved forage up to a certain level would be the operational objectives. The judicious use of means and resources to achieve clearly defined goals is the success factor i.e. the art of maximization and optimal utilization of resources and means for maximization productivity and profit. The total project cost is estimated to Nrs 96,55,350.0 for five years. Similarly, investment in capital and operating costs are speculated to be NRs 21,32,000.0 and 75,23,350.0 for five years. The projection of the payback period (2.14 years), internal rate of return (67.9%) and the benefit-cost ratio (1.8) and SWOT indicators show as a profitable business.

1. INTRODUCTION

It is an attempt to prepare a business plan to fulfill the partial requirements of the one-week training entitled "Officer Level Business Plan Training" conducted from June 13 to 19, 2018 at Directorate of Livestock Services Training and Extension (DLSTE), Hariharbhawan, Lalitpur.

Pig rearing is an important enterprise and the main source of income especially for poor landless (Acharya M. P., 2016). Traditionally, pig farming was associated with certain ethnic groups, but in recent years, knowing the scope and potentiality of the swine industry, other social groups are also started to join with the business plan to make it a commercial enterprise. Due to the gradual change in food habit, pork is becoming popular and the volume of production of pigs is about 1.2 million, which is about 7% of the total meat production of the country with an increment of 2.25% annually (Paudel, 2014). Furthermore, Acharya (2016) says the pork processing industries and meat sellers stated that the pork consumption trend has increased by 10% during the previous years. It is estimated that the rate of increment of pork is higher in Kathmandu

The government of Nepal (GoN) has prioritized to develop this sector commercially. Nepal Rastra Bank has directed to commercial banks to allocate minimum 25 % of total credit to priority sector, with includes a minimum of 10 % to agriculture (NRB, 2018), a pig is an integral part of the agriculture sector. Commodity office of swine and poultry under the Department of Livestock Services (DLS) has been conducting several types of training, workshops, with certain supports. Similarly, some projects have been supporting pig and pork production.

The observation and literature indicate that there is a greater scope of pig production in Balambu due to the availability of land on rent, a good opportunity of market and availability of infrastructure. Some of the pig farms have already been producing piglets and pork in this area. But they have been facing higher mortality due to lack of hygienic production system under the close observation of livestock professionals. The farm will be an alternative to the prevailing pig production practice.

1.1 Description of the farm

Name of organization: Modal Pig Production Center (MPPC)

Address : Balambu -8, Chandragiri.

Legal descriptions: The farm will be registered at Chandragiri Municipality and Office of the Small and Cottage Industry Development Committee at Tripureswor.

1.2 Organizational management /structure

The farm will be situated at the lower belt of the Balambu -8 in a joint venture that will include to an experienced local pig raiser, (S. M. Shyantana, Balambu –8), Livestock Professional (M. R. Adhikari) and an entrepreneur, (Shyam Yadav). The MPPC will have a small structure; one fulltime pig attendant and one seasonal pig attendant. Other activities cost will be linked to respective items. The Livestock Professional will involve in technical assistance marketing and participating in training and workshop. Fulltime attendant will be overall responsible for care and management including day to day operational activities. Accommodation will be provided at the center for the couple of attendants, which will look after the pig whole time. The opportunity will be provided to the spouse of attendants to work seasonally.

1.3 Description of product

Previously, pork was popular in the certain community only, but due to changing habit and lifestyle of urban people, it is becoming popular in other community also. The MPPC will produce good quality of piglets under close observation and intensive supervision of livestock professional in the intensive system as possible good husbandry practice.

1.4 Characteristics of the product

The product will be healthy and free from zoonotic diseases. The prevention measures; regular vaccination, drenching and laboratory tests for the certain disease of pigs and piglets will be adopted. More than 3-month aged piglets will be bought from a pig breeding farm of Kirtipur and grown it up to producing piglets. It is assumed

that the average body weight of sows and boar will be about more than 2 and 3 hundred kg respectively.

1.5 Farm status and future plan

The farm will be established in a joint venture with an initial number of 33 opening stock (30 sows and 3 boars). The firm will produce about 450 piglets annually. In addition, to some extent fattened sows will be produced. During the projected period about 2050 piglets will be produced. The extension of opening stock would be based on the performance of it.

2. MARKET AND MARKETING PLAN

2.1 Overall market

Actual consumption of meat and meat products in the country is influenced by religious, cultural and economic factors. For example, the *Newar, Gurung, Limbu, Rai, Tamang, and Magar*, in particular, are avid consumers of pork; a report portrays about only 2% of the population is estimated to be vegetarian in Kathmandu valley. However, in recent years, consumers are beyond the religion and cultural value to eat pork. Hence, meat demand in the valley is increasing along with the increase in population as well as in income. The food habit is also changing due to the increase in purchasing power of the people and the availability of diversified items of pork. Market survey says the demand for piglets is growing annually. Higher demands lead to increase price of piglets and the pork consumption trend (10%) during the previous years (Acharya, 2016).

2.2 Specific market

Pigs are being reared in outside of the ring road. There are a few small-scale pig farms are under operation. These farms need piglets for fattening. Deficit demand is even fulfilled from the outside of the valley. The scenario indicates that there is not any problem in the market for produced piglets. Acharya, (2016) says daily selling of pork in major hubs of Nepal is 23.84 metric tons with a total value of NRs 7,175,000.0, out of these Kathmandu alone covers 50 % of the total value.

2.3 Market needs and growth trend of piglets

It is reported that the requirement of piglets is fulfilled from the outside of the valley. In recent years the demand for piglets is increasing by 7% and more than that. The demand increases in *Thulo Dashain, Chaite Dashain, Purnima and Sankranti* festivals. Butchers of Kirtipur, Chandragiri and some extent of adjoining villages of Dhading district are the specific customers for the fattened pigs. Pig producers try to buy piglets to address these occasions' demand. Production practice of pig is traditional, which lacks regular vaccination, drenching and laboratory services. Hence, the center will produce good quality of piglets.

2.4 Competition

Most of the piglets are imported from the out of the valley. Only limited numbers of piglets are produced within the valley for fattening. However, 5 to 10 sows are reared by a few pig growers in Kirtipur and Chandragiri area. They are producing piglets traditionally.

2.5 Target market and potential customers

The buyer would come by the farm from the urban as well as a local area to purchase the piglets. The piglets would be sold on bargaining pricing (not less than 5.5 and 6 thousand for female and male piglets respectively). It is found that the average purchasing price of piglets is 6 thousand in the market. It is assumed that the targeted market for the produced piglets would be Kirtipur, Chandragiri and adjoining part of Dhading.

2.6 Market analysis

Purchasing capacity and increasing awareness of the people regarding hygienic food intake leads to produce good quality of piglets and pork. The demand is also affected by the festival time and culture of habitats. Considering these factors the market analysis has been done as below;

| | New product | Old product |
|-------------|--|--|
| New product | <ul style="list-style-type: none"> • Good quality piglets • Healthy piglets • Leading to good husbandry practice. | <ul style="list-style-type: none"> • Inform about the quality of the piglets and zoonotic diseases. |
| Old market | <ul style="list-style-type: none"> • Inform and assure to the piglet's buyers about new, free from zoonotic diseases due to growing under the direct supervision of livestock professional. | <ul style="list-style-type: none"> • Lack of good quality and healthy piglets. |

2.7 Marketing plan

The demand for piglet and pork are increasing yearly. Within the year the price of meat and meat products increases in festival time. So, the fattened pigs will be sold by a festival period such as; *Thulo Dashain, Chaite Dashain, Chaite Purnima, Jestha Purnima, Saune Sankranti, Maghe Sankranti, and Gothe Mangal*. To sell in these periods pig growers targets to buy piglets to match it. First-year about 225 piglets will be produced and sold. Furthermore, about 450 piglets will be sold annually. List of pig grower will be prepared and updated to keep in touch with them periodically.

2.8 Promotional plan

Marketing promotion is the most important factor for enterprises. Due to the involvement of livestock professional in this enterprise, the opportunity to advertise our product by the governmental agencies will be coped. Launching websites and corresponding online would help the marketing of piglets.

2.9 Distribution channel

The products will be sold from the farm. There will not be any extra channel for this purpose. However, e-marketing would be launched for making easier for the buyers.

3. PRODUCTION PLAN / OPERATION

3.1 Startup operation

- Analyzing the obtained information from sightseeing and literature reviews.
- Making discussion to stakeholders.

- Making assurance of hiring land from the local people.
- Making agreement or memorandum of understanding among the business partner for launching the business.
- Moving ahead for the registration process.
- Developing management team and responsibilities.
- Hiring the helpers/laborers

3.2 Facilities

The MPPC will be located at the lower belt of Balambu -8 of Chandragiri, Kathmandu. About 2 ropanies for pasture land and 3 ropanies for civil works will be hired. Fencing would be made for biosecurity purpose. The opening stock would be 33 (3 boar and 30 sows). About 450 piglets would be produced annually. Sheds will be roofed from the color either tin or plastic-sheet. The floor will be cemented and crates will be made from GI pipes.

3.3 Rearing practices

The intensive system would be followed.

I. Feed

The ration will range from soft fiber contained grasses; Berseem, Moringa, peas, to concentrate. *Kudo* refers to cooked feed containing flour, pumpkins, potato, radish, and other vegetables. Pandit, (2013) reported that the combination of homemade a concentrate with chopped green leaves cooked together them feed to pigs give maximum return to rural farmers as small scale pig farming. The dietary mash concentrates included locally available rice police, rice bran, rice chafer, wheat bran, kitchen waste and green leaves (*Latte* leaves, *Rao* leaves, Cauliflower leaves, *Bethe* shrubs, *Jalkumbhi*, *Kachu* shrubs, *Mane* shrubs, *Gagletto* shrubs, etc.).

Feed ingredients will be bought from the market and prepared using by mixture at the center. Some hormone-like growth stimulators, antibiotic feed additives will be included in feed including mineral supplements.

II. Insurance, vaccination, medication, and supervision

Most of the pig producers in the proposed area were found unknown about pig insurance. Gaire (2017) carried out research in Makawanpur and Nawalparasi districts in inner Terai and Kaski and Kathmandu from mid-hills to explore the issues of pig insurance in Nepal and found that in overall, 43 % of the respondents have knowledge about livestock insurance, 30 % of the respondents were aware of pig insurance and only 13% of the respondents had insured their pig enterprise. However, all of the pigs at the farm will be insured to bear the possible risks.

Vaccination and medication are required to prevent and treat disease. Each pig will be vaccinated according to requirements. Anthelmintics will be used to treat/prevent internal parasites. Similarly, medicine will be used for external parasites. NRs 1200 will be spent for this purpose per pig per year. Supervision by the livestock professional will be implemented as at least two days a week. The frequency of the supervision will be changed according to its requirement.

III. Measures of lowering cost of production

There are some measures that will reduce cost of production of pig;

- Keeping genetically superior breed of pig.
- Reducing longer farrowing interval period.
- Supplying up to certain level of good forage.
- Fixing or replacing broken feeders on time to prevent the loss of feed.
- Keeping in mind feed loss during feed.
- Feeding different feed according to age and requirement.
- Selling piglets on time and focusing for breeding purpose.
- Bench marking farm's biological and financial performance.
- Culling unproductive pig on time.
- Taking prevention measure for inbreeding.
- Focusing on record keeping.

3.6 Positive aspects and possible risks

Positive aspects

- Supporting of farms with soft loans and grants by different levels of government organizations.
- The government has been encouraging peasants and entrepreneurs to rear pigs by providing financial support in insurance.
- Participating in training and tours specially conducted by the local authority.

Possible risks

- The outbreak of diseases and profit of the farm may be affected in case of a sudden change in the government economic policy.
- Hardy procedure of the soft loan.
- Pork husbandry is not accepted by the most of the communities.

4. STRATEGIES

4.1 Vision

To help in increasing availability of piglets in Balambu and be a well known of good quality of piglets producer center.

4.2 Mission

The farm will increase the piglets in the Balambu area through a combination of high quality of supplying piglets.

4.3 Goal

- Supply regularly the healthy piglets to pig growers in the community.

4.4 Objectives

I. General objectives

- Analyze the financial aspect of piglet production.

- Demonstrate to rear piglet production.
- Ensure the high quality of the product.

II. Strategic objectives

- Make involvement of technical personnel and local people on the farm to tackle technical and locally emerged problems respectively.
- Sell weaned piglets especially to pig growers and governmental organization as well as non-governmental organization.
- Stay keep in touch to stakeholders as well as personnel of government.
- Increasing involvement in training, visit, and tour conducted by the governmental organizations.

III. Operational objectives

- Drench and get laboratory service regularly.
- Assign social, cultural and feed related responsibility to the local partner.
- Assign technical responsibility to livestock professional.
- Growing Moringa and other forage.
- Provide feed additives.

4.5 Strengths, weaknesses, opportunities and threats (SWOT) analysis

Piglets production is an all-inclusive activity, related to meat animals; care and management, housing, medication, and feeding. Before making the decision, whether to invest in livestock farming or not, one should carefully analyze the associated risk factors, which is made in this business plan. A SWOT analysis helps in analyzing these factors, which can play an important role in making the decision.

4.5.1 Strengths

- Source of farmyard manure.
- Working in team; high experienced pig raiser, livestock professional and entrepreneur.
- Having capacity to grow and adapt within the pig farming entrepreneurs.

4.5.2 Weaknesses

- High cost of feed.

4.5.3 Threats

- The entry of new entrepreneurs.
- The sudden change in government rules and regulations.
- Different zoonotic diseases outbreak may occur.
- Piggery manure and effluent may threaten human health.
- Environment pollution from manure accumulation; water, land and air pollution.

4.5.4 Opportunities

- Higher demand for meat and meat products.
- Pig production is the prioritized program of the government in which various supports are available for farmers including insurance support.
- Farmyard manure can be used for agriculture practice.
- Lack of competitor farm and availability of laborer locally.
- NRB has directed to allocate the loan amount to the agriculture sector as a soft loan.

On the basis of above information of SWOT analysis, an inference can be drawn that the strengths and opportunities outweigh the weaknesses and threats.

4.5 Key success factors

Many studies show the potentiality of pig production in semi-urban areas. Weight, growth, and efficiency are major factors influencing the economical meat production. Litter production is highly complex as it includes farm management, feeding, housing diseases control and hygienic production. Farm management practices include providing nutritious feed, comfortable shed/barn with well ventilated, clean drinking water, and administering of drenching and vaccination regularly including laboratory services. The judicious use of means and resources to achieve clearly defined goals is the success factor i.e. the art of maximization and optimal utilization of resources and

means for maximization productivity and profit. The selection of piglets during the purchasing period is also a crucial factor which needs to get technical assistance from the livestock professionals and experts. The multiplier effect of the above consideration may lead to successful and profitable farms. In addition, the following points are taken as key success factors.

- Good quality of piglets and increased litter size.
- Involvement of local people and technical personnel.
- Experienced manpower.
- Strong coordination with government organizations and other stakeholders as well as local personnel

4.6 Competitor analysis

There is not any commercial pig production farm under operation. So, it may not need to analyze it immediately. However, a few pig producers are rearing some pig traditionally for their livelihood.

4.7 Quality assurance

To make a qualitative product our slogan will be “quality is our duty” for that regular vaccination, drenching/ deworming (at least 3 times a year), and controlling external parasites will be taken into account. Drenching, vaccination and laboratory support will enhance the health piglets and pigs.

5. FINANCIAL PLAN

5.1 Cash flow

| Items | Units | Unit cost (Rs.) | Quantity | | | | | Value (Rs.) | | | | |
|--|--------|-----------------|----------|--------|--------|--------|--------|-------------|---------|---------|---------|---------|
| | | | 2019 | 2020 | 2021 | 2022 | 2023 | 2019 | 2020 | 2021 | 2022 | 2023 |
| Investment Costs | | | | | | | | | | | | |
| A. Civil works/construction | | | | | | | | | | | | |
| 1. Shed I for sow (10 X 15 m) | Sqmt | 2,500 | 150 | | | | | 375,000 | - | - | - | - |
| 2. Shed I for sow and boar (10 X 12 m) | Sqmt | 2,500 | 120 | | | | | 300,000 | - | - | - | - |
| 3. Shed for weaned piglets (10 X 15) X 2 cum store | Sqmt | 2,500 | 300 | | | | | 750,000 | - | - | - | - |
| 4. Farrowing pen | Sqmt | 2,500 | 22 | | | | | 55,000 | - | - | - | - |
| 5. Sick pen | Sqmt | 2,500 | 8 | | | | | 20,000 | - | - | - | - |
| 6. Farrowing crate in the farrowing pen | LS | 5,000 | 8 | | | | | 40,000 | - | - | - | - |
| 7. Electricity fitting | LS | 5,000 | 8 | | | | | 40,000 | - | - | - | - |
| 8. Fencing for biosecurity | LS | 100,000 | 1 | | | | | 100,000 | - | - | - | - |
| Sub- Total | | | | | | | | 1,680,000 | - | - | - | - |
| Machinery and Equipment | | | | | | | | | | | | |
| Grander/mixture machines/ accessories fixing | Set | 200,000 | 1 | | | | | 200,000 | - | - | - | - |
| Water tanks (10000 lit cap) and pipes fittings | LS | 100,000 | 1 | | | | | 100,000 | - | - | - | - |
| Feeders and drinkers | LS | 100,000 | 1 | | | | | 100,000 | - | - | - | - |
| Other equipment | LS | 12,000 | 1 | | | | | 12,000 | - | - | - | - |
| Wooden boxes in the farrowing pen with bulbs | LS | 5,000 | 8 | | | | | 40,000 | - | - | - | - |
| Sub- Total | | | | | | | | 452,000 | - | - | - | - |
| Total Investment | | | | | | | | 2,132,000 | - | - | - | - |
| Operating Cost and other inputs | | | | | | | | | | | | |
| Feed ingredients | Kg | 25 | 39,105 | 39,105 | 38,610 | 38,610 | 38,610 | 977,625 | 977,625 | 965,250 | 965,250 | 965,250 |
| Medicines/vaccines etc | LS | 1,200 | 33 | 33 | 33 | 33 | 33 | 39,600 | 39,600 | 39,600 | 39,600 | 39,600 |
| Forage inputs and cultivation | Ropani | 4,000 | 2 | 2 | 2 | 2 | 2 | 8,000 | 8,000 | 8,000 | 8,000 | 8,000 |
| Purchasing Boar | No. | 15,000 | 3 | | | | | 12,000 | - | - | - | - |
| Purchasing of gilts | No. | 5,800 | 30 | | | | | 120,000 | - | - | - | - |
| Farm reg. | LS | 10,000 | 1 | | | | | 10,000 | - | - | - | - |
| Land rent | Ropani | 6,000 | 5 | 5 | 5 | 5 | 5 | 20,000 | 22,000 | 23,000 | 24,000 | 25,000 |

| Items | Units | Unit cost (Rs.) | Quantity | | | | | Value (Rs.) | | | | |
|--|--------|-----------------|----------|--------|--------|--------|--------|-------------|-----------|-----------|-----------|-----------|
| | | | 2019 | 2020 | 2021 | 2022 | 2023 | 2019 | 2020 | 2021 | 2022 | 2023 |
| Sub- Total | | | | | | | | 1,187,225 | 1,047,225 | 1,035,850 | 1,036,850 | 1,037,850 |
| Human Resources Cost | | | | | | | | | | | | |
| Pig attendants | Person | 144,000 | 1 | 1 | 1 | 1 | 1 | 144,000 | 144,000 | 144,000 | 144,000 | 144,000 |
| Seasonal Employment | | | | | | | | | | | | |
| Pig attendants or for forage cultivation | Person | 72,000 | 1 | 1 | 1 | 1 | 1 | 72,000 | 72,000 | 72,000 | 72,000 | 72,000 |
| Sub- Total | | | | | | | | 216,000 | 216,000 | 216,000 | 216,000 | 216,000 |
| Lease, Power, Fuel & Utilities | | | | | | | | | | | | |
| Land for forage cultivation | Ropani | 2 | 10,000 | 11,000 | 12,000 | 13,000 | 13,500 | 20,000 | 22,000 | 24,000 | 26,000 | 27,000 |
| Land for the shed and another purpose (Ropani) | Ropani | 3 | 10,000 | 11,000 | 12,000 | 13,000 | 13,500 | 30,000 | 36,300 | 39,600 | 42,900 | 44,550 |
| Electricity (Nrs 1000 / per month initially) | LS | 1 | 12,000 | 12,000 | 12,000 | 13,000 | 13,500 | 12,000 | 12,000 | 12,000 | 13,000 | 13,500 |
| Water tanks | LS | 1 | 12,000 | 12,000 | 12,000 | 13,000 | 13,500 | 12,000 | 12,000 | 12,000 | 13,000 | 13,500 |
| Sub- Total | | | | | | | | 42,000 | 48,300 | 51,600 | 55,900 | 58,050 |
| Marketing & Distribution Costs | | | | | | | | | | | | |
| Launching websites /training/workshop attaining | LS | 1 | 50000 | 50000 | 50000 | 50000 | 50000 | 50,000 | 50,000 | 50,000 | 50,000 | 50,000 |
| Stationery and other inputs | LS | 1 | 10000 | 1000 | 10000 | 10000 | 10000 | 10,000 | 1,000 | 10,000 | 10,000 | 10,000 |
| Insurance amount beard by farm | LS | 1 | 10500 | 10500 | 10500 | 10500 | 10500 | 10,500 | 10,500 | 10,500 | 10,500 | 10,500 |
| Unforeseen expenditure | LS | 1 | 40000 | 40000 | 40000 | 40000 | 40000 | 40,000 | 40,000 | 40,000 | 40,000 | 40,000 |
| Communication | LS | 1 | 12000 | 12000 | 12000 | 12000 | 12000 | 12,000 | 12,000 | 12,000 | 12,000 | 12,000 |
| Sub- Total | | | | | | | | 122,500 | 113,500 | 122,500 | 122,500 | 122,500 |
| Maintenance Costs | | | | | | | | | | | | |
| Civil Structures (1.5% of Structures) | | | | | | | | 25,200 | 25,200 | 25,200 | 25,200 | 25,200 |
| Machinery & Equipment (5% of Machinery) | | | | | | | | 22,600 | 22,600 | 22,600 | 22,600 | 22,600 |
| Sub- Total | | | | | | | | 47,800 | 47,800 | 47,800 | 47,800 | 47,800 |
| Total Operating Cost | | | | | | | | 1,615,525 | 1,472,825 | 1,473,750 | 1,479,050 | 1,482,200 |
| Tax on profit | | | | | | | | - | - | 578,111 | 631,270 | 682,352 |
| Total Cash Outflow (Investment + Operating Cost+ Tax) | | | | | | | | 3,747,525 | 1,472,825 | 2,051,861 | 2,110,320 | 2,164,552 |
| Revenues | | | | | | | | | | | | |
| Piglets selling (male) | | | | | | | | 678,000 | 1,417,782 | 1,488,671 | 1,563,105 | 1,641,260 |
| Piglets selling (female) | | | | | | | | 616,000 | 1,241,884 | 1,303,978 | 1,369,177 | 1,504,488 |
| Boars selling at the end of the scheme | | | | | | | | | | | | 273,489 |
| Sows selling at the end of the scheme | | | | | | | | | | | | 2,187,911 |
| Manure, feed sacks and manure | LS | 1 | 50,000 | 53,000 | 56,000 | 58,000 | 60,000 | 50,000 | 53,000 | 56,000 | 58,000 | 60,000 |

| Items | Units | Unit cost (Rs.) | Quantity | | | | | Value (Rs.) | | | | |
|--------------------------------------|-------|-----------------|----------|------|------|------|------|-------------|-----------|-----------|-----------|-----------|
| | | | 2019 | 2020 | 2021 | 2022 | 2023 | 2019 | 2020 | 2021 | 2022 | 2023 |
| Culled sows selling | LS | | | | | | | - | 630,000 | 661,500 | 694,575 | - |
| Total Revenues (Net of VAT & duties) | | | | | | | | 1,344,000 | 3,342,666 | 3,510,149 | 3,684,856 | 5,667,149 |
| Net Cash Flows | | | | | | | | (2,403,525) | 1,869,841 | 1,458,288 | 1,574,536 | 3,502,596 |
| Cumulative Cash Flow | | | | | | | | (2,403,525) | (533,684) | 924,604 | 2,499,140 | 6,001,736 |
| Discount Factor (7%) | 1.07 | | | | | | | 0.9346 | 0.8734 | 0.8163 | 0.7629 | 0.7130 |
| Discounted Net Cash Flow | | | | | | | | (2,246,285) | 1,633,191 | 1,190,397 | 1,201,206 | 2,497,303 |
| Discounted Cumulative Cash Flow | | | | | | | | (2,246,285) | (613,094) | 577,304 | 1,778,510 | 4,275,812 |
| NPV @ 7% | | | | | | | | | | | | 4,275,812 |
| Payback Period | | | | | | | | | | | | 2.14 |
| IRR | | | | | | | | | | | | 67.93% |
| BCR | | | | | | | | | | | | 1.82 |

Note

- Working capital will be managed from the three partners and cash-inflow will be utilized in the respective years.
- The basic cash flow should include all the cash inflow and outflow from the business.
- The cash outflow from operating cost and cash inflow from revenues may differ from profit and loss account as profit and loss account are prepared on an accrual basis (Based on transaction, not on a cash basis).
- Purchasing of piglets can also be calculated under the heading of investment cost.

Calculation of Working Capital Requirement

- The salvage or remaining value of fixed assets is the money that could be received by selling the fixed assets at the end of the project.
- Discount factor represents the time value of money.
- The net present value represents the actual worth of the project after considering the time value of money
- IRR represents the discount factor where the net present value is zero.
- The payback period is the period in years for the project to return the investment made.

5.2 Profit and loss account

| Description | Value | | | | | Remarks |
|----------------------------------|-----------|-----------|-----------|-----------|-----------|---------|
| | 2019 | 2020 | 2021 | 2022 | 2023 | |
| Total Annual Revenues | 1,344,000 | 3,342,666 | 3,510,149 | 3,684,856 | 5,667,149 | |
| Value Added Tax | | | | | | |
| Net revenue | 1,344,000 | 3,342,666 | 3,510,149 | 3,684,856 | 5,667,149 | |
| Cost of revenue (Operating Cost) | (605,000) | 1,371,575 | 1,369,913 | 1,367,422 | 3,179,441 | |
| Operating profit (Gross) | 1,949,000 | 1,971,091 | 2,140,236 | 2,317,435 | 2,487,708 | |
| Depreciation | 213,200 | 213,200 | 213,200 | 213,200 | 213,200 | |
| Profit before finance charges | 1,735,800 | 1,757,891 | 1,927,036 | 2,104,235 | 2,274,508 | |
| Finance charges | - | - | - | - | - | |
| Profit before tax | 1,735,800 | 1,757,891 | 1,927,036 | 2,104,235 | 2,274,508 | |
| Income tax@30% | - | - | 578,111 | 631,270 | 682,352 | |
| Net profit | 1,735,800 | 1,757,891 | 1,348,926 | 1,472,964 | 1,592,156 | |
| Dividend paid | | | | | | |
| Retained earning | 1,735,800 | 1,757,891 | 1,348,926 | 1,472,964 | 1,592,156 | |
| Ratio Analysis | | | | | | |
| Return on Investment (ROI) % | 81% | 82% | 63% | 69% | 75% | |
| Gross margin (GM) % | 145% | 59% | 61% | 63% | 44% | |
| Net profit (NP) % | 129% | 53% | 38% | 40% | 28% | |

Basis for Calculation

ROI= Net profit/ Investment*100

GM= Net Operating Profit (Gross)/ Total Revenue*100

NP = Net profit/ Total Revenue*100

Note

- The profit and loss account should show the revenue, cost, and profit made by the project that is a financial performance for each year.
- The profit and loss account is accounted on an accrual basis (Based on the actual transaction rather than on receipt or payment of cash)
- The revenue should be based on the marketing/sales plan and production plan of the project

5.3 Calculation of depreciation

| Particular | 2019 | 2020 | 2021 | 2022 | 2023 | Remarks |
|---|-----------|-----------|-----------|-----------|-----------|---------|
| Opening Balance | | | | | | |
| Land | | | | | | |
| Civil Work | 1,680,000 | 1,512,000 | 1,344,000 | 1,176,000 | 1,008,000 | |
| Machinery and Equipment | 452,000 | 406,800 | 361,600 | 316,400 | 271,200 | |
| Less: Depreciation | | | | | | |
| Depreciation on Civil Work (5%- 20 years) | 168,000 | 168,000 | 168,000 | 168,000 | 168,000 | |
| Depreciation on Machinery & Equipment (10%- 10 years) | 45,200 | 45,200 | 45,200 | 45,200 | 45,200 | |
| Less: Disposal | | | | | | |
| Closing Balance | | | | | | |
| Land | | | | | | |
| Civil Work | 1,512,000 | 1,344,000 | 1,176,000 | 1,008,000 | 840,000 | |
| Machinery and Equipment | 406,800 | 361,600 | 316,400 | 271,200 | 226,000 | |

5.4 Balance sheet

| Description | Value (Rs.) | | | | | Remarks |
|------------------------------|-------------|-----------|-----------|-----------|-----------|---------|
| | 2019 | 2020 | 2021 | 2022 | 2023 | |
| Assets | | | | | | |
| Current Assets | | | | | | |
| Cash | (1,809,913) | 59,928 | 1,518,216 | 3,092,752 | 6,595,348 | |
| Accounts Receivable-Debtors | | | | | | |
| Inventory Stock | 2,220,525 | 2,321,775 | 2,425,613 | 2,537,241 | 840,000 | |
| Total Current Assets | 410,613 | 2,381,703 | 3,943,829 | 5,629,993 | 7,435,348 | |
| Long-term Assets | | | | | | |
| Net Fixed Assets | 1,918,800 | 1,705,600 | 1,492,400 | 1,279,200 | 1,066,000 | |
| Total Long Term Assets | 1,918,800 | 1,705,600 | 1,492,400 | 1,279,200 | 1,066,000 | |
| Total Assets | 2,329,413 | 4,087,303 | 5,436,229 | 6,909,193 | 8,501,348 | |
| Paid-in-Equity | 593,613 | 593,613 | 593,613 | 593,613 | 593,613 | |
| Retain Earnings | 1,735,800 | 3,493,691 | 4,842,616 | 6,315,580 | 7,907,736 | |
| Total Equity & Reserve | 2,329,413 | 4,087,303 | 5,436,229 | 6,909,193 | 8,501,348 | |
| Total Liabilities and Equity | 2,329,413 | 4,087,303 | 5,436,229 | 6,909,193 | 8,501,348 | |
| Revenue/ Fixed Assets (%) | 70% | 196% | 235% | 288% | 532% | |
| Return on Assets (%) | 58% | 82% | 65% | 53% | 67% | |

5.5 Inventory

| Particular | Year | | | | | Remarks |
|------------------------------------|------------------|------------------|------------------|------------------|----------------|---------|
| | 2019 | 2020 | 2021 | 2022 | 2023 | |
| Boars values | 225,000 | 236,250 | 248,063 | 260,466 | | |
| Sows values | 1,800,000 | 1,890,000 | 1,984,500 | 2,083,725 | | |
| Feed ingredients | 195,525 | 195,525 | 193,050 | 193,050 | | |
| Salvage value from infrastructures | | | | | 840,000 | |
| Total | 2,220,525 | 2,321,775 | 2,425,613 | 2,537,241 | 840,000 | |

Note

- It is assumed that all the business transactions will be done in cash. As a result, there are no debtors or payables.
- We have not calculated the current ratio as there is no current liability
- Return on assets: Total Revenue/ Total Assets
- Not calculated debt/equity ratio as no debt has been taken from outside.
- Paid inequity represents the money invested by the proponent for business development and working capital.
- Cash and Bank Balances represent the equity paid, grants and net cash flow.

5.6 Summary of projection

| Particular | I | II | III | IV | V | Total |
|---------------------------------|---------|---------|---------|---------|---------|----------|
| Total investment in capital | 2132000 | | | | | 2132000 |
| Total operating cost | 1615525 | 1472825 | 1473750 | 1479050 | 1482200 | 7523350 |
| Total cost | 3747525 | 1472825 | 1473750 | 1479050 | 1482200 | 9655350 |
| Total revenue | 1344000 | 3342666 | 3510149 | 3684856 | 5667149 | 17548820 |
| BCR | | | | | | 1.82 |
| Total no. of piglets production | 225 | 450 | 450 | 450 | 450 | 2025 |
| Per unit cost of piglets | | | | | | 4767.231 |
| Per unit revenue from piglets | | | | | | 8664.551 |

5.7 Cost table

| Items | Units | Unit cost (NRs.) | Required Quantity | Total Cost (Quotes) | Shared to Eligible Items (Rs.) | | | | Business contribution to Ineligible Items |
|---|--------|------------------|-------------------|---------------------|--------------------------------|---|-----------|---|---|
| | | | | | Business Contribution | % | Bank Loan | % | |
| Investment Costs | | | | | | | | | |
| Civil Works | | | | | | | | | |
| Shed and other works | | | | 1,680,000 | | | | | |
| Sub- Total | | | | 1,680,000 | | | | | |
| Machinery and Equipment | | | | | | | | | |
| Equipment and other | | | | 452,000 | | | | | |
| Sub- Total | | | | 452,000 | | | | | |
| Other Investment (Description) | | | | | | | | | |
| Limited " <u>working Capital</u> " to cover <u>materials inputs</u> which are required to bring the business in operation (In this case it is estimated for 6 months) | Months | 98,935 | | | | | | | |
| Sub- Total | | | | | | | | | |
| Total Business Development Cost (NRs.) | | | | 2,132,000 | | | | | |
| Grand Total | | | | 2,132,000 | | | | | |

5.8 Stock and other projection

| Particular | Year | | | | | Remarks |
|--|--------|---------|---------|---------|---------|---------|
| | I | II | III | IV | V | |
| A. Herd size | | | | | | |
| Total opening stock pig | 33 | 33 | 33 | 33 | 33 | |
| Opening stock of boar | 3 | 3 | 3 | 3 | 3 | |
| Opening stock of gilt | 30 | 30 | 30 | 30 | 30 | |
| Mortality of adult (3%) | 1 | 1 | 1 | 1 | 1 | |
| Sow after mortality | 29 | 29 | 29 | 29 | 29 | |
| No. of farrowing | 25 | 25 | 25 | 25 | 25 | |
| No. of piglets | 250 | 500 | 500 | 500 | 500 | |
| No. of piglets after mortality (10%) | 225 | 450 | 450 | 450 | 450 | |
| No. of male piglets for saleable | 113 | 225.0 | 225.0 | 225.0 | 225.0 | |
| No. of female piglets for saleable | 112 | 225.0 | 225.0 | 225.0 | 225.0 | |
| B. Feed requirements and its per-unit price | | | | | | |
| Required concentrate (3,5 kg / pig for 6 month) kg | 20790 | 20790 | 20790 | 20790 | 20790 | |
| Required concentrate (3 kg / pig for 6 month) kg | 18315 | 18315 | 17820 | 17820 | 17820 | |
| Total required concentrate (kg) | 39105 | 39105 | 38610 | 38610 | 38610 | |
| Raw materials cost of feed ingredients Nrs | 977625 | 1006954 | 1037162 | 1068277 | 1100326 | |
| C. Medicines/vaccines etc | | | | | | |
| Medical cost (NRs), per unit | 1200 | 1236 | 1273 | 1311 | 1351 | |
| Medical expenses (NRs) | 39600 | 40788 | 42012 | 43272 | 44570 | |
| D. Selling price | | | | | | |
| Male piglets per unit | 6000 | 6300 | 6615 | 6946 | 7293 | |
| Female piglets per unit | 5500 | 5775 | 6064 | 6367 | 6685 | |
| Culled sows price per unit | 60000 | 63000 | 66150 | 69458 | 72930 | |
| No. of sows (culled) | | 10 | 10 | 10 | | |
| No. of female for selling after stock replacement | 112 | 215.0 | 215.0 | 215.0 | 225.0 | |
| E. Revenue | | | | | | |
| Selling male piglets | 678000 | 1417782 | 1488671 | 1563105 | 1641260 | |
| Selling female piglets | 616000 | 1241884 | 1303978 | 1369177 | 1504488 | |
| Selling sows at the end of the scheme | | | | | 2187911 | |
| Selling boar at the end of the scheme | | | | | 180000 | |
| Selling culled sows | | 630000 | 661500 | 694575 | 0 | |
| F. Insurance | | | | | | |
| Amount for insurance of boars | 90000 | 90000 | 90000 | 90000 | 90000 | |
| The amount for insurance of sows | 750000 | 750000 | 750000 | 750000 | 750000 | |
| Amount for premium 5% of total insurance amount | 42000 | 42000 | 42000 | 42000 | 42000 | |
| Amount granted by government | 31500 | 31500 | 31500 | 31500 | 31500 | |
| Amount beard by farm | 10500 | 10500 | 10500 | 10500 | 10500 | |

5.9 Techno-economic parameters

| SN | Description | Average | Remarks |
|----|---|-----------------|----------------------|
| A. | Production Traits | | |
| | Farrowing interval (Months) | 6.0 | |
| | Farrowing %age | 86.2 | |
| | Average no. of litter per farrowing | 12.0 | |
| | No. of farrowing per year | 2.0 | 1 for the first year |
| | Sex ratio | 1.0 | |
| | Mortality (%) Adults | 3.0 | |
| | Mortality (%) piglets | 10 | |
| | Saleable age of piglets (months) | 2.0 | |
| B. | Expenditure norms / Space requirement (sqmt.per head) | | |
| | Boar or sow | 8.0 /8.0 | |
| | Hog/Gilts | 2.5 | |
| | Kids | 1.0 | |
| | a) Cost of green fodder cultivation (Rs./ropani/year) | 4,000 | |
| | b) Land required (ropani) | 5 | |
| | b) Land rent/ ropani | 4000 | |
| | Labour (No.), fulltime and seasonal | 1 and 1 | |
| | Labor wages (Rs.per month) fulltime or seasonal | 12000 and 12000 | |
| | Insurance (5 % of the insurance value) | | |
| | Boer or sow | 10% and 10% | |
| | Veterinary aid (Rs./adult/year) | 1200 | |
| | Water, electricity and other misc. expenses (Rs./adult/month) | 50 | |

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