



ANALYSIS OF **PIG AND PORK** MARKET SYSTEM IN NEPAL



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“This study was carried out by Mr. Krishna Acharya and Mr. Bhola Shankar Shrestha, through PEAN under SAMARTH-NMDP Pig sector project implemented by CEAPRED”.

Foreword

This study commissioned by Pig Entrepreneurs Association of Nepal (PEAN) was to analyze the market situation on pig and pork in the country on the backdrop of the marketing constraints of pig and pork following the devastating earthquake and border blockade, which resulted to severe decline in the market of pigs, pork and pig feed in the country. It was aimed to study the market systems and its dynamics, so that the short term measures and long term strategies could be recommended and adopted for promotion of pig and pork industry in the country for the benefit of farmers, entrepreneurs and consumers. The study report includes the market assessment in the major pig pockets of the country, namely Jhapa and Sunsari in the eastern, Kathmandu valley, Nuwakot and Rasuwa in the central, Kaski in the western and Banke and Bardiya in the mid-western regions. Primary market information were gathered through interaction/ interview with the pig producer farmers, pork sellers (butcher, whole seller, retailers), departmental stores, processing industries and hotel/restaurants through checklist, while secondary information were collected from respective DLSOs, livestock quarantine offices, Livestock and Poultry Market Promotion Directorate and Central Pig and Poultry Promotion Office (CPPPO) of the Department of Livestock Services(DLS) and Trade Promotion Centre.

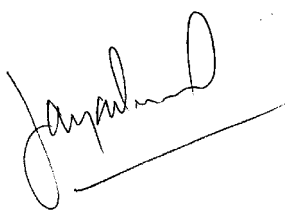
The study report recommends that, to increase the share of pork in the internal market and for export, there is an urgent need for quality improvement of the products, hence the slaughter houses should be established in the major production hubs and meat inspection and slaughter house act should be implemented by the government to produce certified quality pork for the market. Good husbandry practice (GHP) and good manufacturing practice (GMP) should be adopted by the producers and processors to meet the international standards. Pig and pork export can be possible with the implementation of meat inspection and stamping practices by the government and adoption of GHP and GMP by the producers and processors. Disease free status of the animals is crucial for the export market. DLS has initiated appropriate measures to achieve this status and is hopeful to get the required support from other partners as well. To make the production system self dependent, it is also necessary to produce the major feed ingredients (maize and Soya) within the country, so that the amount of import could be minimized. Regulatory mechanisms for quality feed production and adherence to quality standards needs to be strengthened. Hence, a concerted effort of different market players, supporting organizations and the government is required to develop the sector to the required standard for increasing the volume of internal consumption and export to the potential buyer countries. DLS acknowledges the support provided by different organizations and appreciates the efforts and financial contribution of SAMARTH/CEAPRED pig project to carry out this study, which will be of immense help to the department to plan our future strategy on pig sector development and its market promotion.



Dr. Keshav P. Premi
Director General, Department of Livestock Services

Foreword

The pig sector has not been a priority livestock commodity in the recent past in the plans and programs of the Government of Nepal, thus, this sector has remained behind in the development programs of the government and the donors. However, during the recent years, there has been some changes in the policy of the government and the donors especially after the implementation of the Pig sector program of DFID, UK funded SAMARTH program implemented by Centre for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED), which not only played a catalytic role to organize the pig producers, processors and other actors in the value chain but also to introduce new technologies, skills and inputs for the overall improvement of the whole sector. The pig sector has considerable potential to contribute for the economic upliftment of the economically disadvantaged communities as pig farming has traditionally been adopted by these communities. In addition, this sector has also the potential to develop as a commercial enterprise for fulfilling the national requirement of the pork and pork items. With the devastating earthquake and the economic blockade, this sector also faced severe setback in the whole value chain of pig sector, which affected the market and marketing system significantly. Hence, this study was carried out in the back drop of these external calamities and events not only to assess the affect of these disasters on pig and pork markets and marketing but also to explore the future prospects of this sector. I believe that the study will provide not only the valuable insights of the marketing situation of pig and pork sector, the effect of external calamities on this sector but also on the future strategy to be adopted to make this sector robust, viable and self-dependent to cater to the need of the nation on pigs, pork and the overall meat sector.



Jaya M. Khanal
Executive Director
CEAPRED



बंगुर व्यवसायी संघ नेपाल

Pig Entrepreneur Association Nepal

केन्द्रीय कार्यालय: काठमाडौं, सम्पर्क नं. : ९७४११३८३१४, ९८४१२६५४७१

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नेपालमा पशुपन्छी विकास मन्त्रालय अन्तर्गत रहेको बंगुर व्यवसायबाट स्वदेश भित्रै रोजगारी श्रृजना तथा अर्थ उपार्जन हुँदै गईरहेको अवस्थामा २०७१ को उत्तरार्धमा अनपेक्षित रुपमा मुलुक भित्र फैलिएको H1N1 पाण्डेमिक भाईरलका कारण ठूलो जन-धनको क्षति भएको र यसलाई स्वाईन फ्लू भनी अनर्गल प्रचार प्रसार भए सँगै बंगुर तथा पोर्कको विक्री वितरण हुन नसकी ठप्पको स्थिती पैदा हुन गयो । केही समय पश्चात यसको सामान्यीकरण हुँदै गर्दा २०७२ बैशाख १२ मा गएको विनासकारी महाभूकम्प र त्यसपछि देशको राजनीतिक वृत्तमा देखा परेको असहजता सँगै देश लामो समय सम्म अघोसित नाकाबन्दीको चपेटामा परेको यथार्थता सबैका सामु छर्लङ्ग छ । उपरोक्त कारणहरु नै नेपालको बंगुर तथा पोर्क व्यवसायको विकास र विस्तारमा मुख्य बाधकको रुपमा रहयो जसका कारण यस व्यवसायमा आश्रुत हजारौंको लगानी डुब्न पुग्यो र व्यवसायीहरु पलायन भए । बाँकी रहेका व्यवसायीहरुद्वारा उत्पादित बंगुर तथा पोर्कले पनि बजार पाउन सकेन । यस्तो विषम परिस्थिती सृजना भईरहेदा यसको बजार सम्बन्धमा अध्ययन अनुसन्धान हुनु वान्छनीय देखियो

माथि उल्लेखित घटनाक्रम लगायत यस व्यवसायको बजारीकरणसंग अन्तर्निहित अन्य विषयहरुको समेत विस्तृत अध्ययन अनुसन्धान गर्न बंगुर व्यवसायी संघ नेपालले र सिप्रेड/सामर्थ संग सहयोग र सहकार्यमा कार्य गर्ने सम्झौता गर्‍यो । उक्त सम्झौता अनुसार सम्बन्धित क्षेत्रका विज्ञहरुको सहयोग लिने र सम्झौतामा निर्धारण गरिएका क्षेत्र भित्र रही तत्कालिन समयमा बंगुर तथा पोर्कको बजारमा माग तथा आपूर्तिको अवस्था, यसले सामना गरिरहेका समस्या तथा चुनौतीहरु र त्यसको निराकरणको उपाय समेत पत्ता लगाई प्रतिवेदन प्रस्तुत गर्न जिम्मेवारी दिईएको थियो । विज्ञहरुद्वारा यस व्यवसाय संग प्रत्यक्ष तथा परोक्ष सम्बन्ध राख्ने उद्यमी, व्यवसायीहरु, विभिन्न सरकारी निकायहरु, नीजि मिटमार्ट, वधस्थल, ग्रोसरी, सेकुवाकर्नर लगायत पोर्क प्रोसेसरहरुसंग प्रत्यक्ष रुपमा सम्पर्क गरी प्रतिवेदन तर्जुमा गरियो ।

आज उक्त प्रतिवेदनलाई प्रकाशित गर्न लागिएको अवसरमा यो प्रतिवेदन तयार पार्न दिनरात मिहेनत गर्नु हुने विज्ञहरु, यस विषय संग सरोकार राख्ने सरकारी निकायहरु, गैरसरकारी संघसंस्थाहरु सम्बन्धित विषयका विज्ञहरु, सम्बन्धित उद्यमी/ व्यवसायीहरु, बंगुर व्यवसायी संघमा आवद्ध विभिन्न तहका सदस्यहरु, नीजि मिटमार्ट, वधस्थल ग्रोसरी, सेकुवा कर्नर तथा पोर्क प्रोसेसरहरु समेत सबैमा धन्यवाद प्रकट गर्दछौं । यस संघको केन्द्रीयकार्य समितिको तर्फबाट सिप्रेड/सामर्थलाई यस क्षेत्रको विकास र विस्तारमा पुर्‍याएको योगदानको उच्च मुल्याङ्कन गर्दै विशेष धन्यवाद दिन चाहन्छौं ।

डिल्ली राज पौडेल
महासचिव

उमेश कुमार राई
अध्यक्ष

Executive Summary

The context: Pig and pork industry has started to get momentum during the recent years in Nepal. The taboos of pig production and consumption by only certain communities are being gradually fading out and the young generations are coming forward for commercial production and processing. The government and non-governmental sectors are supporting for promotion of pig and pork industry in the country. However, after devastating earthquake and thereafter blockade from India, the pig industry came into standstill and pig farmers had to face serious economic challenges due to sharp drop in market (sale of piglets and pork). In these contexts, CEAPRED/ SAMARTH through its Nepal Market Development Project (NMDP) commissioned this study on pig and pork market situation analysis in order to recommend the measures for sustaining and promoting pig and pork industry in the country for the benefit of farmers and entrepreneurs at large.

Methodology: The study has been carried out in major pig production, processing and consumption hubs of the country, namely Jhapa and Sunsari in the eastern, Kathmandu valley, Nuwakot and Rasuwa in the central, Kaski in the western and Banke and Bardiya in the mid-western regions. Primary market information were gathered through interaction/interview with the pig producer farmers, pork sellers (butcher, whole seller, retailers), departmental stores, processing industries and hotel/restaurants through developed checklist and secondary relevant information were collected from respective DLSOs, livestock quarantine offices, Livestock and Poultry Market Promotion Directorate and Central Pig and Poultry Promotion Office (CPPPO) under DLS, and Trade Promotion Centre.

Pig farming and government supports: In recent years, registration of pig farms, mainly due to the various support provided by Department of Livestock Services has come into limelight. Many pig farms ranging from small scale to large commercial farms have been established in the country since the last 5 years. The primary interest of the farmers has been in the piglet production attributable to the higher profit from piglet sale in short period compared to the profit from sale of fattened pigs for slaughter. The major pig breeds being reared are Yorkshire, Landrace, Duroc, Hampshire, Pakhribas Black, Nagpuri (Meishan cross) and various crosses. The breeding system being practiced is haphazard and no systematic approach for genetic improvement is in place. The feeding system is primarily based on rice polish, commercial concentrate, hotel/restaurant kitchen waste/fruit vegetable wastage, available green grass, agro industry by-products and brewers' grain depending on availability and scale of production.

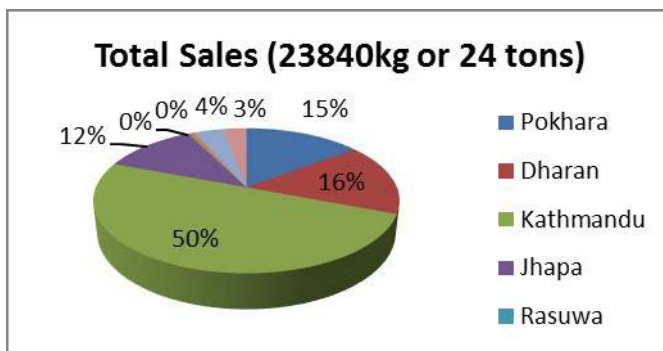
Market Players: The producer farmers, middlemen (purchasing and selling piglets and fattened pigs), slaughter houses, butchers, meat traders, feed, feed ingredients producers and suppliers, equipment and veterinary medicine suppliers, technical service providers, meat processors, departmental stores, star and other hotels and restaurants and the consumers are the major market actors in the pig value chain.

Problems: The unregulated increase in the number of breeder farmers producing and selling piglets that outnumbered the actual demand for fattened pig in the national market resulted in glut in the pig marketing system in the recent days. This was further aggravated by the devastating earthquake followed by Indian blockade that resulted into temporary stoppage of marketing activities including the supply of feed ingredients. In addition, the barrier to export piglets and fattened pigs to India and Bhutan at the same time further worsened the situation. Difficulties in transportation due to fuel crisis, unavailability of quality feeds, problem in sale of piglets and pigs marketing all brought the farmers in to the deep economic crisis. As a result, many small and medium farmers were forced to abandon pig farming. Farmers were compelled to sell their pigs and piglets in an unimaginably reduced price (Rs 500 or less for piglets and Rs 100/kg pork).

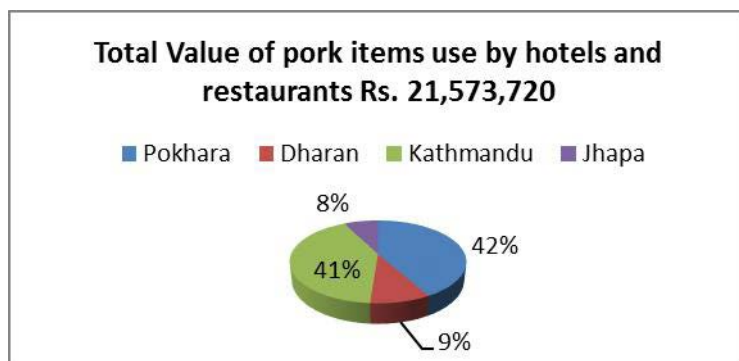
There was huge pig mortality and the remaining pigs were also found in emaciated stage. The breeder farmers had to stop further breeding of their sows.

Market hubs and marketing channels: The eastern region is the major pig production hub, while Kathmandu, Dharan and Pokhara are the major pork consumption hubs. The piglets produced by the breeder farmers' are sold to the fatteners or others in the same district, adjoining districts or to distant areas. There used to be export of piglets to India through formal/ informal route which has come to halt at present. The sale of piglets is channeled through farmers to farmers or through the middlemen and also from government farm to private farms. Apart from local consumption, the fattened pigs in the eastern region particularly black color pigs are transported to Kathmandu valley for slaughter. While from the western production centers (Banke and Bardiya), the chilled carcass/ cut parts are delivered mainly to processing centers in Kathmandu.

Sales and Demand of Pork: The information provided by the meat sellers associations, departmental stores, hotels, restaurants, individual meat sellers, food processing industries and meat suppliers of Pokhara, Dharan, Kathmandu, Jhapa and Rasuwa show that the total daily sales of pork in major pig/pork hubs of Nepal is 23.84 metric tons with a total value of Rs. 7,175,000. Kathmandu covers 50%, Dharan 16%, Pokhara 15% and Jhapa 12% of total sales volume which is clearly depicted by the diagram.



Many of the individual slaughterers who sell pork to the ultimate consumers have direct contacts with individual buyers, hotels and restaurants. These individual slaughterers buy pigs from local pig rearers and farmers and also from farmers outside their locality whom they know. Some other individual pork sellers buy pork at wholesale price and sell to the consumers at a prevailing retail price. In Jhapa, Rasuwa and Nuwakot the individual pork sellers slaughter the pigs by themselves. In Kathmandu, some slaughter by themselves and others buy from the wholesalers. These individual pork sellers in all the major hubs sell varying quantities of pork ranging from 10 to 300 kg daily depending on demand from their loyal as well as fixed customers, the area they cover and the quality of pork they are selling. The retail price also varies from one district to another depending on availability of pigs, the wholesale price and the quality of meat.



(based on the information provided by the meat sellers associations, departmental stores, hotels, restaurants, individual meat sellers, food processing industries and meat suppliers of Pokhara, Dharan, Kathmandu and Jhapa)

Hotels and restaurants are also buyers of fresh pork and pork items (bacon, ham, sausage, pork chop etc.) as they serve these items to their customers in accordance with demand. Big hotels mainly buy processed pork items as they serve these items to the tourists. The monthly sales of pork and pork items in hotels of pig and pork market hubs is Rs.21,573,720.00; and hotels in Pokhara covers the highest percentage (42%) of this sales followed by Kathmandu (41%), Dharan 9% and Jhapa 8% respectively.

There are a number of meat processing industries in Kathmandu, Pokhara, Dharan and Tarahara which buy a significant volume of pork and carcasses from different slaughter houses and individual pork sellers. Meatco, Urban Food, Nina and Hager, Gourmet and Fewa Meat Processing are some of the big meat processors that buy a larger volume of pork to produce different pork items that are sold to hotels, restaurants and individual household consumers. These processing industries also import pork, cut pieces and carcasses from other countries for processing. The total annual demand of pork in major consumption pockets of Nepal is 9293.85 MT with a value of Rs. 2753.92 million.

Impacts of earthquake and blockade on sales: The mega earthquake of 2015 and the blockade imposed by India later, severely affected pig and pork market in Nepal, as there was sharp decline in price of piglets all over Nepal and a significant drop in sales of pork in Pokhara and other parts of Nepal. Significant drop of tourists' inflow to Pokhara, rumor of swine flu and foot and mouth disease were the prime reasons for sharp decline in sales of pork in Pokhara. However, there was not such noticeable effect in Kathmandu as many foreigners visited the city for rescue and relief works after the earthquake. Other cities such as Dharan and Jhapa experienced decrease in sales of pork for a week or two, and then they resumed the normal sales volume. Departmental shops of Dharan and Kathmandu experienced some decline in sales of pork items only for few days after the earthquake; they resumed the normal sales volume promptly. The pig farmers all over Nepal including Dharan, Jhapa and Kathmandu were badly affected as the price of feed increased steadily with noticeably shortage of feed supply in the market because of the blockade, which caused an increase in cost of production of piglets and sharp decline of piglets for some time.

Increase in number of individual pork sellers was also a prime reason of decreased sales volume for individual sellers, as the share is distributed to larger number of sellers. Despite all these problems, the pork processing industries and meat sellers stated that the pork consumption trend has increased by 10% during the previous years.

Strategies and Measures: There are number of internal and external problems of pig and pork market system in Nepal which need appropriate actions from different market players, supporting organizations and the government as well. People look for clean and quality products for the price they pay, hence the individual meat sellers and slaughter houses should produce and process the pork properly for it to be hygienic and fit for the human consumption. Good husbandry practice (GHP) and good manufacturing practice (GMP) should be strictly followed by all to meet the requirements of international standard and increase internal consumption and export. Neighboring countries such as China and Bhutan can be potential export markets for Nepal only if the GHP and GMP are seriously followed. Disease free zoning is crucial to initiate the export, hence the government should take appropriate measures for this. Big cold storages should be built to store the cut pieces and carcasses in order to sell them during seasons. Favorable export policies should be developed by the government to promote export of pig and pork for foreign earnings. PEAN, FNCCI and Department of Livestock should provide supports to the pig farmers to apply quality control measures, traceability and certification. They should also regularly organize different fair and promotional events to motivate the pig farmers and pork sellers. Unidentified hubs such as Kavre, Sindhuli corridor and tourist route such as Everest Trail and Annapurna Trails should also be promoted for pig and pork production and marketing. Winter maize, quality protein maize and soya bean production should be promoted to help feed industries to reduce the cost of feed. Feed industries should be promoted for quality feed production and regulated for their adherence to quality standard. The enablers should also adopt an integrated approach and complement each other's efforts of promoting pig and pork market internally and externally.

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Abbreviations and Acronyms

CEAPRED	Centre for Environmental and Agricultural Policy Research, Extension and Development
CPPPO	Central Pig and Poultry Promotion Office
CSF	Classical Swine Fever
DFID	Department for International Development
DLS	Department of Livestock Services
DLSO	District Livestock Service Office
FMD	Foot and Mouth Disease
FNCCI	Federation of Nepalese Chamber of Commerce and Industries
GHP	Good Husbandry Practice
GMP	Good Manufacturing Practice
JE	Japanese Encephalitis
M4P	Market for Poor
MoAD	Ministry of Agricultural Development
NARC	Nepal Agricultural Research Council
NMDP	Nepal Market Development Programme
NTEPC	Nepal Trade and Export Promotion Centre
PEAN	Pig Entrepreneurs' Association of Nepal
PRRS	Porcine Reproductive and Respiratory Syndrome

1. Introduction and Methodologies

1.1 Background

Samartha – Nepal Market Development Programme (NMDP), a five year DFID funded rural development programme, which follows Making Markets Work for the Poor (M4P) approach, aims at reducing poverty in Nepal by increasing incomes of 300,000 smallholders and small scale entrepreneurs. M4P approach, as one of the core elements of DFID's Private Sector Development Strategy, is also consistent with DFID's priority of wealth creation.

M4P approach, with its six core elements such as *Focus on Causes rather than symptoms*, *Market System framework*, *Role of Facilitator*, *Indirect as much as Direct Impact*, *Sustainability* and *Large Scale Impact*, has primarily focused on business enabling environment intervention for providing indirect supports to agricultural sub-sectors such as ginger, dairy, fish, vegetables and pigs.

With the supports from the government and non-government organizations, pig industry in Nepal has been growing and converting itself from subsistence to commercial scale. Despite a growing status of this industry, a lot of concerns on sales of pigs and number of issues on demand side of pig/pork market have been raised frequently. This created a situation of uncertainty and doubts on perpetuity of market of the industry. Besides, lack of information on sales and demand of pigs and pork and the particular hubs for pig/pork production and utilization has further affected the decision making of main stakeholders, and future planning to support this industry.

Pig farming and pork selling is widely adapted by many people in different parts of Nepal, some with organized and systematic approach, and others by following the traditional practices. There are also many districts and townships in Nepal which are known as pig and pork market hubs; but no any attempt has been made to collect relevant information on the activities such as breeding, fattening, slaughtering and selling of pigs and pork in those hubs. Furthermore, pig farms and slaughter houses in different districts have got direct and indirect support for improvement in operations and production from government and non -government organizations; but a study on demand and consumption of pigs and pork in different districts of Nepal and potentiality of supplying pigs and pork to neighboring or third countries has not yet been carried out.

The pig farmers, on the one hand, have raised their concern on abrupt decline in sales of pigs; the slaughter houses and individual pork sellers, on the other, indicate a slight decrease in price despite the stable or increasing sales volume. Such information have created a state of confusions among the concerned agencies for formulating further strategies to address the problems at different levels (i.e. at farmers, fatteners and pork sellers' level).

Some stakeholders such as Pig Entrepreneurs' Association of Nepal (PEAN) and Central Pig and Poultry Promotion Office (CPPPO) have limited information about the farms and market which is not helpful for further planning and which cannot indicate the latent pig markets in Nepal and cannot guide on strategies for production and export of pigs and pork.

This circumstance indicated the need of a market study of pig and pork industry in Nepal.

1.2 Objectives

The objective of this study is to gather market intelligence on the pig sector to identify:

- The demand of pork in the major consumption areas,
- Trend on demand of pork in the major consumption areas,
- Market constraints
- Change in consumer preference and
- Forward recommendations, based on the analysis and findings, for improvements of pig and pork market situations.

1.3 Scope and limitation of the study

The study has based its analysis of pig and pork market within the scope of the following agendas:

- gather information on the demand from local consumption, hotel consumption and tourists
- analyze the consumption pattern based on seasonality and over time
- gather information on the demand of pork in major pork consuming areas of Nepal in relation to quality, volume and price
- analyze the latent pork market and provide suggestions to increase the consumption of pork
- gather information on the trade links and issues with Bhutan and Tibet

The analysis of this study has been limited to the subjects and factors stated in Annex 1 of Terms of Reference that was signed by the consultants (Annex 1 of TOR - also as Annex 1 of this study Report). There might be other relevant factors or subjects for analysis and suggestions of pig and pork market, they are not covered by this study.

The study covered only main pig and pork hubs in Nepal such as Jhapa, Dharan, Kathmandu, Pokhara, Rasuwa, Nuwakot, Banke and Bardiya for primary information collection and drawn inferences on consumption, demand and sales of pork of those areas based on information provided by the respondents who are involved in pork and pig selling, operating restaurants, hotels and food processing industries, managing pig farms and providing support services to pig farmers.

1.4 Methodology of the Study

The study has incorporated both primary and secondary information for analysis and findings.

- i. Primary information was collected from:
- ii. Individual Meat Shops, Wholesale and Retail Fresh Houses/Meat Mart/Slaughter Houses
- iii. Stores selling different pork items
- iv. Meat Processors,
- v. Hotels/Restaurants,
- vi. Pig Farms and cooperatives

Respective checklists were developed and available individual pork sellers, retailers and wholesalers, slaughterers, pig farmers, hotels and restaurants, meat processors and departmental stores were contacted randomly for relevant information. As the exact number of meat sellers and pig farmers was not known (for unavailability of information on unregistered sellers and farmers) in the main pig and pork hubs, sampling size was ignored and an attempt was made to consult a possible number of pork sellers, farmers and restaurants or hotels which can represent the specific groups in pig and pork market.

Based on the information provided by individual pork sellers, retailers, wholesalers, slaughterers, pig farmers, hotels, restaurants, pig meat processors and departmental stores daily and annual sales and demand figures (quantity as well as monetary figures) have been estimated and presented in the findings and analysis section of this report.

Secondary information was collected from:

- vii. District Livestock Offices
- viii. Livestock Quarantine Offices (Kakadbhitta and Rasuwa)
- ix. Directorate of Livestock Market Promotion - Kathmandu
- x. Nepal Trade and Export Promotion Center (NTEPC)
- xi. Federation of Nepalese Chamber of Commerce and Industries (FNCCI)
- xii. Central Pig and Poultry Promotion Office (CPPPO)

The study analyzed both qualitative and quantitative information for findings and recommendations to present both descriptive and numerical presentation of analysis to reach clarity.

2. Contextual Analysis and Findings

2.1 Pig Farming, Major Hubs and Export

2.1.1 Pig Population and Trend

Nepal has estimated 1.16 million heads of pigs, of which 53% are concentrated in the hill region, 36% in the Terai and 11% in the mountain region (MoAD 2012/13). Most of the pigs are found in the Eastern Development Region (49.4%) and least in the Far Western Development Region (4.6%). Some of the Eastern Terai and hill districts have the highest concentration of pig population (Fig 2).

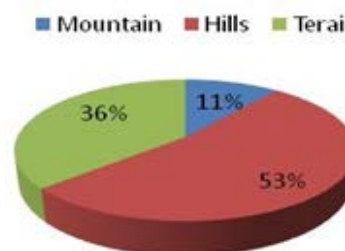


Figure 1: Pig population across different physiographic regions of Nepal

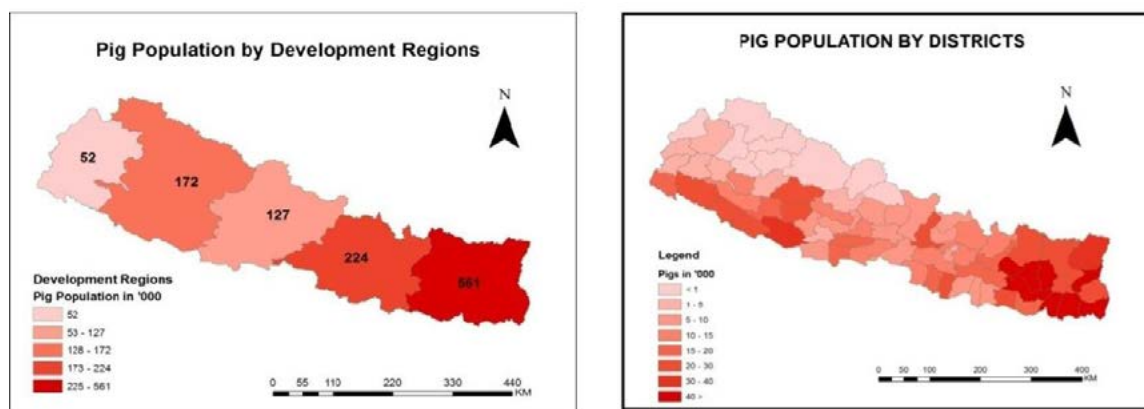


Figure 2: Pig population distribution across development regions (A) and districts (B) of Nepal.

During the past 10 years, the pig population has increased annually by 2.4% and at the same time, pork production increased by 2.0% annually. Pork production (18709 MT during the year 2012/13) represented 6.3% of the total annual meat production in the country.

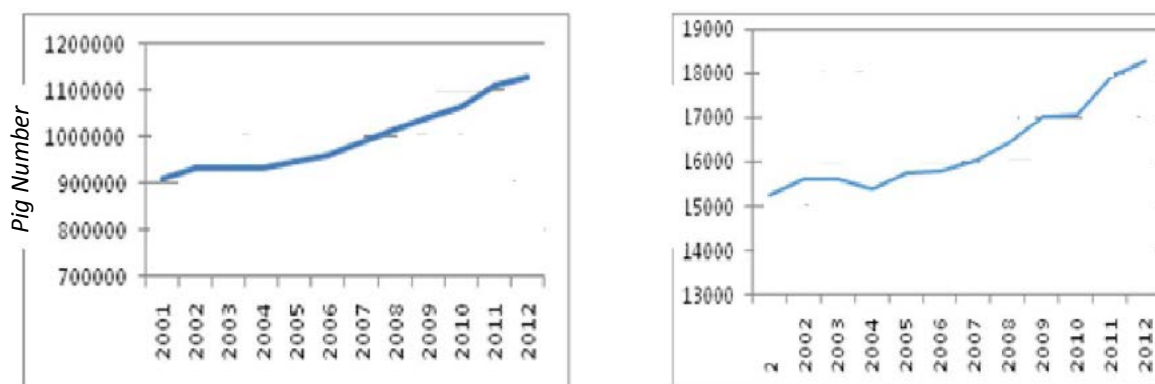


Figure 3: Trend of pig population (A) and annual pork production (B) in Nepal

During last few years, the number of commercial pig farms particularly as a breeder farms producing piglets have increased rapidly.

Table 1: Pig population and registered pig farms in studied districts (2070/71)

	Rasuwa	Nuwakot	Kaski	Jhapa	Sunsari	Banke	Bardiya
Indigenous (No)	2827	NA	2979	26664	45411	43864	25354
Exotic/ Crosses (No)	571	NA	7529	101948	40387	43439	39949
Total	3398	8537	10508	128612	85798	87303	67293
Registered Farms (No)	37	103	55	79	25	135	166

Source: CPPPO (2016), DLSOs of respective districts, MoAD (2013/14)

2.1.2 Pig Production System and Breeds

The pig production system prevalent in Nepal can be broadly divided into subsistence (traditional) production in scavenging management and recently emerging commercial piggeries. Under the traditional subsistence production system, mostly indigenous pigs are found to be reared under scavenging management near the villages. Hurrah, Chwanche and Bampudke are the native pig breeds (Neopane and Kadel, 2008). Certain ethnic communities are found to be involved in the production of pigs under this system. Both, input and output under this system are low, but have significant contribution in the household level food and nutrition security as well as for the fulfillment of the religious requirement.

The recently emerging and fast growing commercial pig production system, under which mostly exotic breeds and their various crosses are reared in confinement with commercial feed supplement. Yorkshire, Landrace, Duroc and Hampshire are the common exotic breeds introduced for commercial production. The tribes and religion are not important in this production system, youths belonging to all ethnicity are found to be involved in commercial piggery. Under commercial pig production system, following sub systems are most prevalent in the country.

- Breeding farms- Farmers are only producing piglets and selling to the fatteners
- Fattening farms- The farmers purchase piglets from the breeder farms and fatten the piglets for slaughter/ market. The fattening period varies from 6-9 months depending on feeding management.
- Both breeding and fattening farms- The farms produce piglets both for selling to the fatteners and for fattening and marketing by themselves

Under this system, farmers are found to be keeping from few breeding sows to as large as 200 breeding sows with more than 1000 fatteners with the concept of factory farm production. Beside these systems, pig production has also been found to be integrated with fish farming in some parts of the country.

In the present study location, the native breeds observed were Nagpuri (Meishan cross), Dharane black pig (Pakhribas black pig) and Hurrah while the exotic breeds found were Hampshire, Yorkshire, Landrace, Duroc and different crosses between these breeds. Some of these farms were also found to be keeping wild boar for crossing with domestic pigs for value addition. In the major pig hubs, the native pig Chwanche which is popular among certain communities in the hills was not observed at all.

The breeding cycle of sows was found to be as follow

Age of sow	Events
8-9 Months	First Mating
12 Months	First Farrowing
14 Months	Second Mating

Age of sow	Events
18 Months	Second Farrowing
20 Months	Third Mating
24 Months	Third Farrowing
26 Months	Fourth Mating
30 Months	Fourth Farrowing
32 Months	Fifth Mating
36 Months	Fifth Farrowing

The pig breeding was haphazard. No systematic approach has been followed for genetic improvement in the breeder farms selling piglets. Pig can be bred anytime throughout the year; however, the farrowing is more concentrated in Spring and Autumn seasons. The piglet mortality is high for those farrowing during winter and rainy seasons. It is possible to synchronize farrowing in such a way that fatteners are available in the market during high demand period.



2.1.3 Feeds and Feeding System

The pig feeding system varied across the farms. The use of feed resources type in pig feeding is also influenced by the scale of farming. Smallholder farmers generally used to bring restaurants/ hotel kitchen waste for feeding, in addition to bran and forage (such as Berseem) supplementation. In the smallholder management system, pigs are also offered with brewer's grain, root tubers and green forages. Under scavenging system, particularly the local pigs Hurrah in Terai are freely grazed in the nearby areas with little or no supplementation. The use of concentrate was mostly limited in the large commercial farms. Even commercial farm used to mixed concentrate with bran (rice polish) to reduce the feeding cost. Farmers were found to be uncertain about the quality of factory made concentrate and complained that the feed conversion ratio is not satisfactory. The cost of feeding generally goes as high as 75% of the total cost of feeding under commercial production system and hence is the main factor determining the profit and sustainability of the pig farming.



2.1.4 Vaccination/Medications/Common Diseases

The major disease affecting pig production in Nepal are foot-and-mouth disease (FMD), classical swine fever (CSF) and recently reported porcine reproductive and respiratory syndrome (PRRS). The domestic pig is known to be susceptible to several other zoonotic diseases: rabies, leptospirosis, brucellosis, erysipelas, tuberculosis, Japanese B encephalitis (JE) etc. Pig meat from infected pigs, when consumed raw or inadequately prepared, can transmit a number of pathogens, such as *Trichinella* spp., *Cysticercus* spp., *Salmonella* spp. and *Listeria* spp. Fungal diseases such as ringworm and external parasites causing scabies are also common. In addition, gastrointestinal parasites are common in pigs especially under the scavenging system.

The veterinary services are generally provided from District Livestock Service Office including vaccination services. The vaccination against swine fever was common, whereas against other diseases were not found. Iron supplementation, drugs for internal and external parasite control were also common. The treatment of various diseases as and when occurs by the technicians (government or private) were the common practices particularly under commercial production system, whereas ailment is generally unattended under scavenging and subsistence production system.

2.1.5 Cost of Production

Generally, most of the pig farmers visited had not kept any records on expenditures and income appropriately or reluctant to provide the information. The cost of production provided here is based on the discussion with the farmers.

2.1.5.1 Piglet Production Cost

The discussion with the farmers, in different locations revealed that the feeding and other cost for rearing breeding sows up to the age 3 years, (by which, the sow on an average will produce and wean 40 piglets in 5 different farrowing) would be around Rs. 50000.0. Hence the cost of piglet production comes around Rs 1250.0. It was also expressed that the total cost of production is met by the sale of piglets from first farrowing alone.

2.1.5.2 Fattening Cost

The period of fattening was found to vary from 6-9 months (after weaning), in which, the exotic pig breeds attain 70-100 kg live weight. In the western terai region with a typical rice polish, vegetable and fruits waste feeding, the cost of production was calculated as follow:

Total rice polish feeding for the period of 8 months 220kg X Rs 27.0	6000.0
Vegetable/ fruit waste	500.0
Vit./ mineral/ medicine	2000.0
Labor cost (a labor=50 fattening pigs)	1000.0
Piglet cost	4000.0
Total Cost	13500.0
The dressed pork meat production 80 kg	
Thus, per kg pork production cost (Rs.)	168.75

Similarly, discussion with the smallholder farmers, the hotel restaurants owners who also raise pigs in the eastern Terai (Tarahara) to utilize restaurant kitchen waste revealed that the profit per pig in a period of 6-8 months fattening was around Rs. 2000-4000 without accounting the labor cost.

In the eastern Terai region, the cost of production in commercial production unit with commercial feed and bran combination ranged between Rs 150-170 per kg pork.

In Kathmandu Valley, discussion with the farmers revealed a slightly different production cost scenario.

Feed cost 180 daysX1.7kgXRs 38.0	Rs. 11628.0
Piglet cost	Rs. 4000.0
Other cost (vaccine/ medicine and labor)	Rs. 2000.0
Total Cost	Rs. 17628.0
The live weight attend	90kg
Production cost per kg live pig production	Rs. 196.0

The butchers were of the opinion that the dressing percentage of pigs fed with commercial concentrate is 75% and that of garbage fed stands around 65-72% only. They are willing to pay only Rs 170.0 per kg live weight for concentrate fed pigs and Rs 120.0 per kg for garbage fed pigs from the producers' farms. Hence the fattener farmers are in gross loss.

2.1.6 Quality and Certification/Traceability

Quality and certification system for pig and pork in the country is still in rudimentary stage. Consumers' awareness has increased, however, in the absence of implementation of Slaughterhouse and Meat Inspection Act, the assurance of quality and certification is in stake and traceability is questionable. However, adoption of good husbandry practices/ code of practices in piggery sector would be vital for the quality assurance. Development of code of practices/ good husbandry practice, facilitation for voluntary adoption of GHP and gradual shift towards mandatory adoption through legislation are the steps needed for assuring quality of products that will also ensure traceability.

2.1.7 Major Support Providers

The major support providers in the piggery sector include government (Department of Livestock Services and Nepal Agricultural Research Council) from which technical advises, treatment services including disease control, quality seed stocks are provided to the producer farmers. In the recent years, the Department of Livestock Services through its network is providing direct support for production through cooperative pig farming, slaughterhouse establishment for market promotion, linkage establishment, and support through youth focused production programme etc. Non-governmental organization like SAMARTH/CEAPRED is also supporting farmers and entrepreneurs for production, breed improvement, quality improvement and market linkage establishment.

2.1.8 Sales of Piglets

The main interest of the pig farmers were found to be concentrated in the piglet production and sale owing to the greater profit margin in piglet sale compared to time taking fattening and pork meat sale. Consequently, every farmer opted to be breeder farmer. In the past, owing to the long queue for getting piglets from DLS and NARC farm, DLS promoted expanding the breeder farmers to fulfill the increasing demands for piglets within and outside the country. Large commercial breeder farms were also established in the country. The flow of piglets from its production hubs to the different parts of country flourished for the time being. However, the pace of increase in the demand of pork couldn't catch with the increase in piglet production. Furthermore devastating earthquake temporarily stopped tourist flow and traumatized Nepalese people also reduced consumption. In the meantime the Indian blockade hampered transportation of pigs from production hubs to consumption place, severely affected availability of pig feeds and soared the feed price, nearly completely stopped the export of piglets and pork to India and Bhutan. These all resulted into dwindling situation of piggery sector in the country. Pigs died, sold at nominal prices, slaughtered and consumed at village level and many emerging farms were completely closed. The normal prices of 3500-4500 per piglet dropped significantly and even some farmers were forced to sale @ Rs. 500.0 per piglet not even sufficient to meet the production cost. However, the situation has

been gradually returning toward normal, but the risk of such fluctuation in the future is also likely to occur, if proper measures are not taken to balance the demand for pork (internal and export) with pig production.

2.1.9 Export and Import Situation and Potential

The volume of export and import of pig and pork to and from the country is not significant at present. Export of piglets and live pigs is limited to Eastern India and Bhutan whereas pork (frozen) is being exported to China, Thailand and Hong Kong to a limited extent occasionally (MoAD, 2014). At present, the export to India has come to standstill due to embargo imposed by India. Export to Bhutan via India has also stopped due to internal and external constraints. The Bhutanese market has diverted to Orrisa, India as the Nepalese producer farmers stopped selling pigs to the middlemen supplying pork to Bhutan in the past due to slightly higher price in Kathmandu market, losing the potential Bhutanese market. There was export of some fattened pigs to Tibet from Rasuwagadhi checkpoint though unauthorized, however, it is not regular and quality and traceability issue have been surfaced out. Few live pigs were also imported from India for slaughter in the western border area. Similarly, there is import of frozen pork from abroad also. Some meat processing industries in Kathmandu valley are found to be importing frozen pork from Thailand, China and Denmark occasionally, though the volume was insignificant, in addition to purchase from the national market. Canned pork meat is also found in Nepalese market (departmental stores) mainly imported from China.



At current time, China is importing nearly 1 million ton of pork from USA and Europe annually. China imported 518000 Mt from January to September, 2015, up 22% in the same period of the previous year. ([http:// www.globalmeatNews/Industry-Market/ Chinese-pork- import-On-the-rise.com](http://www.globalmeatNews/Industry-Market/Chinese-pork-import-On-the-rise.com)). Owing to this huge potentiality in the Northern part, it is essential that bilateral agreement is made between the countries for export addressing the concern of importer to support pig producer farmers and traders of the country. The quality assurance and quarantine procedures are the foremost important consideration, if we want to export pigs and pork in Tibet/ China or any other country in future. Eradication or at least declaration of disease free zone (for most important diseases like FMD) designated for production of pigs intended for export, adoption of good husbandry practices, and establishment of standard slaughterhouse are the pre requisites for materialization of export. The competitive price with reducing cost of production is another essential component. The average wholesale price of pork in China has reached 25.8 Yuan (US\$ 3.96, 2016 rate) per kg. The requirements for supplying pig and pork to China is presented in the annex 6. 3.

The Bhutanese market doesn't seem promising as such due to Indian barrier at present and also that might arise in future. The air route might not be viable owing to the current price of pork in Bhutan. The current price of pork in Bhutan is Rs 300.0 per kg. The import requirement of Bhutan government is presented in annex 4.

It was also learnt that some traders from Delhi India has recently visited Pokhara and had contacted large commercial farms for exploring possibility of importing frozen pork to India targeted for Korean residing in India. Their requirement is clean and standard slaughter place for hygienic pork production and the daily demand of 2 Mt frozen pork. Still it has to be negotiated and materialized.

2.1.10 Major constraints

Some of the major constraints that surfaced out during the study were:

- Piglets and fattened pig marketing (recent development) that culminated by rumors of swine flu, consequences of earthquake and India blockade.
- Lack of breed improvement plan and strategy to enhance productivity and unavailability of high genetic quality seed stock.
- Various diseases and parasites of economic significance
- Inadequate farmers knowledge on good husbandry practices
- Insufficient number of technicians dealing with pigs
- Unavailability of quality pig feeds, high feed conversion ratio
- Competition between human food and pig feeds
- Increasing cost of production, particularly due to rising price of feed and ingredients.
- Threats of zoonotic diseases as pig being a source of some zoonotic diseases
- Environmental pollution, foul odor and increased concern of communities for establishing the pig farm within/near the human settlements
- Unavailability of proper transportation facilities for live animals and processed meat
- Inadequate technical and support services
- Inadequate quality water for drinking and washing
- Input supply- pig feed manufacturers are limited
- High piglet mortality
- Export hurdles
- Inadequate insurance coverage
- Lack of code of practices for piggery sector
- Inadequate farmers' knowledge on hygienic pig and pork production
- Lack of appropriate housing designs for pig production in factory farm system.
- Non implementation of Slaughter house and Meat Inspection Act
- Hurdles from the police administration during piglets and fattened pig transportation
- Unavailability of soft loan for pig farming

2.2 Pig/pork Market Systems and Players

Market System operates with the suppliers, producers, sellers and buyers. Pig Producers, sellers and buyers are the Direct Market Players, whereas, feed suppliers, financial institutions and equipment suppliers who are not direct players are also part of Pig and Pork Market Systems. In addition, business enablers, infrastructure providers and business associations¹ are also the part of market system.

Since, pig/pork market system in Nepal consists of different direct and indirect market players, and each of them influences the market of pigs and pork it would be worth analyzing them to know their roles and influences in the pig and pork market value chain.

2.2.1 Farmers (breeders/ fatteners/breeders cum fatteners)

As one of the direct players in pig and pork market system, breeders provide piglets for fattening and further breeding of pigs in different districts of Nepal. Without the existence of breeders or farmers producing piglets, the market system will be incomplete and there will not be any transactions of pigs and pork taking place in the market system. If the breeders supply piglets in less number as compared to the demand, the market will be ready even to pay more than the real market price. On the contrary, the price will decrease if the piglets are supplied in a larger number as compared to the real demand.

In the light of higher piglet price, majority of the farmers tended to be the breeder farmers and thus the supply of piglets outnumbered the actual demand of piglets for fattening. Bardiya and Nuwakot are the

¹ www.technoserve.org/our-work/how-we-work/what-is-a-market-system

districts where there is high number of pig farms among the hubs that were visited. Proximity to capital city where the demand of pig and pork is comparatively large, can be attributed to the higher concentration of pig farms in Nuwakot. Transportation of pigs is also not that difficult from this district to Kathmandu, as two road networks are linked to Kathmandu from Nuwakot. Rasuwa, with the least number of breeders, indicates comparatively less activities in terms of breeding, fattening and even pork selling.

The larger population of pigs in Jhapa and Sunsari indicates comparatively a larger volume of transactions in terms of piglets and pork selling. Jhapa is the largest among the districts in terms of existing population of pigs, which indicates a larger volume of sales of pigs or pork taking place in and around the district. Activities taking place in other districts which are closer, also contribute to the increasing or decreasing number of population in a certain district. If consumption of pork is high in the adjoining districts, farmers in the surrounding districts will increase the number of fattened pigs (to supply to those districts where the consumption is high). As stated above, higher population of pigs in a district also indicates a higher sales of piglets, since the total population consists of piglets too, which will be sold to the farmers of the same district or supplied to farmers of adjoining and other districts. In such a context, Jhapa, Sunsari and Bardiya are the leading districts which sell piglets, fattened pigs and even pork to the customers - no matter these customers are from within or outside the district.

2.2.2 Departmental Stores

Departmental Stores, as they sell variety of pork items to the customers, play an important role in the pork market system by linking the processing industries to hotels, restaurants and ultimate consumers. A number of renowned departmental stores were visited during the study. They sell pork items both local and imported as per the demand of customers. Some of these stores sell pork sausage and pork luncheon only and others

sell ham, bacon, pork chops, barbeque sausage and salami in vacuum packed packets with different weight. The price of these items differs depending on brand and quality, but not significantly as most of them are from local suppliers – except the luncheon packets which are mostly from China. The sales volume of pork items from these stores is helpful to estimate the demand of pork items by individual stores in Nepal.

Existence of systematically organized and fully equipped slaughter houses selling pork to individual pork sellers and ultimate consumers in major hubs is almost none.

Table - 2 Demand of pork items by different stores in Nepal

Stores	Items sold	Local or Imported	Popular Brand	Total Annual Sales (Rs.) Before Earthquake	Total Monthly Sales after Earthquake (Rs.)
Store 1 in KTM (including other 8 branches)	Ham, Bacon, Chops, Sausage, Salami, Kima	Mostly local	Prasuma, Meatco, Urban Food, Sea Food and Gourmet	18,000,000.00	1,500,000.00
Store 2 in KTM (including other 2 branches)	Chop, Roasted Meat, Ribs, Belly, Sausage, Ham and Bacon	Mostly local	Nina and Hager	12,00,000.00	1,000,000.00
Store 1 in Pokhara	Pork Kima, Pork Cube (boneless), Pork Chop, Sausage (main item), Ham, Bacons, Salami and Ribs	Kathmandu and Local	Nina and Hager, Fewa and Fish Tail Meat Products	3,000,000.00	250,000.00
Store 2 in Pokhara	Bacon, Ham, Pork Chop and Pork Sausage	Kathmandu, Local	Urban Food, Deep Jyoti, Nina and Hager, Gourmet and Fewa Food Processing	4,800,000.00	400,000.00
Store 1 in Dharan	sausage, ham, bacon, and luncheon packets	Kathmandu and Local	Prasuma, Purwanchal Sausage, Prajwal vet Pharma, Sewa Sausage	2,400,000.00	200,000.00
Total				40,200,000.00	3,350,000.00

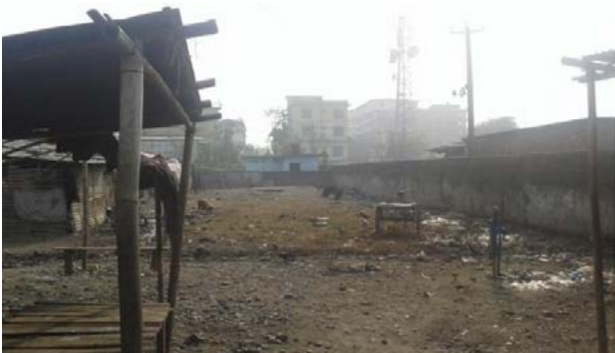
(based on information provided by the respective stores, individual name of the stores not disclosed on request from them)

This sales figure is derived from 15 stores (as it was not available from two stores – one from Pokhara and another from Dharan). The average sales figure of departmental stores was (40,200,000.00/15) Rs. 2,680,000 or **2,700,000.00** (in round figure) which indicates an annual average demand of pork items from one individual store in different cities of Nepal. The average monthly demand of pork items, thus, comes to be around Rs. 223,333.00 from one store alone.

The monetary value of average demand of pork items from one departmental store in Nepal is Rs. 2,700,000.00 per year

2.2.3 Slaughter Places/Wholesalers

The existence of organized and systematic pig slaughter places being operated by the wholesalers in the major hubs is nominal. There is one in Dharan, a few in Pokhara and Kathmandu as well, which look clean but still need lot of improvements and latest equipment to reach an acceptable standard. These slaughter houses are actually selling meat at wholesale price to the individual pork sellers, meat processors and hotels. They also sell pork to the local customers at retail price at their sales outlets (Meat Marts or Fresh Houses). In Jhapa, and in Dharan two pig entrepreneurs are constructing one slaughter house each in both places (with support from CEAPRED/SAMARTH) are in the process of operation shortly. A few slaughter places (around three to four) are operational in Pokhara. In Kathmandu there are well known slaughter places such as Thankot, Nakhipot, Koteswor, Jorpati, Khichapokhari, Balaju Matatirtha and Manamaiju. These places have wholesalers as well as individual slaughterers selling pork at retail price. But these places still lack a fully equipped and systematically organized slaughter house that can meet the required international standard.



Non organized slaughter place and meat shop



Organized meat shop and slaughter house

The following table depicts the average volume of sales of pork that one slaughter house or wholesaler sells to different market players and local consumers:



Table 3: Average quantity of pork sold by Slaughter Houses/Wholesalers in major hubs

Slaughter House/ Wholesalers	Daily Sales to different customers (in Kg)				
	Individual Pork Sellers	Hotels and Restaurants	Meat Processing Industries	Local Consumers	Total
Pokhara	240	20	18	60	320 (4 pigs)
Dharan	40	35	30	3	390 (5 pigs)
Kathmandu	320	40	50	80	490 (6pigs)
Total	600	95	98	143	936 kg
Average	200	32	33	48	312 kg (4 pigs)

(In Jhapa and Rasuwa wholesalers who are regularly in business could not be traced).

Banke and Bardiya have bigger slaughter houses which supply pork to Kathmandu and Pokhara and sell very minimum quantity to the local buyers. They supply pork on weekly basis, hence a separate chart is depicted for this.

The exact number of wholesalers in each of the above districts is not known, since some of them are registered and some others not and a limited wholesalers in each of the above districts operate regularly and others intermittently because of obstructions in supply or procurement.



The above figures are extrapolated based on the information provided by those wholesalers who were contacted during the field visits.

Wholesalers in Kathmandu sell highest number of pigs or largest volume of pork i.e. 490 kg daily to different market players and to the ultimate consumers. In Jhapa, Banke and Bardiya there are few individual slaughterers who sell pork to individual sellers at the wholesale price which is generally lower by Rs. 20 to Rs. 40 per kg than the retail price and they slaughter one or two pigs per day to the maximum.

On an average, one wholesaler in Nepal sells around 312 kg of pork to different players as above. Such sales can increase during winter and festive seasons to 6 pigs (i.e. 480 kg) and decreases to 2 pigs (160 kg) during rainy season.

2.2.4 Pork Suppliers in the Major Hubs:

A considerable volume of pork is supplied to Kathmandu and Pokhara from two districts in mid-western region of Nepal i.e. Banke and Bardiya. Meat processing industries and wholesalers in Kathmandu and Pokhara are the major buyers who place orders to the pork suppliers on weekly basis to get the delivery in time. The following table depicts the number of suppliers and total monthly volume of supply to the buyers in Pokhara and Kathmandu:

Table 4: Pork Suppliers in Banke and Bardiya and their sales volume (monthly)

Districts and Suppliers	Kathmandu (MT)	Pokhara (MT)	Total (MT)	Suppliers' Buying Price (Rs/kg)	Supplier's Selling Price RS/kg)	Suppliers Pig source	Cold Storage Capacity (MT)
Banke-Supplier A	20	5	25	170	220-240	Banke, Bardiya	100
Banke-Supplier B	2		2	180	230	Banke, Bardiya	5
Banke-Supplier C	8		8	200	240	Banke, Bardiya	5
Banke- Supplier D	8		8	180-190	220-240	Banke, Bardiya	7
Bardiya-Supplier 1	11	5	16	170	240	Banke, Bardiya, Kailali	8
Total	49	10	59				125

There are altogether 4 suppliers in Banke and 1 in Bardiya, who are regularly supplying pork to Kathmandu and Pokhara. All these suppliers, except two in Banke, have their own slaughter houses with required equipment for slaughtering (One was supported by PACT and another by SCEAPRED/SMARTH). Two suppliers (B and C) who do not have their slaughter houses get slaughtered pigs from the farmers and cut them into required pieces in their premises where they have also installed the cold storages with a capacity ranging from 5 to 100 Mts.

Their selling price looks similar, but it varies, if they supply special cut pieces such as Belly which is sold at Rs. 350, Leg Piece sold at Rs. 280 and Skinless at Rs. 500 per kg. These are the average prices of such items, in reality, there are differences in prices even for these pieces from one supplier to another, which they did not disclose.

The above table shows that the monetary value of monthly supply of pork from Banke and Bardiya is about **Rs. 11,760,000.00** if the minimum average price i.e. Rs. 240 per kg is taken as the basis of calculation. The actual transaction is higher than this amount as the prices of special pieces are different, and every supplier delivers special cut pieces depending on demand from the buyers.

Monthly Supply of pork to Kathmandu and Pokhara from Banke and Bardiya comes to be 59 tons with a monetary value of Rs. 11,760,000.00 which is encouraging for the pig farmers in these two districts.

The farmers of Banke, Bardiya and Kailali sell pigs to the suppliers at a price which does not exceed Rs. 200.00 per kg at the moment. Since many of the pig farmers use hotel kitchen waste and local ingredients as feed to pigs, the cost of production was not high; hence they can sell pigs at a price even slightly lower than Rs. 190 per kilogram.

Though these slaughter houses look relatively clean, some of them are not fully equipped yet, as they lack many modern and electrical equipment for the whole processes of slaughtering, cleaning, cutting and packing for freezing. These slaughter houses supply a bulk volume of pork to wholesalers and meat processors in Pokhara and Kathmandu; however, in accordance with the meat processors, the quality is not at par yet with the imported pork and carcasses in terms of cleanliness, pieces and temperature maintenance.

From the eastern Terai of Nepal (Jhapa, Sunsari), live pigs especially the black pig locally known as Dharane Kalo Bangur are exported to Kathmandu for slaughter. Similarly, live pigs for slaughter and sale in Kathmandu valley also enters from Nuwakot and Kavre districts.

2.2.5 Individual Pork Sellers and Daily Sales of Pork in major hubs

Individual pork sellers have direct contacts with the local consumers and many of them have their loyal buyers as well. They can also change the price of pork in the markets by reaching a consensus among the members of pork sellers' association. These individual sellers sell the pork to the people and restaurants around the locality hence have a significant position in the entire pig/pork market and its value chain.

Many of the individual pork sellers in Dharan slaughter pig by themselves (after they buy live pigs from farmers or individual pig raisers) and very few buy from others at a wholesale price. Besides, some of the pig rearers in Dharan, slaughter pigs by themselves and share with or sell pork to, the neighbors and individuals who live around on rotational basis.

In Jhapa, Rasuwa and Nuwakot the individual pork sellers slaughter the pigs by themselves. In Kathmandu, some slaughter by themselves and others buy from the wholesalers. Pokhara consists of a larger number of individual sellers who buy pork from the wholesalers. There are considerable number of individuals in Pokhara, who rear and slaughter pigs by themselves as in Dharan.



These individual pork sellers in all the major hubs sell varying quantities of pork ranging from 10 to 300 kg daily depending on demand from their loyal as well as fixed customers, the area they cover and the quality of pork they sell. The retail price also varies from one district to another depending on the availability of pigs, the wholesale price and the quality of meat.

Individual pork sellers sell the highest volume of pork in Kathmandu valley covering 50% of total sales volume in Nepal

Daily sales of Pork by Individual Sellers in major hubs of Nepal have been calculated as under, based on information provided by the people contacted in different districts covered by the study:

Table 5: Daily Sales of Individual Pork Sellers in major pig/pork hubs of Nepal

District/City	Total Sales (kg)	Retail Sales Price (per kg)	Total Sales (Rs.)	Total No. of pigs	Wholesale Price (Rs.) per kg
Pokhara	3500	350	1,225,000	50	280
Dharan	3850	240	924,000	55	180
Kathmandu	11900	330	3,927,000	170	250
Jhapa	2800	240	672,000	40	160
Rasuwa	40	300	12000	half	-
Nuwakot	150	300	45,000	2	200
Banke	900	240	216,000	13	170
Bardiya	700	220	154,000	10	170
Total Daily Sales	23,840		7,175,000.00	341	

(Individual sellers also consist of wholesalers who sell pork at retail price).

The total daily sales of pork in major market hubs is almost 24 tons (23840 kg) i.e. 341 pigs, with a monetary value of Rs. 7,175,000.00. This indicates that the daily demand of at least 341 pigs or 24 tons of pork exists in major pig/pork market hubs of Nepal. The highest sales of fresh pork among the major market hubs is in Kathmandu covering 50% of total daily sales.

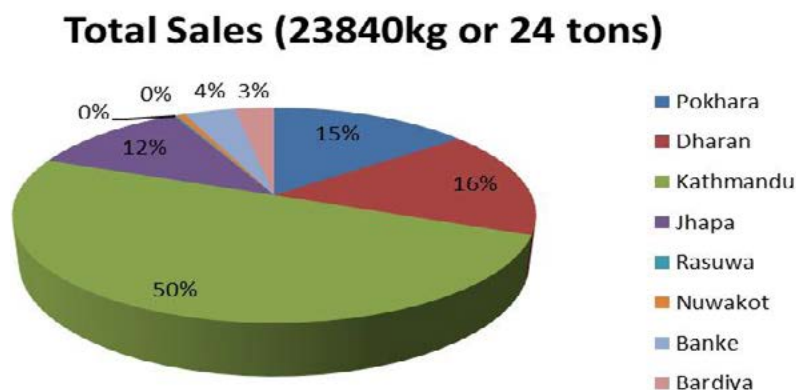


Figure 4: percentage distribution of daily sales of pork among different markets in Nepal

As per above table, the volume of pork supplied to Kathmandu from Banke and Bardiya is also significant (49 tons per month or 1633 kg per day), which can be taken as part of total consumption in Kathmandu (though the processed products are sent to other districts as well – as finished products for sales later on in the super markets).

2.2.6 Hotels and Restaurants

Hotels and restaurants, as one of the major market players in the pig/pork market system, use a considerable volume of pork items to serve to their customers. There are big as well as small hotels and restaurants in different pig/pork hubs of Nepal which serve different cuisines prepared from pork. Big star hotels serve pork items such as ham, bacon, sausage and chops to their customers (mainly tourists from all over the world), in breakfast or lunch and dinner. Small hotels and restaurants serve fried pork, momo, barbeque and other food items - both tourists and local.

The following table presents the volume of pork and pork items used by star rating hotels in Kathmandu and Pokhara and small restaurants in other major pig and pork hubs of Nepal:

Table 6: Consumption of pork and pork items by hotels and restaurants (monthly)

Districts/ Cities	Fresh Pork (kg) daily	Rate Rs.	Monthly Fresh pork kg	Total Rs. (A)	Pork Items Kg. (monthly)	Total Value (Rs.) (B)	Total Value of Pork consumption in Hotels & Restaurants (Rs) (A+B)
Pokhara	250	350	7500	2,625,000	9680	6,408,160	9,033,160
Dharan	290	240	8700	2,008,800	-	-	2,008,800
Kathmandu	400	330	12000	3,960,000	7480	4,951,760	8,911,760
Jhapa	225	240	6750	1,620,000	-	-	1,620,000
Total	1165		34950	10,213,800	17160	11,359,920	21,573,720

Hotels and Restaurants in Dharan and Jhapa rarely serve pork items (processed) to their customers

Hotels and restaurants in Rasuwa, Banke and Bardiya use a negligible volume of pork to serve to their customers, hence such amount is considered as insignificant to calculate the total volume of pork used in hotel and restaurants of major hubs. Pokhara being a tourist destination has larger number of hotels and restaurants that serve different food items using pork, hence it has the highest volume of pork items and fresh pork used in the hotels. The following diagram depicts the percentage distribution of sales amount of pork and pork items in major market hubs of Nepal:

Ribs, fried cubes and bacon are in high demand in big hotels. Fried slices, barbeque and momo are popular in small restaurants. Chinese and Korean restaurants have their own menus for visitors from China and Korea.

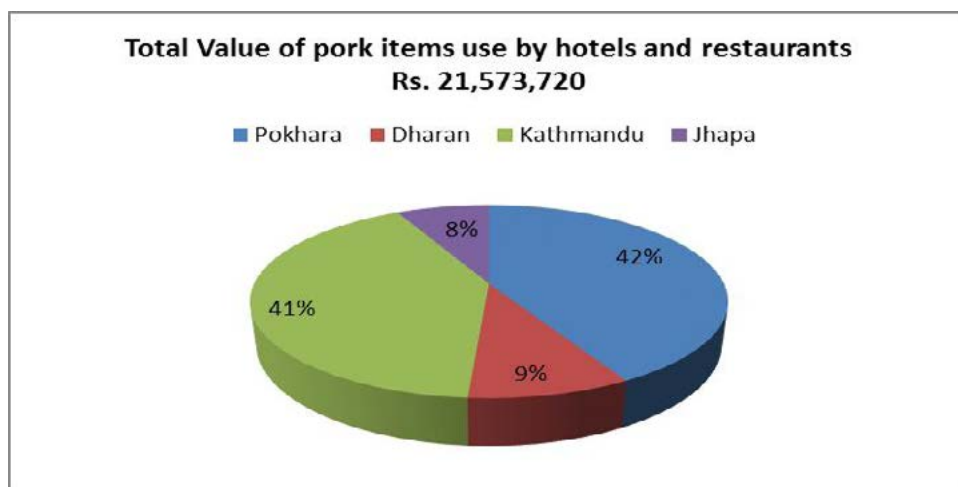


Figure 5: Total Value of Pork and Pork Items used by hotels and restaurants in major hubs

2.2.7 Meat Processing Industries and their existing channels of marketing

Meat Processing Industries are the significant market players in pig and pork market, since they purchase a considerable volume of pork to process and produce packed items such as ham, bacon, sausage, chops, salami etc. Such items are generally bought by hotels and restaurants to serve their customers and also by individual households for own consumption. There are six meat processing industries in Kathmandu, three in Pokhara, one in Dharan, one in Tarahara (Sunsari) and one in Itahari respectively. Some of them are big - especially those operating in Kathmandu and Pokhara, and others such as those in Dharan, Tarhara and Itahari are operating at a very small scale and buy small quantity of pork from local market to produce sausages.

Processing Industries in Kathmandu procure carcasses and cut pieces of pork from the local as well as outside suppliers. They also import (please refer to table 11 for total import figure) pork from other countries such as Thailand to produce processed pork items. Kathmandu alone gets 49 tons and Pokhara 10 tons of pork every month from Banke and Bardiya; major portion of such volume is received by meat processing industries operating in Kathmandu and Pokhara.

Channels of Marketing

Departmental Stores: All the processing industries have agreement with departmental stores in Kathmandu, Pokhara and Dharan, for sales of their pork items. They supply their products weekly or fortnightly and receive payment of the same after certain period of time which is mentioned in the contract/agreement. Processing Industries also supply their products to other general stores which are operating to sell varieties of goods to the local consumers.

Many hotels and restaurants buy pork items from these stores as they also have contract/agreement with them to procure goods that are frequently used by the hotels and restaurants. This, as the indirect channel to get pork items, has been used by many hotels and restaurants in Kathmandu and Pokhara. Hotels and restaurants having contract with the departmental stores pay the money for the goods purchased based on the agreement they have signed. Departmental stores, thus, are the main channel for the meat processing industries to sell their products to hotels, restaurants and ultimate consumers.

Hotels and Restaurants: Some of the processing industries prefer to have a direct agreement with the hotels and restaurants for supply of their products. (For example – Hotel Summit has

Meat Processing Industries use departmental and general stores, hotels and their own outlets as marketing channel to reach the ultimate consumers

agreements with more than one processing industries). They supply pork items depending on the order of the hotels and restaurants and receive payments afterwards based on the agreement signed by both the parties.

Own Outlets: Some of the processing industries (such as Nina and Hager) have their own outlets where they sell their products to the customers who know them and who are loyal to the industry. Many of the expatriate staff of diplomatic agencies and international organizations prefer to buy pork items from the individual outlets of particular processing industries whom they have known for quality and price.

Local customers also buy from these outlets which are operated and managed by the processing industries themselves, as they can get fresh items at a lower price.

The diagram depicts the flow of pork items from the processing industries to the ultimate consumers through different channels:

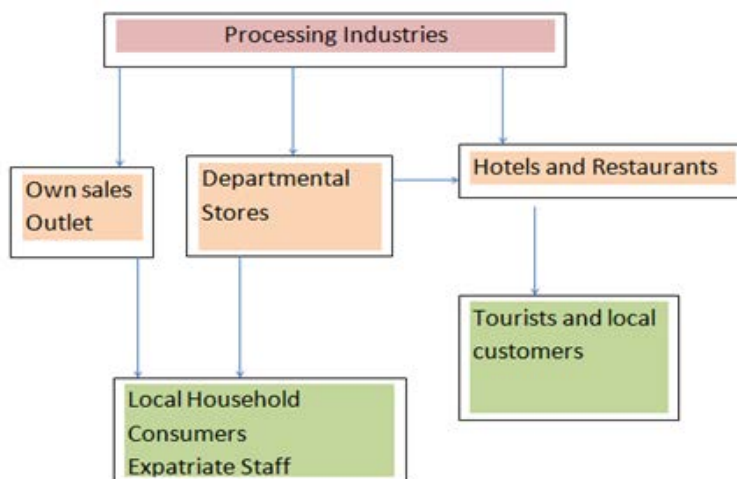


Figure: 6 Marketing Channel of Food Processing Industries

2.2.8 Pig/Pork Value Chain Analysis

The pig and pork value chain consists of different functions, actors and enablers – each of them having specific role to make the value chain complete. It would be worth explaining briefly the value chain to enhance the understanding of every component within it:

Value Chain Actors and Functions

1. Feed Producers/Sellers: Feed producers and sellers are important players in the pig and pork market system, as many of the pig farmers have to rely on feed produced and sold in the market. Slight increase in price of pig feed will have significant impact on the overall profit of the farm, as this directly effects the volume of feed purchased and daily intake of the pigs in the farms. Most of the feed is imported from India and sold in the markets of Nepal. Feed sellers in Jhapa bring the feed from Birgunj to supply to the farmers thus making the cost higher because of expenses incurred in transportation.

There are few feed industries in Banke which also import some of the ingredients from India that makes the cost of production higher. Pig farmers who solely depend on feed produced by the factory to rear their pigs have made lower profit and many instances even incurred losses because of the higher costs of feed. Considering such a difficult situation of higher feed price, a feed industry operated by the Krishak Sahakari in Pokhara is trying to produce feed fully based on locally available raw materials to make the cost of production low. Some of the farmers are using feed from this industry, particularly the member of the cooperative, for their pigs. However, the performance of pigs with this feed is yet to be evaluated.

The price of feed in Pokhara is Rs. 30 per kilogram (produced by Krishak Sahakari Sanstha); in Nepalgunj it is Rs. 27 to 35 per kg depending on mixture and quality. The farmers in Dharan have to pay Rs. 52 to Rs 54 per kg of feed depending on quality particularly for creep feed, and Rs. 43.00 per kilogram in Birtamod. The price of

feed varies from place to place. The quality and price of feed largely affect the intake of feed by the pigs and their growth which subsequently affects the price of pigs and pork in the markets.

2. Breeders/Cooperative Breeders: Breeders are the farmers who produce piglets for sales to the individual fatteners and pig farms which fatten the pigs for slaughtering and also reproduce piglets for their own farms and sell to other individual fatteners as well. Many cooperatives in pig and pork hubs are active in breeding with the supports from DLSO and NARC. The sale price of one piglet ranges between Rs.3500 Rs. 4500.00 depending on quality and health of the piglets.

Each of the actors in the value chain has specific function to make the chain complete

3. Middlemen/Transporters: Middlemen and transporters buy piglets or pigs from the farmers and transport to other districts or even to the border to sell to the internal as well as external (outside the country) customers - particularly in India. The piglets are transported for fattening and also for breeding, and the fattened pigs are for slaughtering.

These middlemen transported high number of piglets from eastern region at a very low price i.e. Rs. 500 to Rs. 1000 per piglet after the earthquake and sold to farmers of KhaireniTar, Syangja, Baglung and Parbat at Rs 3500.00 this getting a very good margin of profit.

4. Individual Rearers/Fattening Centers and Cooperatives: There are numerous pig fattening centers and cooperatives in Nepal, where the piglets are kept for 5 to 9 months with a routine feeding to make them gain required weight for selling and profit making. Many individuals in pig and pork market hubs rear pigs in their backyard by feeding them the garbage and locally available materials, which reduces the cost of production. Fattening centers and the individual rearers or pig farmers are the main suppliers of pigs for slaughtering, hence they play a crucial role to address the demand of pork and in the market. They generally sell live pigs at Rs. 150 to Rs. 200.00 per kilogram depending on the market hubs where they are, and the prevailing demand of pork at the point of selling.

5. Individual Slaughterers: They also act as middlemen between the farmers who fatten pigs for sale and the ultimate buyers who buy and consume pork and have the direct linkages with the consumers and the farmers. They pay a lump sum amount to the farmers for the pigs and slaughter them to sell in the local markets. Their selling price ranges from Rs. 240 to Rs. 350 per kg depending on the market hubs they are operating.

6. Slaughter Houses and Wholesalers: Slaughter houses and wholesalers buy a number of pigs from the farmers at a time and slaughter them to sell to the individual pork sellers and also to supply in bulk to the meat processors and hotels. Many of these preserve pork in their cold store before they supply to the bulk buyers. They transport pork by trucks with air conditioning fitted in the container. The frozen packets of pork and cut pieces are loaded in these containers to transport to Pokhara and Kathmandu particularly from Banke and Bardiya. The temperature inside the transport vehicle is maintained at -10°C.



As they buy pigs in a large number, their role to set the price at the local level is important. Currently they buy live pigs at a price of Rs. 150 to Rs. 200.00 per kilogram and sell the cut pieces or carcasses at Rs. 220 to 280.00 per kilogram depending on the towns, cities or districts where they exist and operate.

7. Individual pork sellers: These pork sellers buy pork from the slaughter houses or wholesalers or even from the individual slaughterers (at wholesale price) to sell it to the ultimate consumers, hotels and restaurants. They add some margin to the price they have paid for the pork and sell it. Generally they follow the market retail price for selling.

8. **Meat Processors:** Meat processors buy pork in bulk, process and produce pork products to sell in the market. They significantly add the value and supply the processed products to meet the consumers demand for their different tastes. There are number of meat processors in Kathmandu, Pokhara, Dharan, Tarahara and Itahari, who produce pork sausages, ham, bacon, pork chops, salami and kima. They have direct contacts with big stores, hotels, small general stores; and also the final consumers through their own outlets.

9. **Departmental Stores:** The big stores buy pork items such as ham, bacon, sausages, chops and kima from the meat processors and sell to the customers by adding certain profit margin to the price which they pay to the sellers. They sell such items to the hotels, restaurants and ultimate consumers through their meat section in the store. These stores generally develop special agreement with the meat processors and also with the hotels which buy pork items from them on a regular basis.

10. **Hotels and Restaurants:** Big hotels with star ratings have special contracts with the departmental stores and the meat processing industries to buy pork items in a certain quantity with special price for a fixed period of time, which is being renewed on its termination with another negotiation on volume and price. These hotels buy ham, bacon, sausage and chops from the stores or the processing industries.



11. **Domestic Customers:** They are the local consumers who buy pork and pork items from the stores, individual slaughterers or pork sellers, wholesalers and also dine at the hotels and restaurants occasionally or frequently. These customers, as per their capacity and costs, fall into special segments of pork market. Some are regular buyers of pork items, some prefer fresh pork in a small quantity and some dine frequently at hotels and restaurants for specific tastes. These customers hold a significant portion or percentage of pork market in Nepal.

12. **International Customers:** There were some buyers (in India) who used to place orders for pigs or piglets to the Nepalese breeders or fatteners in order to supply the pigs and piglets to certain slaughter house and pig rearers in India. There used to be a good cross border business of pigs and piglets before the earthquake and the blockade at the border; it has now been noticeably declined as the security force at Indian border has restricted and controlled the business. However some very small volume of business through informal channel is still going on at the border.

Value Chain Enablers:

- i. **District Livestock Service Office (DLSO):** This is the front line service provider to enable the environment of breeding, fattening and pork selling. DLSO has various schemes which range from providing vaccination, medication, technical advices, artificial insemination to cash grant for cooperative pig farming and physical infrastructure support to help the farmers to become sustainable in pig farming.
- ii. **Centre for Environmental and Agricultural Policy Research, Extension and Development (CEAPRED)/SAMARTHA:** CEAPRED/SAMARTHA is providing indirect support (by strengthening the infrastructural capacity) to the farmers and slaughter houses so that they can follow a standard for quality production and sales in national and external markets. Some slaughter houses and farmers have got supports from this organization in eastern as well as mid-western regions of Nepal. The support has been also extended for production enhancement (e.g. import of frozen semen for genetic improvement of the stock), promotion of fresh semen AI, adoption of good husbandry practices and capacity enhancement of the producer farmers and market actors through trainings and workshop.
- iii. **Project for Agriculture Commercialization and Trade (PACT):** PACT is providing cash grant support to the farmers and slaughter houses for infrastructure development. Some of the pig farmers and slaughter houses in the pig and pork hubs have got support from PACT for infrastructure development.

- iv. **Pig Entrepreneurs' Association of Nepal (PEAN):** PEAN works for promotion of pig and pork sector by providing relevant information to the pig farmers, organizing pig and pork festivals and developing linkages with market players as well as government for marketing and policy support. PEAN exists in most of the district of pig and pork hubs and is providing relevant support to the farmers for quality production and cost reduction.
- v. **Agro Enterprise Center (AEC):** AEC supports the farmers in market creation and strengthening to promote the agriculture and farming activities in Nepal. AEC can play a leading role to develop linkages of pig farmers with national as well as international markets.
- vi. **Nepal Agriculture Research Council:** NARC conducts various researches to develop new technologies in pig production including new breeds and breeding strategies for pig production as well as the source of semen of new breeds that are suitable to the local environment for profitable pig production. Many pig farms have got supports from NARC for new and profitable breeds.
- vii. **Meat Entrepreneurs Association:** These associations at the district and city level work to promote clean meat sale at a reasonable price so that meat sellers could earn appropriate profit and customers get clean meat.

The following map provides a clear understanding of relevant functions, actors and enablers in the Pig and Pork Value Chain:

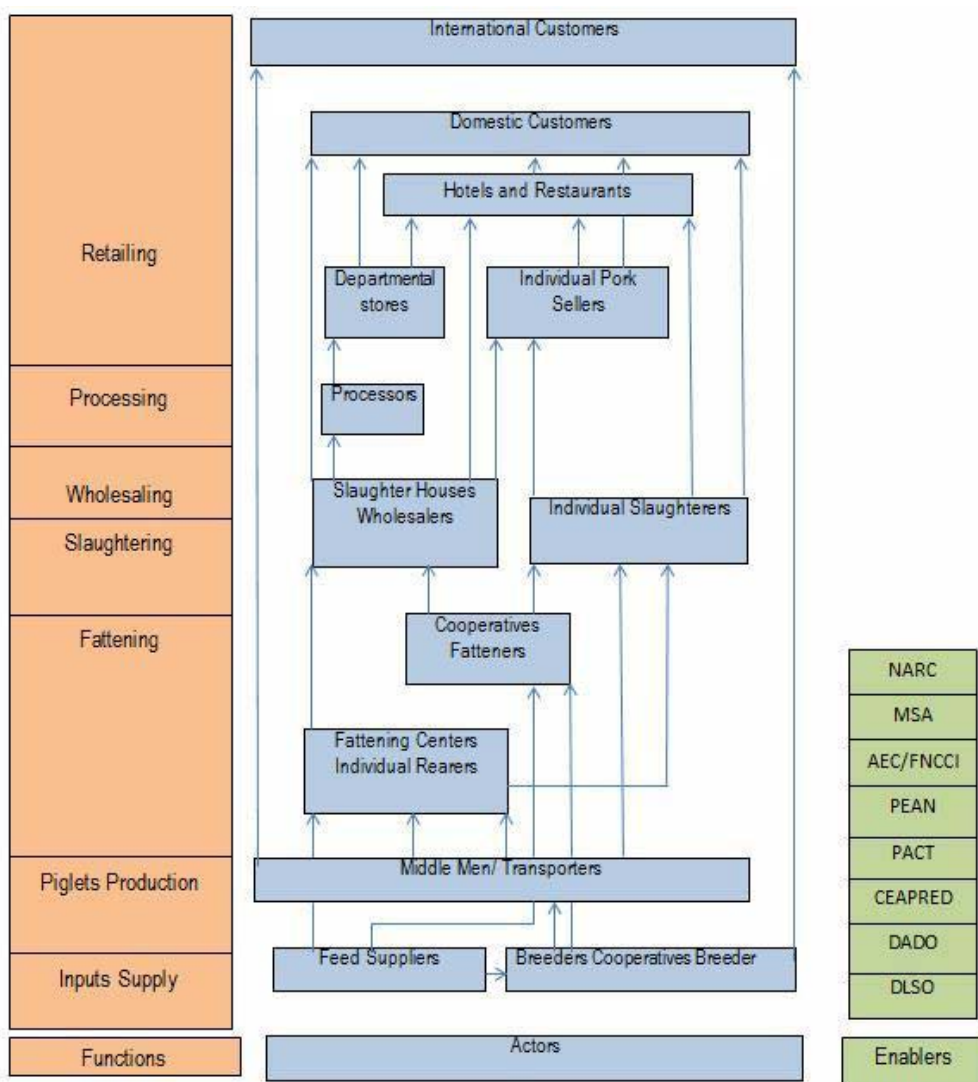


Figure 7: Value Chain Map of Pig and Pork Sector

2.2.10 Quality of pigs/pork demanded by market players

Market players in the pig and pork market system are quality conscious and want to get return on price they have paid for the products. As different player has different roles in terms of quality, a brief analysis on this will help to understand the demand of each of the players on quality of pig and pork:

Each of the market players is quality conscious as the return on price paid for the products is important for everyone.

Breeders: They always prefer a quality sow and matching semen/ quality boar for piglet production. They, during the survey, repeatedly raised concerns about high quality breed for more piglet production with better growth rate.

Fatteners: Fatteners have concerns about high quality piglets which can grow faster and gain weight rapidly. They also look for quality feed from the feed suppliers so that there could be required nutritional ingredients in the feed which help the piglets to grow swiftly. The major concern has been the high feed cost and poor feed conversion efficiency.

Slaughterers: Pigs with a weight of 80 to 90 kilogram are preferred by the slaughterers, since such pigs have required fat and can be sold easily by mixing fat with lean meat.

Individual Pork Sellers: They do not want mixed meat (as sometime the slaughterers mix the sow with the fattened pigs to get more profit) and want to sell a pig which has a weight of 70 to 80 Kilogram.

Meat Processors: They order different types of pieces such as leg pieces, bellies, skinless and mix for different products they produce at their factory. They pay higher price for skinless bellies and leg pieces than that of mixed pieces. They prefer clean and well cut pieces to produce different items.

Hotels and Restaurants: Big hotels buy whole leg piece and bellies by paying slightly more to the pork sellers. Small restaurants buy mixed pieces for “fried” and “barbeque” dishes. Star hotels look for well processed and firmly packed pork items so that they do not get spoilt if kept for some days in the freezers. Some of the five star hotels are even curious to find out the certification for the pork items they are buying.

Departmental Stores: They look for good packaging and enough storage period of the pork items they sell to the consumers.

Ultimate Consumers: The choice of the meat differs from consumer to consumers. During the survey it was noticed that some of the customers were asking for fatty meat, and some others lean meat. But everybody showed a concern on hygiene and clean meat.

2.3 Pork Consumption and Demand in Nepal

Consumption and demand of pork in Nepal has been drawn from the analyses and findings under different headings of the preceding section and other information collected during the field survey of this study. Thus, the basic methodology of calculating demand of pork in Nepal has based on the daily slaughtering of pigs in different pig and pork market hubs, periodic supply of pork by the slaughterers to the meat processors and volume of imported pork or pork items. Demand of pork by the individual households, meat processors, hotels and restaurants provide the total demand in the country.

The following sub-chapters present the detailed findings on pork consumption and demand at the local level, seasonal effects and overall demand of pork at national level.

2.3.1 Local Household Consumption and Demand of Pork in different market hubs

The number of pigs slaughtered and volume of pork sold on daily basis indicates the demand of pork in a particular area. Every slaughtered pigs is not bought only by the household consumers as there are hotels, restaurants and barbeque centers which also buy pork to serve their customers. In each of the market hubs there are hotels and restaurants which buy pork in different volumes depending on the number and size of customers they serve. The table depicted below presents the percentage distribution of purchase of pork by ultimate consumers and hotels or restaurants: Table 7: Local Consumption and Demand of pork in different market hubs of Nepal

District/City	Total Sales (kg)	Retail Sales Price (per kg)	Total Consumption by the hotels and restaurants – daily (kg)	Net Daily Household consumption - (kg)	Net Consumption Value (Rs.)
Pokhara	3500	350	250	3250	1,137,500.0
Dharan	3850	240	290	3560	854,400.0
Kathmandu	11900	330	400	11500	3,795,000.0
Jhapa	2800	240	225	2575	618,000.0
Rasuwa	40	300	-	40	12000.0
Nuwakot	150	300	-	150	45,000.0
Banke	900	240	-	900	216,000.0
Bardiya	700	220	-	700	154,000.0
Total Daily Sales	23,840			22,675	6,831,900.0

(based on the information provided by the meat sellers associations, hotels, restaurants, individual meat sellers, and meat suppliers of Pokhara, Dharan, Kathmandu, Jhapa, Rasuwa, Nuwakot, Banke, and Bardiya).

The total daily household consumption of pork is 22675 kg with a total monetary value of Rs. 6,831,900.00 in the major pig and pork market hubs which were visited for the study. As each of the market hubs shown in the above table has a population composition of different ethnic groups and so is the situation with the total number of households, it is difficult to quote the consumption of pork by the individual households. Hence, the table presents only the total consumption and demand of pork in each of the market hubs which were visited for the study.

2.3.2 Demand of pork and pork items by Hotels and Restaurants

Hotels and restaurants use fresh pork as well as processed pork items to serve their customers on day to day basis. Some hotels, particularly big with star ratings, do not use fresh pork much as they are highly conscious on hygiene; hence they use only processed pork items. However, small restaurants in major pig and pork hubs use smaller volume of pork daily to prepare different items such as momo, fried pieces, barbeque and others as demanded by the customers. Fried slices, barbeque and momo are particularly popular items in small restaurants.

The total daily demand of fresh pork by the hotels and restaurants in major hubs is 1165 kg with a total monetary value of Rs. 343,100.00, whereas the total demand of pork items by the same is 572 kg with a monetary value of Rs. 378,663.00 (Table 8).

Table – 8 Demand of fresh pork and pork items by the hotels in major hubs

Districts/Cities	Fresh Pork (kg) daily	Total Value (A)	Pork Items Kg. (Daily)	Total Value (B)	Total (A+B)
Pokhara	250	87,500	323	213,605	301,105
Dharan	290	69,600	-		69,600
Kathmandu	400	132,000	249	165,058	297,058
Jhapa	225	54,000	-		54,000
Total	1165	343,100	572	378,663	721,763

The hotels and restaurants buy fresh pork and pork items based on demand of the customers, hence the volume of fresh pork and pork items which they buy daily is a clear indication of total daily demand of such items by hotels and restaurants in major hubs. It should be noted that pork items are generally consumed by the tourists in the star rating hotel and minimal quantity of such items are also consumed by Nepalese people who stay at such hotel occasionally for special purposes.

2.3.3 Seasons affecting sales of pork

Sales of pork is high during winter season in all major pig and pork market hubs of Nepal. The normal sales increases by 40% to 50% during winter in all market hubs which were visited for the study. Festive seasons such as Dashain, Tihar, New Year's Day and Christmas Day are other special occasions where the sales increases by the same percentage. Sales decreases by 50% or even higher during rainy season.

2.3.4 Sales and Consumption Trend

During the survey it was transpired that the sales and consumption of pork and pork items is increasing by 10% every year in every district that was visited for the study as mentioned by the departmental stores, wholesalers or suppliers, processors and slaughterers stated this, though, there was no any written or recorded information available to verify this information. Increasing population may be attributed to the increase in consumption and sales of pork and pork items every year, in addition to the urbanization of many small towns, income from different sources including remittance, are slowly changing the traditional attitude of people towards food items. Pork and pork items were among the ones which were not consumed by many; but with the changes, these items are becoming common to all people (though many of them do not cook it in their houses).

Pokhara and Kathmandu may experience different trend of consumption and price every year influenced by tourist flow. Pokhara is more sensitive in this regard, as the total demand of pork declined sharply in this city after the earthquake and during blockade when there was minimal flow of tourist. In

case of higher flow of tourists to Kathmandu and Pokhara the demand and consumption trend will increase sharply, by more than 10 or 15 percentage and the price can also increase accordingly or it will follow the prevailing inflation trend. The following projection has assumed that the price of pork will also increase by 10% in the coming years but it may change if negative factors such as rumor of swine-flu and foot and mouth disease spread in the markets. Price of pork is also affected by supply and quality hence will vary frequently and sometime even decrease following the prevailing market forces.

Consumption and sales of pork has been increasing by 10% every year

Table 9: Projected Trend of Daily Consumption and Price of pork in different market hubs of Nepal

District/City	Current Consumption and Price Trend (2015/16)		Consumption and Price Trend in 2017/18 (10% increase)		Consumption and Price Trend in 2018/19		Consumption and Price Trend in 2019/20	
	Total Sales (kg)	Retail Sales Price (per kg)	Total Sales (kg)	Retail Sales Price (per kg)	Total Sales (kg)	Retail Sales Price (per kg)	Total Sales (kg)	Retail Sales Price (per kg)
Pokhara	3500	350	3850	385	4235	425	4659	470
Dharan	3850	240	4235	265	4659	290	5125	320
Kathmandu	11900	330	13090	360	14400	395	15840	435
Jhapa	2800	240	3080	260	3388	285	3727	315
Rasuwa	40	300	44*	330	48	365	52	400
Nuwakot	150	300	165	330	182	365	200	400
Banke	900	240	990	260	1090	285	1200	315
Bardiya	700	220	770	245	850	270	935	300
Total Daily Sales	23,840		26224		28852		31738	

**If Chinese workers resumed works in the hydropower projects that are being constructed along the Dhunche– Rasuwagadhi road, the demand of pork will significantly increase, and so will be the case in Pokhara if the Chinese workers started working for construction of the International Airport.*

The price of pork meat tended to rise steadily over last decade, however, with increased production and post-earthquake and blockade consequence, decline in the price of pig/ pork particularly to the producer farmers have been noticed.

Table 10: Trend of average annual pork price over years (Rs/ kg) in Nepal

	2001/02	2002/03	2003/04	2004/05	2008/09	2009/10	2010/11	2011/12
Pork	82.6	82.77	86.87	89.92	126.11	166.0	185.92	200.45

Source: MoAC (2012)

2.3.5 Import of pork items in Nepal

Many processing industries and star hotels import pork cut pieces or the carcasses and pork items for their specific purposes of processing and serving the customers respectively. They buy a reasonable volume of such items from the local markets and also import from other countries for specific quality requirements. The main countries that supply pork and pork items to Nepal are Thailand, China, Italy, Denmark, UK, and the Netherlands. India has supplied live pigs to Nepal during the previous years.

The following table provides information on cost and volume of pork and pork items that are imported to Nepal from different countries:

Table 11: Import of live pigs, pig meat and pig products²

Products/ commodities	Country	Unit	2012/13		2013/14		2014/15	
			Quantity	Value (Rs.)	Quantity	Value (Rs.)	Quantity	Value (Rs.)
Live Swine <50 kg LW	India	pcs	2226	3,740,160	19,398	62,801,251	-	-
Live Swine >50kg LW	India	pcs	730	1,160,748	1143	1,906,866	-	-
Live Swine	China	-	-	-	-	-	660	68,272
Swine Meat – Frozen	Thailand	kg	981	90,193	-	-	-	-
Swine Meat - Chilled	China/Thai	kg	9050	1,273,013	-	-	-	-
Swine Meat - Fresh	China	kg	-	-	100	16,355	-	-
	Netherlands	kg	-	-	90	121,742	-	-
	Italy	kg	-	-	-	-	32	86,632
Pig Bristle	India/China	kg	1705	221,250	-	-	-	-
Processed Meat Products:								
Hams and cuts of swine	Denmark	kg	-	-	163	34,394	432	93926
Hams and cuts of swine	Italy	Kg	-	-	-	-	37	207,234
Shoulders and cuts	Denmark	kg	-	-	-	-	654	178,196
Preserved meat, meat of blood and mixture	Denmark	kg	-	-	3379	726,320	1620	352,223
Preserved meat, meat of blood and mixture	UK	kg	-	-	21	7671	-	-
Bellies	Italy	kg	-	-	-	-	18	14,388
Total				6,485,368		65,614,599	3453	1,000,871

In the year 2014/2015, live pigs were not imported from India, which can be attributed to blockade imposed by India at the border and also sufficient production of pigs within Nepal. The total amount spent to import pig/swine products in the year 2014/15 is lesser as compared to the year 2013/14 because no pigs were imported from India during this year. This also indicates that the quantity of imported pig products (3453 kg) is not very large as compared to internal supply of pigs and pig products in Nepal. In the years 2012/13 and 2013/14 the total amount of import i.e. Rs. 6,485,368 and Rs. 65,614,599 include the amount spent on importing live pigs from India, which was Rs. 4,900,908.00 and Rs. 64708117.00 respectively. This means enough production of piglets inside the country would help reduce the import of live pigs from India.

Table 12: Export of Pigs from Kakarbhitta Checkpoint

	2011/12	2012/13	2013/14	2014/15	2015/16*
Pig Export (Number)	6709	1732	3657	7172	286

* Up to Chaitra

The export figure in 2014/15 was higher due to closure of Pashupatinagar checkpoint. There is also some unnoticed export from the checkpoint.

2.3.6 Demand of pork in Nepal

Demand of pig and pork in Nepal can be calculated by adding slaughtered pigs for local consumption in different pig and pork market hubs, supply of pork from other districts to Kathmandu and the total imported quantity of pig products together. For this, annual local consumption can be derived from daily consumption, and annual supply of pork and pork items from the volume of monthly supply. The following table provides the total consumption and demand status of pig and pork items in different market hubs:

² Nepal Foreign Trade Statistics, Trade and Export Promotion Center

Table 13: Consumption and Demand of pig and pork in Nepal (major hubs + import quantity)

	Pokhara	Dharan	Ktm valley	Jhapa	Rasuwa	Nuwakot	Banke	Bardiya	Total
Total Daily Sales and Demand (kg)	3500	3850	11900	2800	40	150	900	700	23,840
Total Annual Sales and Demand MT (A)	1260	1386	4284	1008	14.4	54	324	252	8582.4
Total Annual Sales (Rs. In million) (D)	441	332.64	1413.72	241.92	4.32	16.2	77.76	55.44	2583
Annual Pork supplied from other districts to KTM & Pokhara - MT (B)	-	-	-	-	-	-	516	192	708
Total Value of pork supplied from other districts to KTM & PKR (Rs. In million) (E)	-	-	-	-	-	-	123.84	46.08	169.92
Imported in the year 2014/15 Total volume MT (C)	-	-	-	-	-	-	-	-	3.453
Total value of Imports in 2014/15 (Rs. In Million) (F)	-	-	-	-	-	-	-	-	1.0008
Total Annual Demand of Pork in Nepal (A+B+C) - MT	-	-	-	-	-	-	-	-	9293.853
Total Value of Annual demand (Rs. In million) (D+E+F)	-	-	-	-	-	-	-	-	2753.921

Average Selling price of suppliers from Banke and Bardiya is Rs. 240.00 per kg (price differs for specific pieces, hence an average figure)

The calculated volume of demand (i.e. 9293.853 MT) based on demand of major pig and pork market hubs does not represent the total demand of whole Nepal since there are other towns and cities where some volume of pork is consumed. The above figure 9293.853 Mt provides an understanding of the minimum volume of demand of pork and pork items in Nepal and its corresponding value.

This can guide the farmers, service providers, suppliers and other actors in the value chain for relevant activities such as planning of production, sales and supply of piglets or pork to other districts.

2.3.7 Export of pigs and pork items to other countries

Nepal has been exporting live pigs to India, China and pork or pig meat to other countries such as Bhutan, Vietnam and Thailand. It has also occasionally exported skin of pigs to Hong Kong and bristle to India respectively. The number of live pigs exported to India was higher in the year 2014/15 as compared to the years 2012/13 and 2013/14 as the production of pigs was relatively higher during that year. Few live pigs were sold to Chinese workers who were working in Kerung area – unofficially from Nepal only once during 2012/13.

The following table depicts the details of export of live pigs and pork to different countries during the last three years:

Table 14: Export of live pigs, pork and pig products (2012/13 to 2014/15)³

Description of Commodities	Country	Unit	2012/13		2013/14		2014/15	
			Quantity	Value (Rs.)	Quantity	Value (Rs.)	Quantity	Value (Rs.)
Live Swine <50 kg LW	India	Pcs	4807	73,801,500	3119	2,621,200	13189	8,554,500
	China	pcs	326	1,031,992	-	-	-	-
	Thailand	kg	-	-	-	-	139,990	22,224,751
Live Swine >50kg LW	India	pcs	643	925,325	5113	5,096,370	15,138	4,145,000
Swine Meat Frozen	Vietnam	kg	-	-	-	-	980,000	88,486,166
	Thailand	kg	26,220	3,266,882	-	-	-	-
Swine Meat Chilled	Bhutan	kg	-	-	738	70,550	-	-
Swine Meat Fresh	Vietnam	kg	-	-	-	-	308,000	54,437,733
Pig Bristle	India		5744	1,332,756	--	-	-	-
Tanned or crust hides and skin of swine	Hong Kong	Sq. ft	-	-	68,400	4,472,483	-	-
Total				80,358,455		12,260,603		177,848,150

Export of live pigs to India has been restricted by the Indian Security Force at the border for the last 7 months, hence no significant information on export of live pigs exists in quarantine office at Nepal-India border. Unofficial export of pigs and pork to China had taken place in the year 2012/13, however, no pigs are sent to China after that, indicating difficulties to supply pigs to China. Export of pig meat or other pork items to Thailand Bhutan, Vietnam and China does not look stable as gaps of the same in some years have been noticed.

In the total value of export in the three consecutive years, the value of live pigs covers 94%, (75,758,817), 63% (7,717,570) and 19% (34924251) respectively. The number of live pigs exported in the year 2014/15 was the highest in three years, though, as the percentage on the total export figure of 2014/15, it is the least (19%) if compared to the percentage of other years (i.e. 94% and 63% respectively). This indicates that export of other items such as pig meat and bristle increased significantly in the year 2014/15. The

total amount of export of pork and bristle in the year 2014/15 was Rs. 142,923,889.00, Rs. 4,599,638 in 2012/13 and Rs. 4,543,033 in 2013/14 respectively. The export of pork increased by Rs. 56605 in the year 2013/14 as compared to the preceding year and it increased by 138,380,856.00 in 2014/15 as compared to the export in 2013/14; which is more than 300%. It indicates a huge potential of exporting pork and pig related items such as bristle and hide to other countries even in the coming years.

Increased export of pig meat/ pork and pig products in the year 2014/15 indicates a good potential of increasing export of such items in the coming years.

The following diagram depicts total export of live pigs and pig products in different years:

³ ibid

Total Export in Different Years (Rs.)

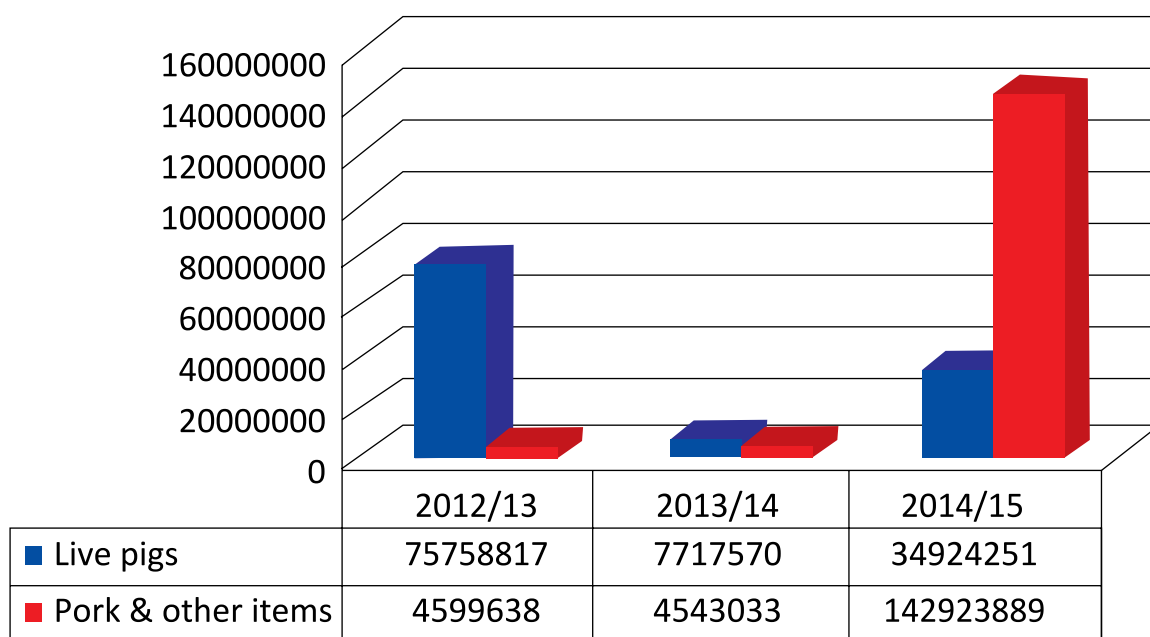


Figure 8: Total export of live pigs and pig products in 2012/13 to 2014/15

2.3.8 Effects/Impacts of earthquake and blockade on sales and price of pigs, pork and pork items:

Different market players have different impressions about the effects of earthquake and blockade imposed by India at the border on their business transactions. The breeders have different experiences from the individual pork sellers, likewise the individual slaughterers have different impressions from the fatteners. Such impressions are different from place to place as well. The most affected actors in the pig value chain were the breeder farmers and fatteners.

2.3.8.1 Impact of earthquake and blockade on daily sales of pork

Kathmandu

The contacted individual pork sellers, except in Pokhara, mentioned that the sales immediately after the earthquake had decreased for some weeks, as people felt difficulties to cook normal food in their houses because of tremor. Since many people were involved in rescue and relief of affected people, they did not have time to buy pork and cook in their houses, hence daily sales was affected. Scarcity of gas and kerosene during blockade affected daily sales to a greater extent in Kathmandu. Daily sales in Kathmandu dropped by almost 50% after the earthquake and it continued to be the same during the blockade period also. It had direct effects on wholesalers as the slaughter houses had to decrease the number of pigs that were being slaughtered daily. The price also decreased by 20% (as wholesale price came down from Rs. 280 to Rs. 230 per kg).

Daily sales slowly increased after the blockade was lifted and it is gradually coming to normal at this time since people have now resumed their normal routine life.

Pokhara

Daily sales of pork in Pokhara has decreased after the earthquake, because of declined order from the hotels and restaurants that are located in lakeside area. The tourists flow to Pokhara has sharply declined after the earthquake and the occupancy rate of the hotels dropped almost to zero for some months affecting the whole tourist industry adversely. This had a direct negative effect on business of pork in Pokhara as the porksellers did not get any order from the hotels and restaurants for fresh pig meat. The retail price also came down to Rs. 350 per kg, which was Rs. 400.00 per kg before the earthquake.

The situation has been changing now with growing demand of pork from the hotels and restaurants as the number of tourists coming to this city has been increasing.

Eastern Hubs (Dharan, Jhapa)

The individual pork sellers mentioned that daily sales of pork had decreased in their individual shops, because of increased number of new shops in the surrounding locality. Individual pig rearers in different wards of Dharan, Damak and even Birtamod also slaughter pigs in their houses and sell to or share with neighbors thus preventing many buyers from coming to market area (since they get pork at their doors from their neighbors on rotational basis). Such practices of individual pig rearers have affected the sales of individual pork sellers in the main market places of most of the towns or cities in eastern region. In reality daily sales of pork has not decreased in the local towns or cities, rather it is increasing or moving upward (though the sales in individual shops has decreased to some extent, because of emergence of other new shops).

However, there has been some decrease in price of pork, as it was Rs. 260.00 per kilogram last year, which has now come down to Rs. 240.00 per kilogram (in Dharan).

The wholesalers or organized slaughterers have not experienced any decrease in sales of pork in the eastern market hubs, although the price dropped to Rs. 200.00 to Rs. 220.00 this year from Rs. 230.00 per kilogram last year.

The pig farmers, on the contrary, suffered a huge loss from the situations that emerged after the earthquake and imposition of blockade at the border. There was a scarcity of feed in the market and also a hike in feed price, hence the farm had to divert to locally available materials to feed the pigs, which was not adequate in terms of nutrition and required quantity. Many piglets and sows, died due to shortage of food, and those which survived were also in a very bad shapes, though they are recovering slowly after the blockade was lifted and the feed became available in the markets.

The Indian security forces on the other side of the border started strict regulation of cross border business of pigs to stop export of pigs and piglets from Nepal. This situation completely stopped sales of piglets and pigs from Nepal to the people in India and Bhutan as well (since pigs used to be slaughtered at Jaya Gaon –India Bhutan border - and pork or carcass was being sold to Bhutan). This resulted in overcrowding of piglets and pigs in the pig farms and additional expenses to feed the unsold piglets. The specific budget of pig farms which was set aside for a limited number of pigs and piglets after careful estimation of sales and production was badly effected and it became short to feed the unsold piglets. As a subsequent affect the farms had to sell the piglets at a very low price and many piglets also died because of lack of feed (as the price had increased and there was also a scarcity of feed in the market).

Banke and Bardiya

The pig farms in Banke and Bardiya confronted with the same problems as the pig farms in eastern hubs faced. Hence to avoid losses from unsold piglets, many of the farms have now started fattening and slaughtering pigs by themselves. The individual pork sellers did not have any problems of selling. They got the pigs from the farmers even at a lower price, since there was also a rumor of swine-flu and many farmers sold their pigs at a cheaper price to avoid huge loss.

2.3.8.2 Impact of earthquake and blockade on Departmental Store

The sales of pork items in departmental stores of Dharan and Kathmandu were not affected adversely for long after the earthquake and even during the blockade. In Dharan, the pork items are mostly consumed by the local consumers, hence the demand and sales was stable after one or two weeks of the earthquake. In Kathmandu, some of the hotels mentioned that the purchase of pork items increased because of inflow of many INGO staff to Kathmandu after the earthquake, which consequently increased the sales of departmental stores as well.

However, the sales of pork items was effected negatively in some departmental stores of lakeside in Pokhara, because of decreased demand from the hotels (since the inflow of tourists to Pokhara was almost zero after the earthquake and also during blockade by India at the border - and there was not any demand from the hotels for pork items). The sales of pork items in the departmental stores located at city areas was not affected, since the local consumers bought such items as usual. At present, with the increased occupancy in the hotels of Pokhara, demand and sales of pork items is gradually growing at the departmental stores.

2.3.8.3 Impact of earthquake and blockade on Meat Processors

There were some negative impacts of earthquake and blockade on the processors. A huge volume (worth Rs. 8,000,000.00) of pork and carcasses being imported by one of the meat processor was spoilt in the containers which were stopped on the other side of the border during the blockade. This affected the production and even sale/transactions of the processors. The amount of loss can be estimated in tens of millions of rupees (the exact amount could not be known). The processors in Pokhara experienced some decrease in sales as the demand of pork items from the hotels at lakeside had decreased for very low occupancy level.

The daily sale of the processed pork (bacon, ham, sausage) dropped significantly due to complete halt in the flow of tourist in the country resulting closure of many star hotels and restaurant as a consequence of earthquake and blockade. One of the main pork processing industries (**Fewa Meat Processing**) reported that the daily sale dropped more than 60% in volume as compared to the daily sale just before the earthquake.

2.3.8.4 Impact of earthquake and blockade on Suppliers

Suppliers from districts other than Kathmandu did not have any impacts on demand and sales of pork and specific cut pieces, as they continuously got demand of pork from the processors and wholesalers (who have cold storage in Kathmandu). They continuously supplied the agreed volume to the processors and the Meat Marts who were in their contacts. Suppliers in Kathmandu had some problems to transport pigs from other districts during the blockade for scarcity of fuel.

2.3.8.5 Impact of earthquake and blockade on Hotels and restaurants

Hotels and restaurants in Pokhara were badly affected by earthquake and blockade since the tourist inflow to this city was almost nil (please refer to “Pokhara” in the above section 2.3.8.1 for details). But the hotels in Kathmandu had good occupancy rate even after the earthquake since a large number of international staff travelled to Kathmandu for rescue and relief works. However many small restaurants had to cut some items from their menu because of shortage of fuel (to cook all the items) during imposition of blockade at the border.

2.3.8.6 Impacts of earthquake and blockade on cross border business of pigs and pork

Before the earthquake, every month almost 1200 piglets used to be sent to Sikkim and Darjeeling; and equal number of fattened pigs to Jaya Gaon for slaughtering and supplying pork pieces and carcasses to Bhutan. There was some decrease in the quantity of piglets and fattened pigs sent to India and Bhutan as some of the farmers were affected by the earthquake. It was further deteriorated, during the blockade, as sales of piglets and transportation of pigs from Nepal was completely restricted by the border security force in India. This created a situation of overcrowding in pig farms of eastern as well as other regions of Nepal

creating difficulties for the farmers to accommodate all the unsold pigs in the limited space available and to arrange feed for all the pigs at a time when there was not any specific budget for management of large number of pigs which were unsold.

2.3.8.7 Impacts to the pig farmers

The hardest hit section in the pig value chain due to earthquake and blockade were the pig farmers (both breeders and fatteners). The earthquake and immediate blockade cascaded a series of ill effects to the farmers. Due to sharp decline in the consumption and decline in demand from processors/ slaughters houses, the sale of fattened pigs dropped markedly. This also affected the breeder farmers as the demand for piglets also dropped. Furthermore, the piglets and pig export to India/ Bhutan also stopped due to restriction by Indian Boarder Force. The farmers were unable to pay bank loan and buy feeds for their pigs. Also the shortage of fuel and unavailability of feed ingredients (generally imported from India) sky rocketed the feed price. In such adverse situation, many farmers were compelled to sale their fattened pigs and piglets in much lower price with gross loss. Many small and medium farmers left the farming business. Many pigs died in that time due to unavailability of feed and still many emaciated survived pigs are found in large commercial breeder farms. Many breeder farmers stopped breeding their sows in absence of demand for piglets. The breeder farmers are compelled to become fatteners and fatteners to become pork sellers by opening outlets in the city centers. Recently, the demand for pork and thus for piglets is picking up as the life is resuming towards normality, the flow of tourist into Nepal is moving towards normal. There might be shortage of piglets for the time being, but can easily meet the demand due to high prolificacy. However, it is wise to produce high quality piglets as per demand rather than tendency to become all breeder farmers as in past to avoid the market crisis in future.

3. Major constraints for sales of pigs and pork: Internal/External

Pig farming, piglets selling, fattening, slaughtering and pork selling are continuously flowing in major market hubs with ups and downs in production sales quantity. All the farmers and slaughterers have more concerns and complaints on stability and steady growth in the pig and pork markets as compared to the individual pork sellers. During discussions and observations of the farms, slaughter places, meat marts and individual shops of pork sellers many internal constraints for sales were revealed. Many other constraints which were particularly related to export of pigs and pork were also transpired during the survey. These internal as well as external (related to export) constraints for sales are presented as below:

3.1 Internal Constraints

Lack of equipped and clean slaughter places

Many of the slaughter places in eastern, central as well as mid-western regions are not well organized and *they still follow the traditional system of slaughtering*. This is prevalent in Jhapa and Dharan. In most of the locations, the slaughter places are not proper and the surrounding environment is not hygienic. This has distracted many customers from buying pork from such places. It has also contributed to develop a feeling among the people that pigs are dirty and the pork is also not clean.

Least Focus on quality

Wholesalers and individual pork sellers do not focus much on quality of meat, since the meat of young and old pigs is frequently mixed. As the customers have become more quality conscious nowadays and they intend to buy only quality or hygienic meat from a clean place. Besides, Suppliers who supply pork to meat processing industries also do not focus much on quality as they focus on quantity. This has also pushed many processors to place order for a bulk quantity of pork from abroad.

No or less quality inspection by the concerned authorities

The concerned authorities do not inspect the pig farms and slaughter houses to ensure compliance of good husbandry practice and good manufacturing practice in quality production of pigs and pork for sales in local as well as international markets. In reality, the farmers and the meat sellers or slaughterers do not follow the relevant good practices, and the authorities have closed their eyes to let them continue to ignore the quality aspect in the farm and the slaughter places.

Tendency of every farmer to become breeder farmers

Every pig farmers are opted to become breeder farmers producing piglets for sale due to high price for piglets in the market with lower production cost as compared to price, time and production cost for fattening. Once there used to be piglets markets in the far west or to the north from the major pig hubs in eastern Terai. However, now there are breeder farmers everywhere and such piglet marketing channel has nearly closed.

Rumor of Swine-Flu and other diseases

A wrong notion among the people exists about swine-flu, as they think that swine-flu is transmitted from pig and pork, hence many of the buyers hesitate to buy pork. Such notion and behavior of people also effects the piglets production as well as fattening, since these activities slow down as a response to the low demand of pork in the market, and sales of feed in the market also decreases, thus affecting the whole value chain functions. The concerned organizations have not made any effort to inform people that swine-flu does not transmit from pigs.

Increased number of individual slaughterers to share pork on rotational basis

In many places such as Dharan and Jhapa individual pig rearers slaughter their pigs by themselves and sell to the neighbors and also share pork with the neighbors on rotational basis. This practice prevents many customers from buying pork at the meat shop in the market. The individual pork sellers, as a result, experience decreased sales in their shops.

Existing social taboo and traditional belief

People from higher caste do not eat pork for traditional belief and those who eat pork in the restaurants do not cook pork in their houses for social taboo. This is not helping pig rearers and pork sellers to increase their sales rapidly. The increase in the demand for pork in internal market is slow process, but the farming has been expanding rather at a fast pace.

Existence of only a few number of meat processing industries

The demand of pork from meat processing industries is also limited since only a few meat processing industries exist in Kathmandu, Pokhara and other smaller cities in Nepal. Some of these industries import pork and other items from Thailand and other countries for better quality. This also restricts the sales of pork produced inside the country. Many of the slaughterers or pork sellers in the cities that are closed to the border also import pigs from India which also replaces the internal supply. The import of pigs and pork items in various years (chart 8, under section 2.3.6) depicts this fact.

Demand driven by number of tourists

In touristic city such as Pokhara the demand of pork and pork items depends on number of tourists visiting the city. If number of tourists drop for any reason, the demand of pork and pork items also drop accordingly. Demand of pork and pork items dropped sharply in Pokhara after the earthquake and during blockade because of absence of tourists in that city. In Rasuwa, many of the Chinese workers working at the hydro power construction companies along the Dhunche – Rasuwagadhi road used to buy pigs and pork from Dhunche, which was a good business for the local pig rearers and pork sellers. Such business has come into stand still as all of the Chinese workers have left to China after the mega earthquake jolted Nepal last year.

Farmers turning into slaughterers and pork sellers

Many of the breeders have now started fattening and some of them have started slaughtering as well, with an objective of supplying pork to wholesalers and meat processors in Kathmandu and Pokhara. This has had an impact on the sales of the local wholesalers. A few of such slaughterers also sell pork to the people at retail price. This has also affected the sales of pork at the individual pork shops.

Lack of proper promotional policy and measures

The government of Nepal has not paid attention to formulate favorable pig or pork export policy and provide subsidies or incentives to the farmers for quality production (with certification and traceability system in place). The private sectors such as FNCCI and AEC (Agriculture Enterprise Center) have also not paid required attention towards the needs of quality production and procedures of certification as well as traceability.

3.2 External Constraints

Control of cross border business by the security force in India

Cross border business of pigs has been fully controlled by Indian security force on the side of the border after the earthquake and blockade. This has been a major constraint for piglets sale in the eastern region of Nepal.

Emergence of new farms in Orissa/India

It has also been speculated that a number of modern pig farms have emerged in Orissa with the government supports, which are supplying piglets to Sikkim, Darjeeling and Mirik. These farms are also supplying fattened pigs to Jaya Gaon where pigs are slaughtered and sent to Bhutan. The security force of India has restricted cross border business of pigs so as to protect the pig farms in India.

Quality not par at international standard and requirements

“Exporting pigs to China” is a dream of many farmers in Nepal. But the Chinese government follows certain standard in order to ensure that the pigs are healthy and do not have food and mouth diseases.

Nepal government cannot certify the pigs for “disease free status” for absence of strong mechanism of inspection of hygienic status of meat (prepared for sales) also the slaughter houses. As Chinese have a doubt on the health of pigs and quality of pork, they do not want to buy these from Nepal. Quality of pork in Nepal is also not at par with international standard, since it comes from many of the farmers who follow traditional process of slaughtering at an open place, which most of the time, is dirty and look unhygienic. Quality requirements of other countries have been the major obstacles for pork and pig traders in Nepal.

Lack of certification process and traceability

Almost all the farms have not opted for certification process to ensure the quality and disease free status of pigs. Nepal government has also not focused on certification and traceability, since its priority is to encourage larger number of farmers for pig farming to generate income. In absence of traceability and certification process, export of pigs and pork to China, India, Bhutan, Thailand, Vietnam and Hong Kong is extremely difficult.

Epidemic diseases

There used to be a very small cross border business of pigs in Rasuwagadhi border, which has now stopped because of doubts on foot and mouth diseases in the pig farms of Nepal. Chinese are conscious on this, hence have stopped buying pigs from Nepalese at the moment.

Other countries' own requirements for import of pork and pigs

Those countries which import pigs and pork have their own requirements which also include good husbandry practice (GHP), good manufacturing practice (GMP), certification and traceability to ensure import of safe and healthy meat to their people. The farmers and the government of Nepal have to take care of these requirements to export pork and pork items. (Please refer to Annex 6.3 and 6.4 for requirements of China and Bhutan – which are potential countries for Nepal to export pork).

Fear of intermittence in supply

It was revealed by some pig farmers in Pokhara that some Koreans from India intended to buy at least 2000 kg pork daily from the slaughter houses in Nepal. However, they did not turn up again showing the doubt on possible intermittent supply and also indicating unorganized and poor slaughter houses in Pokhara. It indicates that the importers expect continuous and regular supply of required quantity and hygienic products from the sellers (exporters) and any doubt on this stands as a barrier to proceed for agreement of supplying pork and pigs.

4. Conclusions and Recommendations

4.1 Conclusions

Findings of this study, as presented under the above sections, were drawn after analyzing different factors in pig and pork market system of Nepal. The analysis and findings basically focused on Pig farming/breeding, fattening, slaughtering, wholesaling, supplying (both feed and pork) and retailing. There are various players under each of these headings contributing to value chain of pig and pork as well as influencing the market system in major market hubs of Nepal.

- A larger number of breeders are operating pig farms in eastern as well as western hubs of Nepal, and new breeders are still emerging all over Nepal. The breeders used to sell piglets to the fatteners of other districts of Nepal and also the individual rearers in Darjeeling, Mirik and Sikkim. In the Eastern region, the breeders used to sell piglets to the farms or individual rearers of Khotang, Okhaldhunga, and Sankhuwa Sabha districts. They also used to supply piglets up to Kailali in far-western region of Nepal. Breeders in Banke and Bardiya used to supply piglets to Surkhet, Jajarkot and Dailekh. As the price of piglets was Rs. 4500 to Rs. 5000.00, many farmers tried to produce more in order to sell larger number of piglets for higher turnover and profit. Thus the production increased rapidly with larger number of piglets available in the market; which became the reason for low sales, decreased price of piglets and overcrowding in the farm.
- Mega earthquake of April, 2015 was also a contributing factor of reduced sales and low demand of pigs and pork even in major market hubs for some time. Blockade imposed by India further exacerbated the situations as the border security force on the other side of India completely restricted the cross border business of pigs. This resulted in a sharp decline on export of pigs from eastern as well as southern borders of Nepal. This aggravated the circumstance further as many unsold pigs had to be taken care of by the farmers in the farms with the need of additional budget. Transportation of feed ingredients from India and feeds from one place to other within Nepal was adversely affected causing a huge scarcity of feed. The price of feed also increased abruptly during the blockade. These situations directly affected the feed intake of piglets causing death of many pigs in the farm. Those which survived were also in a very bad condition. Many of the farmers, thus, suffered a huge loss because of such situations in Nepal. Farmers stopped breeding sows and thus, have to face severe economic loss.
- There was also a rumor of swine-flu in Nepal, which created a fear of diseases among the pork eaters. As a result many stopped buying pork and cooking it in their houses. Hotels also experienced a sharp decline in the demand of pork menu. Individual pork sellers experienced a noticeable decline in their daily sales because of such situation.
- The slaughter places in different pig and pork market hubs are not that clean lacking basic facilities of drainage and good water supply for cleaning. The traditional slaughter places, because of this, look dirty and unhygienic and distract the customers from buying pork. Some of the international buyers have also shown concerns for organized and clean slaughter houses in Nepal.

- Hotels in Pokhara- a touristic city of Nepal, suffered a very low occupancy rate after earthquake and during blockade. This resulted in a very low demand of fresh pork and pork items from the hotels affecting the daily sales of pork sellers (both retailers and wholesalers), departmental stores and restaurants. The price of fresh pork also decreased for these reasons. However there was not any negative effect on the occupancy of hotels in Kathmandu, hence the demand of pork items in hotels of Kathmandu increased after earthquake and during blockade.
- Some of the processors suffered a huge loss as their containers transporting imported cut pieces of pork were halted at the border for longer than three months. All the meat items including pork which were kept in the container spoilt for inadequate or intermittent cooling. Such loss was in millions of rupees. (Rs.8 millions of Nina and Hager).
- A practice of buying live pigs based on rough estimation of weight is prevalent among the individual slaughterers or the middlemen. They always estimate lower weight than the actual weight of pigs to pay less to the farmers. The farmers, as they do not have proper scale to weigh live pigs, are helpless and sell the pigs, with a little or no bargaining, at a price which is not that profitable for taking care of pigs for six months. The individual pork sellers or the middlemen between the farmers and ultimate consumers, thus, take advantage of the situation and make comparatively larger profit by selling pork.
- Sales in certain hubs such as Dharan and Jhapa was not that affected after earthquake and during blockade, it is stable or rather increasing as there are more local consumers and their population is increasing. People from higher caste also consume pork in the hotels and restaurants in those hubs. This is one of the changes brought by rapid urbanization in plain areas of eastern region.
- The daily sales of pork in major pigs and pork market hubs of Nepal , annual supply of pork by different suppliers of mid-western region and imported volume of pork, if added together, provides a figure of total demand of pork in major market hubs of Nepal which is 9294 MT/annum and Rs. 2754 million. During winter and festive seasons these figure increase by 30% to 40%; and decrease by 50% during summer and rainy season.
- There is a potential to export pig to China in a small quantity through Rasuwagadih border if the government of Nepal provides a “certificate of good health of pigs” to the exporter. A top level dialogue between the two countries may consider the possibilities of import and export and make appropriate recommendations for this. The duty officers of both countries at the border can provide further information on this (if they are included in the dialogue).
- Sales trend is moving upward by 10% every year, which shows a steady growth and a secure future of pig and pork market for a certain quantity of demand similar to that one as mentioned above (9294 MT). Excessive dependence on export of piglets to India can be painful to the farmers if cross-border business of piglets is controlled by security force from the other side of the border, which has been justified by the current situation of the cross border business being controlled by the security force at the Indian border causing a big loss to the pig farmers of Nepal.
- There are international requirements for exporting meat item such as pork to other countries, which the exporting agencies or countries should meet and address. Many countries rely on certification and traceability of the products for importing meat items, others have their own requirements, in addition to certification and traceability. The farmers and government of Nepal have paid little attention to these requirements; hence a difficulty has been felt to export pigs, pork and pork items. *(please refer to Annex 6.3 and 6.4 for export requirements to China and Bhutan respectively).*
- There are many agencies trying to enable the environment of pig breeding, pig rearing, and pork selling in Nepal. However there are less coordinated and integrated efforts by these agencies to provide more benefits and supports for better quality production and increased sales inside and outside the country.

- The major feed ingredients required for production of pig feeds are imported from India. This has serious implication as experienced at the Indian blockade period, during which the farmers were unable to feed their pigs with significant loss in body condition and deteriorated health status of pigs. Krishak Sahakari Sanstha in Pokhara and Karnali Feed Industry buy some or limited quantity of maize and soya bean from local markets and a considerable quantity from India (as they are not abundantly available in local markets). Mineral mixtures and other ingredients are also bought from India which shows higher dependency of local feed producers on India for the ingredients.
- The pig market fluctuation is also likely to occur in the future; if the balance between piglet production and internal and external demands for pork are not maintained - as everybody tends to become breeder farmer due to comparatively higher profit margin in piglet sale. The future of pig and pork market is brighter—provided the government and other enablers address the concerns raised in the report positively.

4.2 Recommendations

All the above situations have raised concerns regarding improvements of pig and pork sector in terms of quality in breeding, production of pork items and sales of the same internally as well externally. The following recommendations have been forwarded with a view to address the concerns on improvements in quality and increase in production for better benefits to all the actors in the value chain.

A. Policy Related

4.2.1 Implementation of Slaughterhouse and Meat Inspection Act

Implementation of '*Slaughterhouse and Meat Inspection Act*' should be strongly enforced and meat inspection be regularly carried out in accordance with international requirements. This will contribute to quality production of pigs as well as pig meat and formally open door for external markets. Ministry of Livestock and Poultry Development and DLSO should coordinate with PEAN, FNCCI, Meat Entrepreneurs' Association and other enablers to implement the Act and facilitate regular inspection of meat by the technical persons. The existing slaughter houses should be inspected strictly and brought to the required standard to facilitate hygienic production of meat.

4.2.2 Identification of Pig Production Zone and Initiation for declaring disease free zone

The government, with a view of quality production and promotion of internal as well as external markets, should have appropriate strategies to support the pig farms and slaughter houses and gradually declare them disease free zones. Strict measures together with proper supports to the farmers and slaughter houses are necessary for this. This will have a positive impact on internal consumption and quantity of export will significantly increase.

4.2.3 Promotion for production of major feed ingredients within the country:

Production of feed ingredients such as maize and soya should be promoted and encouraged as there is good market for these inside country. The Ministry of Agriculture (MOAD) should formulate a relevant strategy to encourage and promote winter maize (of hybrid corn), quality protein maize and soya bean production. Availability of these products throughout the year will help the feed producers operate without any interruption (because of shortage of these ingredients) and this will also be helpful to reduce the cost of feed.

4.2.4 External market creation

The internal demand for pork is gradually increasing at a slow pace, however, the government and non-governmental organizations are aggressively promoting for production enhancement for income and employment generation inside the country. This demands searching external market so that farmers are not frustrated due to lack of market for their produce. At present, the neighboring countries China and Bhutan seems to be the potential market as China is importing around million ton of pork every year from Europe and America and Bhutan is not promoting its own production. However, the basic requirements is to ensure that the pigs and pork are produced hygienically adopting GHP (farm level) and GMP (standard slaughter house) and meeting the mandatory requirements of importing countries (annex 6.3 and 6.4). Besides, the government has to initiate bilateral dialogue, the concerned institutions have to study the economics for exporting the pig and pork to these countries and producers should abide stringently on the importers requirements facilitated and monitored by the government.

4.2.5 Disease management – Certification and Traceability

Export of animal/animal products (meat/milk/milk products) to other countries depends upon the freedom from infectious and zoonotic diseases and its certification from the national competent authorities. Hence, to export the pigs and pork to other countries, diseases like FMD should not be present in the animals and mechanism for their effective control should be in place at the national level. Furthermore, pig meat should be physically examined by the meat inspectors and certified for its freedom from the meat borne diseases like cysticercosis and tuberculosis.

Attempts should also be made by concerned organizations such as PEAN, DLSO, health officials and local chamber of commerce and industry to inform people that swine-flu does not transmit from pigs and pork. Such campaign should be regular and it should have visual clips, as evidence, to show to the people.

DLSO, with its pig promotional plan, can work together with other stakeholders such as PEAN, health officials, NGO sectors, projects and FNCCI to start certification and traceability process at the local level. These organizations at the local level, can provide relevant feedback and suggestions to their central level authorities for relevant policies and supports.

4.2.6 Policy for export promotion of pig and pork

The government (higher authorities from Ministry of Livestock Development and Ministry of Finance) has to hold high level discussions with the Chinese authorities at Rasuwagadhi to open the door for export of pigs and pork to Chinese towns and cities which are near to the border. The Chief Duty Officer at Rasuwagadhi has shown an interest to let the products go into Chinese cities in vicinity of the border if the quarantine office on Nepalese side provides a certificate to the exporter on the good health of pigs. In this context, they can sign a memorandum of understanding and make it easier for buyers and sellers of both the countries to have a cross border business of pigs. A high level discussion is necessary with the Chinese government to have complete understanding of their requirements and initiate the trade of pigs and pork to China.

Quality assurance through certification and traceability is necessary to meet international standard and promote export

Nepal government should also initiate a dialogue with Indian government to resume the cross border business of pigs which used to take place regularly before the earthquake at the eastern border. PEAN, AEC-FNCCI should lobby for this with Ministry of Livestock Development. It will help the pig farmers in Nepal produce and sell more and get foreign currency for the country. Targeting northern markets of India will be relatively easier for Nepalese entrepreneurs as these markets are not far and there is no language barrier (Nepalese understand Hindi).

Nepal government should formulate policies to promote export of pigs, pig products, pork and pork items to other countries for foreign earnings. The concerned agencies and stakeholders such as Ministry of Livestock Development, Ministry of Agriculture Development, Ministry of Commerce, Ministry of Finance, PEAN, FNCCI, AEC, Meat Processors and pig breeders should be invited for discussions and policy inputs. The government should also be positive to include provisions of incentives to the pig/pork exporter with a view of increasing the transaction volume. Policies on subsidies on production - to the breeders or farmers and processors for quality production should also be considered by the government. PEAN and Meat Processors can provide necessary inputs and suggestions to the government for this.

Even if it is not possible at present to declare disease free status for promoting pig and pork export, it is essential that zoning the areas for pig production with export emphasis has to be done and every effort should be in place for convincing the potential importer (e.g. China) as per their level provision and hygienic standards requirements. MOAD and NARC technicians have to play a crucial role to identify the appropriate zones for different breeds for this.

Cold storage with adequate capacity should be constructed to store pork in all the market hubs of Nepal, to supply pork when there is enough demand or during good seasons

The government should formulate policies to promote export pigs, pig products and pork in consultation with stakeholders such as PEAN, AEC/FNCCI, Meat Processors, Breeders and Fatteners

4.2.7 Feed production and distribution at a low cost

Relevant ministries such as Ministry of Livestock and Poultry Development and Ministry of Agriculture Development (MOAD) should provide incentives or subsidies to feed producers at the local level. Some cooperatives in the western region are producing feed at a lower cost by procuring the ingredients at local level, but the quantity of ingredients available locally are in limited quantity as eighty percent of maize, soya bean and 100% of mineral mixtures are imported from abroad, which is much influenced by international pricing and other external factors, which was clearly realized during the border blockade resulting the death of huge number of pigs due to shortage of feed. Hence, it is important to promote maize production (especially the hybrid winter maize) and soya bean within the country. It would help not only to reduce the cost of feed but also to become self reliant on animal feed production within the country.

4.2.8 Cold storage of slaughtered pork to supply during high demand

Cold storage facility for slaughtered pork meat in the pig production areas would also be of some help to manage the demand and supply system in the meat market of pork and to avoid the glut and scarcity problem, which will be useful to manage the market rate and pork price in the market. The cold stores could be initiated by the entrepreneurs with some incentive schemes from the government. This will help the farmers keep their motivation up and encourage them to continue pig rearing even during the season when the demand of pig meat is low. It will also be useful to establish larger cold stores to increase production and export-once the traceability and certification process is established.

4.2.9 Search of other unidentified market hubs

A study is necessary to identify other pig and pork market hubs where the latent demand of pig and pork exists. Places such as Taplejung, Khotang, Dhankuta, Solukhumbu, Jajarkot, Surkhet, Dang, Parbat and Baglung can be selected for the study as it is speculated that a considerable number of people consume pork in these districts. Information from these districts on pig rearing and pork consumption can provide a clearer picture of demand of pig and pork in Nepal. Besides, quality pork can be easily promoted in the tourist route e.g. Everest Trail, Annapurna Trail and other areas where large number of ethnic minorities are

living. Likewise Kavre and Sindhuli corridor could be the potential bigger pig producing areas as Kathmandu- the biggest pig and pork market in Nepal - is near to these areas. In view of this, possible promotional measures need to be taken by the government and other enablers for Kavre and Sindhuli corridor.

B. Farmers, Pork Sellers and Other Actors Related

4.2.10. Veterinary inspected meat and Meat Mart to Increase Local Consumption

The District Livestock Service Offices have to regularly inspect the slaughter houses and meat selling places through its competent veterinarian to ensure production and sales of clean and hygienic meat to the customers. Such practice of regular inspection would force the slaughterers and meat sellers to comply with standard set by the DLS for meat production and sales. This would also ease the process of sending meat to borders for sales or export to another country.

As slaughter places are not clean and the prevalence of traditional slaughtering still exists in the eastern, central as well as mid-western market hubs; PEAN, DLSO and concerned municipalities have to work together to help individual slaughterers improve the slaughter places by upgrading the existing facilities of water, drainage system and equipment to make them organized, clean and hygienic. The municipalities can provide specific slaughter locations and basic structures. PEAN can coordinate with the slaughterers and financial institutions or enabling agencies for financial support; and DLSO can provide necessary technical guidance for making the slaughter places equipped with required standard.

In addition, the selling places should be converted into a clean meat mart with proper water supply and required equipments and freezing machines to sustain freshness of pork. The concerned agencies, as stated above, can play their relevant roles in this regard as well. All these efforts should be oriented primarily to increase local sales and consumption in different pig and pork market hubs of Nepal. Veterinary Offices can provide guidelines and directions for standard slaughter houses and selling places. The individual meat sellers (meat shops) should also be provided with strict guidelines for cleanliness.

4.2.11 Integrated and complementary Efforts by the Enablers

Enablers at the district level such as DLSO, DADO, PEAN and others such as municipalities should work together to develop a joint forum for planning, implementation and monitoring of pig and pork promotional activities. They should complement each other by their programs to support the breeders, fatteners, slaughterers and pork sellers. They should have a combined effort to invite other enablers, other relevant projects and agencies to provide support in those areas where they do not have resources and mandates.

Production of pigs and pork or pork items should base on the demand in the market to avoid losses incurred from reduced price and excessive supply

If all supporting organizations work together in a complimentary manner they would complement each other for larger benefits to the farmers or suppliers/slaughterers and pork sellers.

4.2.12 Promotional Activities/ Fares and Information Dissemination

Regular promotional activities such as pig and pork fair, seminars and publicity program on pig and pork should be designed and implemented. PEAN, AEC, (FNCCI), Ministry of Livestock Development, Ministry of Agriculture and other supporting agencies should plan such events at their regular meetings and contribute separately for entire activities.

4.2.13. Production strategy as per the consumption and sales trend and season

Organizations which are supporting the breeders, fatteners and pork suppliers have to advise these actors to plan their production, slaughtering and supply of pigs and pork based on the demand and sales trend. As the current trend on sales of pig and pork is increasing by 10% annually, all actors should look at the estimated total demand of pig and pork in major hubs and estimate their own market share based on the total number of breeders and their production, slaughterers and number of pigs they slaughter every day and should plan their volume of production and sales. The breeders, fatteners, suppliers and pork sellers can consider 10% as increasing trend to plan their future activities.

4.2.14. Transportation of pork and cut pieces

Transportation of pork should be made in containers which have good system of maintaining required temperature and the drivers of the trucks should be well trained to maintain the temperature as per the requirements. This will help avoid spoilage and maintain freshness. The required temperature of keeping the frozen meat is minus 8-10° celcius and it should be regularly monitored to keep the meat fresh.

4.2.15 Role of FNCCI, PEAN and other supporting organizations for quality assurance

PEAN, FNCCI and other supporting organizations have to focus on lobbying for favorable export policy, certification and traceability procedures. These supporting organizations simultaneously have to motivate the selected breeders, fatteners and slaughterers to follow international standard for quality assurance by providing additional technical, managerial

Promote local consumption through new pork products by supporting new or existing entrepreneurs

as well as financial supports for meeting required level of standard and quality. After certain technical as well as managerial support for quality assurance by the supporting organizations, these breeders, fatteners and slaughterers would produce products of required standard, suitable for export; and necessary support should be provided to them by the government, for increasing export volume. This will gradually motivate other breeders, fatteners and slaughterers to follow specified standard and quality, which ultimately will help them to establish a particular quality brand in the international market.

4.2.16 Supports from enabling organizations to introduce new pork products to increase local consumption

New entrepreneurs should be promoted for production of pork pickle, dried and packed meat and chips prepared by pork fat etc. Possibilities to add to this list of products made of pork have to be explored by the enabling organizations so as to help the entrepreneurs introduce other products (made of pork), in the market. Training on production of pork items can be developed and implemented in coordination with Nepal Food Research Laboratory or academic institutions involved in food science. If new or even existing small industries produce such items, the pork eater in different locality will taste them and may develop a long term interest to continue the consumption. Emergence of enterprises which produce such pork items would ensure a demand of certain quantity of pork, which would help increase demand of pork within the country. The supporting organizations whether they are government or non-government should also have joint efforts to increase the consumption of pork inside the country. Providing supports to existing or new enterprises to produce new items for unique taste would be one of the strategies for this.

4.2.17 Good Husbandry Practice (GHP) and Good Manufacturing Practice (GMP)

The enablers should encourage the farmers to comply with GHP (with special focus on pig rearing) which is accepted and recognized all over the world. User friendly GHP guidelines and manuals have to be developed and widely promoted among the farmers. As the farmers who rear pigs may not understand various technical terminologies used in the manuals, they should be provided with an in-depth training for the use of GHP manuals. District Livestock Offices and other enablers (such as Samarth, CEAPRED, PACT etc.)

could organize joint practical training and promotional services for GHP and GMP. This would help the farmers understand and follow GHP and GMP as well as farm biosecurity for quality production. It will also establish base for traceability and certification which is prerequisite for export of pigs and pig meat to other countries.

Buyers and consumers look for quality products for the money they pay for, hence all the actors breeders, fatteners, wholesalers, individual pork sellers and meat processors should focus on quality production to increase sales internally as well as externally

4.2.18. Quality Production

Quality of a product is a major concern for the buyers and consumers all over the world since they pay for the required taste, shape, cleanliness and safety. The breeders should have high quality piglets so that they could grow faster and gain proper weight and be ready for sales within a short period of time. The breeding should focus on the market demand for the quality lean meat. The producer farmers should pay more attention on good husbandry practices and good manufacturing practices so that the general feeling of the people that pigs are produced under worst and unhygienic condition could be eliminated to enhance local pork consumption. Local consumers look for their preferences when they buy pork from the individual pork sellers. Many of them prefer lean meat and others prefer meat with fat. The fatteners should be conscious about the prevalent preference of customers and rear pigs accordingly. The pigs with a weight of more than 100 kilogram accumulate more fat as compared to that one with a weight of 70 to 80 kilogram for better quality of meat.

Products from local meat processing industries have some deficiencies in packaging, which make the products of comparatively inferior quality. This was clearly revealed during the survey. Hence, the processing industries should focus on proper cutting and packing of pork items so that these items could remain in the freezer for longer period without any damage in the packaging and the products themselves.

Some of the meat processing industries have higher quality of products as compared to others at local level, yet they have not been able to export their products to other countries for insufficient production and lack of traceability and certification. This indicates a clear need of certification and traceability system in the pig and pork sector so that the quality of the products could be ensured in the international markets. Ministry of Livestock Development, FNCCI, Ministry of Agriculture Development, other enabling agencies such as PEAN, CEAPRED, PACT and NARC have to start working together at the central level for certification and traceability in the coming years. This may take some years, but the strategy can be formulated now and preliminary works can start in this direction to achieve the goal within a few years. This will also encourage the pig farmers as well as the meat processing industries to produce quality products and get established in the market for long run.

There has been some export of pigs, pig products and pork items to other countries (refer to Figure 8 under 2.3.7) which should be continued with an effort to increase the quantity and value of export.

4.2.19 Government's initiation to follow the above mentioned recommendations

The above mentioned recommendations specially related to promotion of Kavre and Sindhuli corridors for pig production, compliance of GHP and GMP with strict implementation of inspection law as well as support to breeders/farmers for certification and traceability and also encouragement to the farmers for corn and soya production within the country should get top priority in the strategies of the government for livestock department. If these recommendations are implemented seriously by the government with appropriate planning and monitoring, the quality production will open the door for export to increase the foreign currency earning, reduce the import of pigs and pig feed items from abroad and contribute to huge savings. The farmers and other actors in the value chain will get more benefits and add more value to pig and pork items. The existing demand trend of pig and pork items shows a growth of 10% every year (current status is 23840 kg per day with an average price of Rs. 278.00 = Rs. 6,627,520.00), which could increase by more than 20% or 30% if new products, market hubs are found out and quality is ensured. Without government's initiation, strict monitoring and necessary support, the potential growth of pig and pork sector will be difficult to achieve.

Besides, the concerned agencies need to study the import requirements of China and Bhutan (which are annexed to this report) and explore the same of other countries to formulate suitable policies and strategies to promote quality production and thereby increase export of pig and pork for foreign currency earning.

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6. Annexes

Annex 6.1 Situation Analysis and Findings of major hubs: Jhapa, Dharan, Kathmandu, Pokhara, Banke/ Bardiya (separately for each hub)

Dharan

Introduction

Dharan, situated on the foothills of Mahabharat Range touching the terai plain area on south of its boundary, is the second largest city in eastern region of Nepal. It has an estimated population of 146100⁴. Dharan represents mixed culture of different ethnic groups such as Rai, Limbu, Newar, Brahmin, Chhetri, Gurung, Magar, Marwari etc. and it has gradually transformed itself from a place of recruitment of British Army to an education hub that has accommodated Dharan Engineering College, BP Koirala Institute of Health Science, Postgraduate Campus (Mahendra Multiple Campus), Food and Technology Campus, Mahendra Sanskrit Campus and many other private campuses.

The demographic composition of Dharan is depicted by the following chart:

Table – 1 Total population of Dharan (2011 census and estimated)

Population of Dharan	Total	Male	Female	Households
As per 2011 census	137705 ⁵	64671 (47%)	73034 (53%)	32693 (4.21 per hh)
Recently estimated	146100	68667 (47%)	77433 (53%)	34703 (4.21 per hh)

Dharan serves like a bridge between the hills and terai with a good road network to Dhankuta, Hile, Terhathum, Khandbari and Bhojpur towards north and to Biratnagar, Itahari, Damak, Birtamod, Kakadbhitta (on the east) and up to Janakpur and Birgunj in the Terai. Its connection to various cities has made it as a point of attraction for many people, hence a significant number of people travel to and via Dharan.

Pig Rearing in Dharan

There are couple of farms which have been rearing pig systematically with use of vaccines, appropriate medicines and proper feeding system. However, these farms are concentrating more on breeding and sales piglets. They sell piglets in Dharan, Sankhuwasabha, Terhathum, and Dhankuta.

The ex -British Army families prefer to rear one or two pigs in the backyard of their houses using garbage from houses and restaurants as feed. Many of these pigs are slaughtered on their yard and sold to the neighbors or shared equally on rotational basis in order to get the money back which was spent to rear the pigs. This has contributed to a practice of unorganized slaughtering in different wards of Dharan. One can easily see individuals selling pork in Bhotepul, Manglabare, Chatraline and inner wards of Dharan (after slaughtering the pigs reared by themselves). Pork from these slaughterers is generally cheaper than that one which is found in market areas.

Meat Sellers' Association

Meat Sellers' Association in Dharan generally works for the benefits of its members by raising voices and forwarding issues that need attention of local authorities, and it also decides on the selling price of pork in

⁴ Wikipedia - Dharan
Dharanmun.org.np

Dharan market. It has 75 members at present, and 40% of the members sell pork. Previously the number of members was more than 100 – (as some left and became independent some other disappeared). This association is trying to bring the meat seller together to address pricing issues that have come to its attention. Some meat sellers are selling pork at a lower price, which, the association thinks is not helping others who are following the price fixed by it. The meat sellers who sell pork at a lower price are individuals who rear pork in their backyards.



Individual pork seller in Dharan



Pig in a farm - Dharan

Hotels, Lodges and Small Restaurants

The total number of Hotel/Lodges and Guest Houses in Dharan is 78 and other restaurants 45⁶. There are a number of small restaurants and hotels (almost 70 altogether), which serve specific pork dishes such as fried slices, momo and thukpa to their customers and rest are either vegetarian restaurants or do not prepare pork dishes. Fried pork slices and momo are quite popular in Dharan. These small restaurants use 2 to 5 kg of pork daily to prepare dishes as per demand of customers.

Pork sekuwa (BBQ) is also popular in Dharan. Bagarkot alone has 12 Sekuwa Restaurants which serve pork sekuwa every day. The total daily use of pork by these restaurants is 130 to 150 kg in average.

Some of the hotels which are bigger in size such as Dharan Kitchen buy pork in a quantity of five to ten kg at a time and use it for two or three days depending on demand of customers. Small restaurants generally buy two or three kg every day and prepare momo and fried items for daily sales. The volume of purchase of pork by all the hotels and restaurants is not fixed as the demand varies every day.

Total Pork Consumption and Demand in Dharan

The local consumption of pork in households of Dharan is significantly stable. The total daily consumption of pork in Dharan comes to be around 4000⁷ kg per day. The demand of local consumption has not decreased for the last two or three years. It was transpired that the local consumption is gradually increasing with growth in population and also with the increased number of pork eater from other ethnic groups (though there was not any authentic data available on this) – such as Brahmin, Chhetri, Marwari and Newar.

Dharan is known as one of the cities where significant numbers of ex-British Army from Rai, Limbu, Gurung and Magar ethnicities have settled. Hence, remarkable consumption of pork by these people from the

⁶ Dharanmun.gov.np

very inception of this city has been noticed. People from other ethnic groups such as Chhetris, Brahmin and even Marwaris consume pork in Dharan, though they do not cook it in their houses for social taboos. These people are main consumers of pork momo and pork fried. The following table presents an estimated consumption of pork in Dharan (based on recent survey):

Table 2 - Daily Consumption of Pork in Dharan

Pork Consumption by	Volume (kg)	Retail Price per kg (Rs.)	Monetary Value (Rs.)	No. of pigs (estimated)
Hotels and Restaurants ⁸	279	240	66960	4
Households	3571	240	857040	51
Total	3850	240	924,000	55

The total demand of pork in Dharan, based on the above table, can be estimated as to be 3850 kg. which can vary depending on seasons and demand. During Dashain, New Year's Day, and winter season the demand is higher which may exceed the volume depicted in the above table and may reach to 75 to 90 pigs – equivalent to 5250 to 6300 kg. The demand is lower during rainy seasons especially in Ashadh and Shrawan which may be far below 3500 kg. per day.

The price of live pigs in Dharan is Rs. 180.00 per kilogram.

In addition to the above volume of fresh pork consumed by local people in Dharan, some renowned stores sell pork items such as sausage, ham, bacon and luncheon packets of Rs. 20,00,000.00 every year. These items are also purchased by the local consumers.



Mr. Jeevan Karki in his Sausage Factory (Purwanchal Sausage Industry)

⁷ Meat Sellers' Association in Dharan

⁸ 70 small restaurants/hotels in Dharan use pork to prepare different dishes (estimated number)



VRC Meat Mart and the owner manager Mr. Madan Tamang

Pig Farms in Dharan

It is estimated that Dharan is producing the highest number of pigs in eastern region of Nepal. Many people, especially the retired ex-British Army, rear pigs (for fattening) individually in their backyard using garbage as the feed for pigs. Besides, there are organized farms which concentrate on breeding and produce piglets for sales, using appropriate vaccines, medicines and feed produced by the factories.

Pig farms in Dharan used to send piglets for sales to Sankhuwasabha, Okhaldhunga and Khotang, in Nepal and to Sikkim and Darjeeling in India. Before the earthquake, the price of one piglet was Rs. 4500 to Rs. 5500 depending on supply and quality, which came down to Rs. 500.00 during the time when India had imposed blockade on the borders. Two reasons were unfolded for this, the first one was attributed to excessive production of piglets by pig farms in Dharan (which resulted in excessive supply and lower price), and another to restrictions on cross border business of pigs and piglets by Indian government (which resulted in a larger number of unsold piglets in farms). During such crisis, the middlemen purchased piglets at Rs. 500.00 and sold in Pokhara (Khairani Tar) Shyangja, Baglung, and Kailali at Rs. 3500.

Previously, at least 20 trucks (with 32 to 38 pigs in a truck) used to transport pigs to Bhutan from eastern region of Nepal every month. Almost 1200 piglets in a week were sent to Darjeeling and Sikkim. Pig farms in Dharan also used to send old and weaned pigs to Bhutan for slaughtering, and piglets to sikkim and Darjeeling for fattening; which is now completely checked and controlled by Indian government thus creating a big barrier against sales of pigs from these pig farms. Such situation has further aggravated the deteriorating economic condition of pig farms- which had resulted as one of the impacts of the blockade.

During blockade on the border, feed supply was almost nil, and the quality of available feed was also inferior which had subsequent effects on health of pigs as some died and some lost weight significantly. As a result, the production of piglets decreased remarkably - almost to zero. Some farms are closed at the moment because of unavailability of feed and some are trying to recover as the supply of feed is now becoming stable and the demand of piglets is also slowly increasing.



Problems and Prospects of pig and pork market in Dharan

Problems

1. Emergence of new restaurants and hotels in Dharan has contributed to decreased sales of individual restaurants and so is the case with the individual meat sellers.
2. Price of pork has come down from 280 to 240 per kg as a consequence of growing number of meat sellers.
3. Sale of piglets in farms has tremendously decreased because of excessive production and control of cross border business by India. It has adversely affected the pig farms as many of the farms have closed down.
4. Price of feed (up to Rs. 54 per kg) is very high, which does not help the farms produce cheaper piglets.

Prospects

5. Local consumption of pork in Dharan is stable and gradually growing with increased population trend. The daily local demand of pork in Dharan is 4000 kg which increases to 5500 kg to 6500 kg during Dashain, Tihar, New Year's Day and other festivals requiring a larger number of pigs to meet the demand. The individual pig rearers and pig farms can take benefits of the demand by supplying adequate number of pig.
6. People prefer lean meat and want to buy from a clean place. It indicates that establishment and operation of slaughter houses and clean meat mart will help motivate more people to buy pork.
7. Demand of piglets is now slowly increasing, which can help pig farms to recover from the setback faced by them during blockade.
8. Standard certification process, if established by the government, can help local farms to produce piglets for international markets.
9. Local pig farms think that they can provide better quality piglets for fattening that meets the standard quality for international markets if subsidies for feed and medication are provided to them.

People Contacted in Dharan

Meat Sellers

1.	Prajwal Bhujel	Sadan Line
2.	Padam Bahadur Magar	Sadan Line
3.	Krishna Ale Magar	Sadan Line
4.	Rajesh Khadki	Deshi Line
5.	Gopal Khadki (President of Meat Sellers' Association – Dharan)	Sadan Line
6.	VRC Meat Mart (Madan Tamang)	Kirant Chowk

Hotels and Restaurants

1.	Dharan Kitchen	Krishna Pathak	Bhanu Chowk
2.	Taplejung Restaurant	Prem Bahadur Limbu	Bus Park
3.	Sewaro Taplejung Hotel	Ganesh Limbu	Bus Park
4.	Everest Momo	Nilam Rai	Niketan Line
5.	Baraha Khaja Ghar	Binaya Gurung/Manoj Rijal	Mahendra Path
6.	Chaudhari Hotel	Chandra Kumari Chaudhari	Niketan Line
7.	ABC Restaurant	Mrs. Indra Rai	Bhanu Chowk

Departmental Stores

1.	Baraha Departmental Store	Purna Kumar Kalikote (Asst. Manager)	Mahendra Path
2.	Sailung Departmental Store	Min Rai (Owner Manager)	Putali Line

Processing Industry'

1.	Purwanchal Sausage Industry	Jiwan Karki (Yamee's Sausage)	Shyam Chowk
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Pig Farms

1.	Sotang Organic Agriculture Research Centre	Krishna Kumar Rai	Basanta Tar
2.	Limbu Pig Farm	Debendra Limbu	Basanta Tar

Itahari and Tarahara

Hotel and restaurants mostly selling Sekuwa (barbeque) in Tarahara and butchers selling pork meat in Itahari were contacted to collect information on daily consumption of pork in restaurants and daily sale of fresh pork in Itahari bazaar. A commercial pig farmer also running a pork selling outlet in Tarahara mainly due to compulsion in the present situation was also contacted.

Of the total randomly selected 8 restaurants in Tarahara, 4 (50%) were found to be selling pork items namely pork fry, sekuwa, ear and tongue fry, MoMo, and Chowmin. However the average daily consumption of pork items in these four restaurants were also low ranging from 4-5kg in a month to 8-10 kg in a day. The restaurant selling highest pork in the past used to consume around 25-30kg /day. The daily slaughter of pigs ranging from 60-90kg live weight in Tarahara was 3 at present which used to be 4-5 in the past. In the festive season, the slaughter might go up to 7 pigs. Interestingly, all the restaurants contacted had raised 2-3 pigs in their backyard or homestead for utilization of hotel wastage. Those not selling pork items in their restaurants used to sale fattened pigs to the local butcher, while some restaurant owner cum pig raiser also used to slaughter pigs by themselves.

The price of pork has also dropped to Rs 190-200 which used to be Rs250/kg in the last year mainly attributable to increased production and market stagnation due to earthquake and blockade consequences. The restaurant owner cum pig raiser expressed their view that two pigs fattened for 7-8 months used to fetch Rs 30 to 35000 in last year, which has come down to Rs 20000.0/ 2 pigs at present.

A commercial pig farmer cum fresh house operator in Tarahara used to have around 50 breeding sows in his farm in the past selling piglets to eastern hill districts and even exporting to Sikkim. Due to present crisis, he has down sized his farm to around 28 sows and has recently started fresh house in Tarahara to sell the pork.

The departmental store used to sale Luncheon meat (canned pork meat) imported from Vietnam/ Thailand, and the average sale volume is 1-2 cartoon (1 cartoon=24 cans) in a month. The price of canned pork meat was Rs 160-180 per can. The store also sale sausage locally produced at Itahari to a non-significant quantity.

Restaurants contacted at Tarahara

1. Gurung Hotel
2. Gaunle Hotel
3. Chiparkha Sekuwa
4. THulung Hotel
5. Samjhana Hotel
6. Sunuwar Hotle
7. Hang Khajaghar
8. Aaush Hotel

Departmental Store visited

1. Omega Department Store, Mr. Samel Giri

Pig farm owner contacted

1. Mr. Bam Bahadur Giri, Bhawanipur Pig Farm

Fresh House

1. Tarahara Fresh House

The pig slaughter place in Itahari, Janata basti was visited and interacted with local butchers. The daily pig slaughter in this place was on average 8 pigs on Saturday and Tuesday, 3 pigs on Monday, Thursday and Friday and no slaughter on Sunday and Wednesday. The pork seller prefers to slaughter 8-10 months old pigs that yield 50-70kg pork/pig. Thus the monthly pig slaughter in this area comes around 100 with pork sale on average of 6000kg. Another slaughter place in Hatkhola Itahari, the average daily slaughter is 10-12 pigs /day which might go up to 25-30 pigs during Hatiya (local Market day). The sell price of pork was Rs. 250.0 for retail buyers and Rs. 220-240 for regular hotel costumers.

Person Contacted

1. Mr. Bidur Singh Limbu, Local butcher
2. Saindra Rai, Pig farmer cum fresh house operator.
3. Ram Tamang, Hotel owner selling pork sekuwa (3-4kg /day)

Rasuwa

Introduction

Rasuwa, one of the districts of Bagmati Zone, with a population of 43300⁹ and 9778 households touches the northern boundary of China at Rasuwagadhi and shows a lot of potential of trade with the northern neighboring country for essential commodities. However, this district is quite back in terms of socio economic indicators because of poor infrastructures it has in education, medical and even transportation. A one lane road is linked from Kathmandu to the border, which is heavily damaged in several places by the earthquake and landslides causing notable difficulties for the vehicles to travel smoothly. Many hydro power projects along the road from Dhunche to Rasuwagadhi (Kerung entry point) have not started operating after the earthquake rocked this district badly. This has had a direct impact on economic transactions of Dhunche and Syafu Bensi (since Chinese workers of these projects have fled to China and Nepalese to other districts - and movement of people and goods became more difficult because of landslides and earthquake). Businesses related to pig and pork were also adversely affected by the earthquake as the sales of pigs and pork decreased remarkably in this district after the workers of such hydro power projects fled.

Table - 3 Population composition of Rasuwa District

Population of Rasuwa	Total	Female	Male	Households
As per 2011 census	43300	21825 (50.40%)	21475(49.60%)	9778 (households)

Pig Rearing in Rasuwa:

Pig rearing in Rasuwa was not that obvious and significant until the immediate past. With introduction of some specific provisions of supports to pig farmers by the District Livestock Office (DLSO), people have started taking interest in pig rearing and are following the guidelines provided by DLSO for organized and systematic efforts for the same. There are eight individuals and four cooperatives which have recorded their pig rearing activity in the District Livestock Office (DLSO). In 2015 there were 3398¹⁰ pigs in this district, this year the total estimated number of pigs (including piglets) is around 300¹¹ at the moment. Some recently recorded Cooperatives (4 in number) in the district have also started pig rearing. They have around 100 pigs at the moment. The recently formed Pigs Entrepreneurs' Association (PEAN) of Rasuwa is also working to promote pig and pork business in the districts.

Hotels and Restaurants

Rasuwa is one of the famous tourist destinations as this district leads the tourist to Langtang mountain range. While trekking to Langtang, many tourists stay overnight in Dhunche and Syafrubensi and continue their trekking the next morning. This provides the local hotels and restaurants with an opportunity of serving the foreign visitors, thus contributing to local entrepreneurial activities. In Syafrubensi there are ten to twelve hotels and some small restaurants; in Dhunche the similar number of hotels and restaurants provide their services to the tourists – both internal and foreigners. They serve mostly local cuisines depending on customers' choices. However, pork is served less as compared to chicken. There are very few meat sellers in Dhunche but the pork sellers are even limited to one or two in number. Similar is the situation in Syafrubensi. There are some individual pig rearers in Syanfrubensi, who sell or slaughter pigs occasionally depending on demand from the restaurants and local dwellers. The total volume of consumption of pork by the hotels in Dhunche is negligible.

Pork Consumption by the local people

Pork consumption in Rasuwa is not significant, and it is not recorded. There were two visible meat shops which were selling pork in Dhunche. New Fresh Meat Shop had brought 20 kg meat of locally bred wild pig to sell at Rs. 700.00 per kilogram. Around 30% of the volume was still in deep freeze waiting for the consumers for the last seven days. Hari Meat Shop – located in ward number 5 of Dhunche, buys pigs from the local farmers and slaughters for sales to the local consumers. This shop slaughters five pigs or sells 300 kg of pork in a month at the rate of Rs. 300 per kilogram. There are other one or two individuals who slaughter pigs every week to share the meat among their neighbors. All these indicate a low consumption of pork in Dhunche which is estimated as to be 1000 kg or 15 pigs in a month. Even in Syanfrubensi, pork consumption rate is quite low, as there are not established pork sellers and slaughter houses in that area. Based on these facts, maximum number of pigs that are slaughtered in Dhunche and Syafrubensi can be estimated as 20 in a month. This may increase by two or three pigs when there are tourists staying in Syafrubensi to travel to Langtang.



Pigs/pork sales to Kerung (Cross border pig business)

Before the earthquakes of April/May 2015, the employees of different Hydro Power Construction Companies along the “Dhunche - Rasuwagadih Road” used to travel to Dhunche to buy pork from the local sellers. These employees used to buy 2 pigs or 150 kilo every month; which is now completely stopped as the construction companies are closed and all the employees have fled to China after the earthquakes. Before

9 Annual Livestock Program and Statistical Report - 2070/71 – p4

10 Ibid p. 15

11 DLSO record 2073, Rasuwa

the earthquakes of April/May 2015, two trucks of pigs (20 pigs) used to be sold across the border - to Kerung - every month, after acquiring approval from the temporary Nepalese quarantine check-post (operated by District Livestock Office – Rasuwa) in Rasuwagadhi. This trade has also stopped at the moment, as there was a rumor of swine-flue in Nepal and there is no proper quarantine and approval processes established on the Nepalese border except the temporary check post which is also not regular. Besides, there is a speculation that the local farmers around Kerung have started pig rearing which is encouraged and promoted by the Chinese government, hence demand of pigs from across the border has come down to zero.

It was transpired from the meeting with the Chief Duty Officer – Mr. Kedar Paneru that the government officers at the Chinese Check Post have agreed to allow the cross border business of pigs and pork, if a proper quarantine authorization and approval system is established on Nepalese side. Even the custom office chief assured to invest around 10 million rupees from the government to establish quarantine office with competent veterinary officer deputed in the post, however dialogue and negotiation between the responsible authorities of two countries.



Pig slaughtered on the ground with traditional technique – in Rasuwa

Problems and Prospects of Pig/Pork Market in Rasuwa

Problems

1. Local consumption of pork is noticeably low and there is higher dependence of local pig/pork sellers on employees of hydro power companies for sales. Closure of Hydro Power Companies along the Dhunche – Rasuwagadhi road has obviously negative effects on sales of pork. The tourist flow has also been very low during recent past impairing the hotel and restaurant businesses, which has further exacerbated the problem of low consumption and sales of pork in the district.
2. There is only a quarantine check post on the Nepalese border, where a staff from District Livestock Office (DLSO) is appointed for daily quarantine needs. The officials on Chinese border perceive this as insufficient to approve and or authorize the movement of pigs and pork for cross border business.
3. Kerung town is more than 12 kilometer far from the border, hence it is difficult for the farmers and sellers of Nepal to have a direct link with the local customers in Kerung for continuous business. Furthermore, legal quarantine procedures should be followed and specified standard in terms of quality of products maintained to establish a permanent trade linkage with Kerung. This will need well-

established infrastructures for road, information networks and standard farm houses producing quality pigs; which at the moment, looks very difficult as there are not such infrastructures existing on this side of Nepalese border in Rasuwa.

4. Motivation of people towards pig rearing is increasing because of promotional supports offered by the District Livestock Office. It can create a problem of low price, poor quality and over-crowding in pig sheds in the future as the market demand is limited and there is less possibility of rapid increase in pork consumption pattern of the district.

B. Future Prospects

1. As the Chinese authorities at the Rasuwagadhi border have shown an interest of promoting cross border business of pigs and pork on a condition of establishment of quarantine office on this side of border; Nepalese authorities can work on establishing quarantine office for authorization and promotion of cross border business of pigs and pork. This will encourage the local farmers to produce pigs and pork of standard quality for sales in Kerung.
2. With increased number of tourists in Langtang, and reopening of hydro power companies, the sales of pork will also increase in Rasuwa, but it will not be very significant as well as not different from the situation which was prevailing before the earthquake. It will also remain only until the construction of hydro power projects is completed.

People Consulted in Rasuwa:

1.	Dr. Dilli Ram Sedhain	District Livestock Officer – Rasuwa
2.	Mr. Kedar Paneru	Chief Duty Officer - Rasuwa Border Check Post
3.	Mr. Kushwaha	Quarantine Officer – DLSO – Rasuwa
4.	Ram Krishna Khadki	Hari Meat Shop
5.	Mr. Rameshwar Khadka	New Fresh Meat Shop – Rasuwa
6.	Mrs. Tamang	Hotel... (Syafu Bensi)

Some police officers, who were on duty at the border, were also consulted for information on cross border pig business.

List of Farmers and Cooperatives that are rearing pigs in Rasuwa¹²:

1.	Pema Tenjin Tamang	Dhunche 5	Rasuwa
2.	Suman Moktan	Ghaibung 7	Rasuwa
3.	Jit Bahadur Waiba	Ghaibung 7	Rasuwa
4.	Sameer Tamang	Ghaibung 8	Rasuwa
5.	Nepati Gurung	Ghaibung 7	Rasuwa
6.	Chasing Lopchan	Ramche 8	Rasuwa
7.	Pemba Palmo Tamang	Ramche 8	Rasuwa
8.	Hom Bahadur Tamang	Ramche 8	Rasuwa
9.	Bhole Jib Jibe Cooperatives Ltd.		Rasuwa
10.	Rasuwa Multipurpose Cooperatives Ltd.		Rasuwa
11.	Thade Progressive Agriculture Cooperatives Ltd		Rasuwa
12.	Chhtain Agriculture Cooperatives Ltd		Rasuwa

III. Kaski

Introduction

Kaski is one of the hilly and mountainous districts of Western Region of Nepal, which is also known as a very popular destination for the tourists from various parts of the world. This district has a population of 492098 (255713 female and 236385 male) with 125673 households out of which 69175¹³ are involved in agriculture.

Pokhara, the second largest city of Nepal with a population of 264991 (census 2011), is situated almost 200 km on the west from Kathmandu with an altitude of 884 meter (2900 ft)¹⁴ from the sea level. It is the headquarters of Kaski district and also serves as the regional administrative zone of Western Region of Nepal. Pokhara provides an enchanting view of Annapurna Range stretching from east to west that reflects on Fewa Lake making the view quite fascinating.

People from various ethnic groups such as Gurung, Magar, Brahmin, Chhetri, Newar and Thakali live in this scenic city and they are involved in various professions. Many Gurungs and Magars are the retired British Army, and people from other ethnic groups are involved in agriculture, tourism related businesses, and trading, service or small manufacturing activities.

Pig Rearing in Pokhara

There are 55¹⁵ recorded pig farms in Kaski, out of which 31 are in Pokhara. The total population of pigs in Kaski is 4073 out of which 2651 are from the farms in Pokhara. The following table provides clear information on the number of farms and pigs that are recorded in Kaski and Pokhara:

Table – 4 No. of recorded pig farms and pig population in Kaski¹⁶

District and City	Pig Farms	Total Population of Pigs	Piglets
Kaski District	55	4073	2398
Pokhara City	31 (56%)	2651 (65%)	1487 (62%)

Pokhara itself covers a larger percentage of pig farms and also the total pig population in Kaski, which indicates that pig and pork business in this city is noticeable as compared to other parts of the district. Besides the above mentioned pig farms, many people in Pokhara rear pig in their backyard and they are not recorded by DLSO, which may increase the total number of pigs in Pokhara. These people, generally slaughter the pigs by themselves and sell to the neighbors or share the pork as per the requirements of neighbors on rotational basis.

Meat Shops in Pokhara and their Daily Sales

There are 385¹⁷ recorded meat shops in Kaski district. As per the records of Livestock Service Centres of Hemja, Arwa and Biraute- there are 298 meat shops in Pokhara alone. However, all these meat shops do not sell pork. It is estimated that one third of these shops i.e. 99 or 100 shops sell pork. The quantity of pork sold from these shops varies as the coverage and size of these shops are also not the same.

¹² DLSO – Rasuwa 2073

¹³ Annual Progress Report 2070/71, DLSO – Pokhara, Kaski p.9

¹⁴ www.nepalvista.com

¹⁵ Inventory of Commercial Livestock Farms 2072/73 DLSO Kaski; p31-34

¹⁶ ibid

¹⁷ Ibid pp 8-20

There are many shops which sell 10 to 40 kg of pork daily; there are also some shops which sell one or two pigs of 50 to 60 kg daily, but they are not that many. In average, 50 pigs are consumed daily in Pokhara even at this time when the sales had dramatically come down as a consequence of very low inflow of tourists to this city after the earthquake; which was further aggravated because of blockade imposed by India, later on.

There are few individual wholesalers of pork, in Pokhara at present. Some cooperatives are also involved in wholesaling. They sell two to three pigs (170 to 200 kg of pork) daily to the individual meat sellers. In addition to local pork eaters, Chinese and Koreans are also customers of the individual meat sellers. Koreans generally buy bellies of pig at Rs. 400 per kg, whereas the average wholesale price of pork is Rs. 300.00 per kg and retail price is Rs. 350.00.

The following chart provides information on number of shops, daily sales and price of pork in Pokhara:

Table-5 Shops, daily sales and price of pork in Pokhara

Total Recorded Meat Shop in Kaski	385
Recorded Meat Shop in Pokhara	298
Estimated no. of meat shop selling pork in Pokhara	99
Average daily sales of pork by individual shop	30kg
Total Daily Sales	3500 kg or 35 pigs
Wholesale Price of pork per kg	Rs. 300
Retail Price of pork per kg	Rs. 320 - 350

Note: Total daily sales is estimated based on the discussions with meat sellers.

Out of 385 recorded meat shops in Kaski 298 are in Pokhara, the rest -87 shops are in Lekhnath and other small market pockets on Kaski. If one third of 87 shops (i. e. 29 shops) are selling pork, then the total daily sales of these shops will be 870 kg (12 pigs). This means in Kaski around 60 to 65 pigs or 4550 kg pork is sold daily depending on demand.

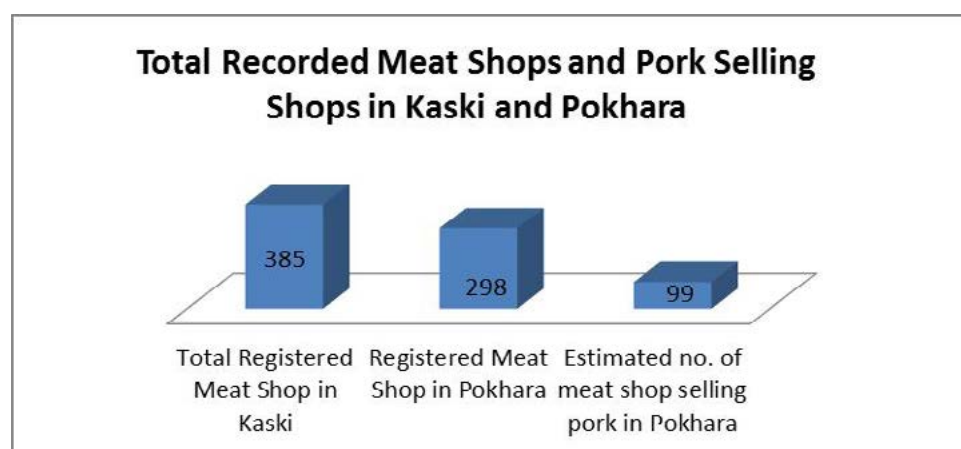


Diagram 1 – Total Recorded Meat Shops in Kaski and Shops selling Pork in pokhara

Local Consumption of Pork in Pokhara

Consumption of pork by the local people has been almost stable as the local inhabitants who consume pork have maintained their preference for pork. It was revealed from discussions with meat sellers that people

from higher castes such as Brahmin, Chhetris and Newar also consume pork in hotels and restaurants, despite the cultural restrictions; but they do not cook it in their houses for social taboo. This indicates that the consumers of pork are slowly increasing (since pork was previously consumed only by Gurung, Magar, Rai etc. and not by Brahmin, Chhetris and Newars). Many individual meat sellers mentioned that the number of individual pork sellers in Pokhara has increased, which has been a prime cause of decreased sales in individual shops (since the market share is now distributed to larger number of sellers). Furthermore, restaurants and hotels are buying less or has stopped buying pork because of significantly reduced number of tourists in Pokhara. However, these causes do not have negative impacts on local consumption of pork. **Daily sales of 50 pigs in Pokhara** is not effected by earthquake and blockade. There was slight decrease in sales of pork when a rumor of Swine Flu spread in Nepal, which is not significant now, and the situation has improved.



Hotels and Restaurants

Pokhara has more than 400¹⁸ hotels, lodges and resorts to stay and more than 200¹⁹ restaurants where tourists and the locals can dine. However, all the restaurants do not serve pork items as they also target the local customers who prefer chicken, mutton and buff. It is estimated that 50% of the restaurants serve pork items depending on choice and demand of the customers.

Pokhara has 4 hotels with 5 star rating, 5 hotels with 4 star rating and 44 hotels with 3 star rating which serve a considerable volume of pork items to the customers especially the tourists from around the world.

Hotels and restaurants which serve pork items generally buy pork from local meat sellers. There are some big hotels such as Sangrila, Blue Bird and Fish Tail that buy pork from local meat sellers (Krishna Fresh House); there are some others like Barahi Hotel – which do not buy pork from the local market, rather they buy packed ham or bacon from the local stores to serve the tourists. Those hotels which buy pork from local meat sellers buy thigh piece of 12 to 15 kg once a week.

There are some Chinese restaurants such as Old Land Restaurant and Deng Feng Lai Restaurant which serve various pork items based on the demand and tastes of their customers. They buy 4 to 5 kg of pork daily as a minimum quantity and 10 to 12 kg maximum depending on presence of tourists and customers in the restaurants. There are other 10 to 12 Chinese and Korean restaurants in Pokhara, which buy almost the same quantity of pork as these two are buying.

The owners and managers of consulted hotels and restaurants showed their disappointment with the extremely decreased number of tourists in Pokhara after the earthquake which was further aggravated when India imposed blockade in Nepal; since tourists were the main consumers of pork dishes. It shows that declined number of tourists in Pokhara was the prime reason of decreased sales of pork.

Meat Processing Industries in Pokhara

There are three meat processing Industries in Pokhara which also produces pork sausages and processed meat such as ham and bacon. The production quantity of sausages and processed meat is estimated based on discussions and information received from the DLSO Kaski report:

Table -6 Annual Production and Monetary Value of the Products

Name of Industry		Production of Processed Meat					Total Monetary Value (Rs.)
	Sausage		Ham		Bacon		
	kg	Price per kg (Rs.)	kg	Price per kg (Rs.)	kg	Price per kg (Rs.)	
Fewa Meat Products	1040	800 (832000)	1040	1100 (1144000)	3120	1100 (3432000)	54,08,000
Fishtail Food Products	1000	-	-	-	-	-	-
Pokhara Himalaya Meat Products	5000	-	-	-	-	-	-

As per the information provided by a staff from the production section, the annual production of pork items by Fewa Meat Products is almost Rs. 5.5 million which comes to be around 5200 kg, which is encouraging from the point of view of local sales of pork in Pokhara. (Production quantity of Bacon and ham of other two industries was not known except the quantity of sausage).

Some of the processing industries such as Fewa Meat Products bring frozen pork from Nepalgunj (from DK Meat). There are not particular reasons for this as it was revealed that such practice was being carried out from the establishment of Fewa Meat Products and it is being continued regardless of transportation cost and time involved in this.

Departmental Stores or Cooperatives selling Pork Items

A number of departmental stores are operating at lakeside, Chipledhunga and other areas of Pokhara. Bhatbhateni, Binayak, and Sulav are some of the famous ones having average monthly sales of Rs. 250,000. These stores sell pork sausage, ham, bacon, pork chop, Barbeque sausage and hot dogs. Bhat Bhateni pork items mainly from Kathmandu, whereas other stores sell products from Kathmandu and Pokhara as well. Nina and Hager, Gourmet, Urban Food, Fewa Food Products are the popular brands in these stores.

There was not any effect of earthquake on the daily sales of two stores except Sulav, as other two stores sell the pork items to the local consumers and Sulav mostly to the hotels at lakeside. Inflow of tourists to Pokhara was almost to zero after the earthquake and during the blockade, which had a negative impact on demand and sales of pork items at the stores located at the lakeside.

18 www.hotels.in Pokhara.com

19 www.Pokhara.name/restaurantspokhara.html

Cooperatives and Pig Farms

Cooperatives and pig farms are involved in breeding, fattening as well as slaughtering and sales of pork as their piglets could not be sold during the blockade. One cooperative is involved in fattening, pork selling and feed production to help the members get cheap feed and a steady market for their fattened pigs. Some other farms started slaughtering and selling pork at fresh houses because of overcrowding of pigs in the farm. These farms used to supply piglets to Parvat and Baglung before the earthquake, which has now stopped for further production of piglets by the farms themselves in those districts.

During the discussions with the farm owners the following information was revealed:

- Those pig farms rearing pigs solely depending on feed from factory will incur losses as the price of feed is Rs. 1400 for 40 kg (which was Rs. 900 previously). Likewise the price of *Choker* is Rs. 1500 which was Rs. 1000 previously. Garbage from the hotels should be mixed with the feed from factory to avoid losses in sales of pigs and pork.
- Many farms have started breeding which has resulted in a larger number of piglet production that exceeded the total number of demand of piglets in the market. It has contributed to decreased sales of piglets from the pig farms thus reducing the total sales volume noticeably. Some farms even incurred heavy losses and closed down permanently.
- Besides, blockades imposed by India restricted the movement of goods and this contributed to remarkably increased price of feed. It created obvious shortage of feed in the market which negatively affected the nutrition intake by pigs and piglets. As a result many pigs either died or lost weight drastically.
- The rumor of swine flu also affected the sales of pigs in Pokhara. The farmers were ultimate victims of this circumstance as they could not sell their pigs to the market.



10. Problems and Prospects of Pig and Pork Market in Pokhara

Problems

1. Entry of many pig farmers in the pig breeding in recent years contributed to significantly increased pig production (piglets) and decreased sales.
2. Tourist flow in Pokhara remarkably dropped to almost zero because of earthquake hampering the hotel and restaurant business in lakeside where consumption of pig meat was maximum (before the earthquake)

3. The situation was further deteriorated because of the blockade imposed by India
4. Rumors about Swine Flu was also a cause of decreased sales of pig meat
5. Consumption of pig meat is still a social taboo for many local people – as it is not purchased and prepared in home by Brahmin, Chhetris etc.
6. Most of the Thakali and Newari restaurants do not serve pork dishes in Pokhara
7. It has been observed by the local super stores that the local products are not at par, in terms of quality, with the imported items as their color changes if frozen for long period; and packaging is not strong as some packets of hams and bacons have torn off.
8. Doubts on Foot and Mouth Disease (FMD) from foreign buyers has been one of the reasons of not getting demand of pork from other countries
9. Price of pig meat has come down as compared to last year (from Rs. 400 per kilogram last year to Rs. 350 this year)

Prospects

1. Big Stores and Shops mostly import Bacon, Ham and Sausage from Kathmandu (Gourmet and Nina and Hager, Urban and others) – Some (e.g. Sulav Cooperative) also sells local products with monthly average total sales of Rs 3 to 4 lacs. This indicates a good opportunity of producing and selling quality pork items by the local meat processing industries in the local market.
2. Sales of pork is higher during Lhosar, Dashain and Tihar; and lower during Ashadh, Shrawan (rainy seasons)
3. Sales of pork is gradually growing with the increasing flow of tourist in Pokhara
4. There is a scope of export of pork to India and third countries - if clean and organized slaughter houses are in place and a continuity of regular supply of specified quantity is ensured
5. There is an opportunity for a cold storage to keep the carcasses for sales in the touristic season (since larger number of pigs is being produced in Pokhara that cannot be sold immediately. it needs good storage to send to other districts and also to sell in Pokhara during tourist season).

People, hotels and restaurants contacted in Pokhara

	Name	Fresh House/Hotels/Stores/Processors	Address
1.	Chin Bahadur Gurung	Pokhara Meat Mart	Lakeside 6
2.	Ajaya Shahi	Pinky and Pravin Fresh House	Prithvi Chowk
3.	Roshan Khadki	Krishna Fresh House	Prithvi Chowk
4.	Prakash Shahi	Aatish Fresh House	Bagale Tole
5.	Resham Bdr Kc (Mate Pig Farm)	Kwality Fresh House	Bagale Tole
6.	Than Bahadur Gurung	Pork Breeders Farmers' Cooperative + Fresh House	Prithvi Chowk
7.	Kailash Palikhey	Binayak Super Market	Chiple Dhunga
8.	Tripti Gurung	Bhat Bhateni Super Market	New Road
9.	Bal Hari Sharma	Sulav Cooperative Sup. Mart	Lakeside
10.	Deependra Dhamala	Hotel Barahi	Lakeside
11.	Mahesh Thapa/Kumar Lama	Deng Feng Lai (Chinese Rest.)	Lakeside
12.	Dawa Sherpa	Old Land Restaurant (Chinese)	Lakeside
13.	Sanjiv Poudyal	Fewa Meat Products	Lakeside/Kaski
14.	Dr. Rakesh Prajapati	DLSO	Kaski
15.	Ajaya Parajuli	Sitepani Pig Farm	Kaski
16.	Dilli Ram Kunwar	Pig Farmer	Kaski

IV. Jhapa

Introduction

Jhapa, with an area of 1606 square kilometer and a population of 633042 (51% female and 49% male) with 156500²⁰ households, shares the border with India on east and south; and plays an active role in Nepalese politics since many big political personalities have represented this district in the parliament as well as the present cabinet.

Multiethnic groups such as Brahmin, Chhetri, Rajbanshi, Gurung, Rai, Limbu, Tamang, Kami and Damai are the inhabitants of this district which shows diversity in terms of living and traditions among the people in Jhapa. As most of the people depend on agricultural activities for their subsistence and income generation, cropping and farming activities are common in this district.

Pig Rearing in Jhapa (Pig Farms):

Livestock farming is adopted by many people in Jhapa for income earning. Pig Farming as one of the livestock farming activities in the district, has also been promoted by DLSO to help people raise income and generate self-employment. There are 79 registered pig farms in the district which are supported by DLSO in terms of vaccination, medication and other technical advices. Besides, there are many unrecorded individuals and farmers in Jhapa who rear one or two pigs in the backyard for family income and food security. Of the total 79 registered pig farms in Jhapa, 49 were registered during FY 2070/71 and remaining 30 in the year 2071/72

Table – 7 Pig Population in Jhapa District

District	Registered Pig Farms	Pigs in registered farms					Total pigs in district
		Sow	Boar	Piglets	Fattener	total	
Jhapa	79	1459	143	1816	698	4116	128612

Many pig farms in Jhapa District have been operating for breeding and piglet production for some years and many other new have emerged for the same purpose thus making the number of pig farms larger. This has suddenly increased the production of piglets consequently reducing the demand and price of the same.

Up to 2000 piglets from Jhapa (with a price of Rs. 4000 to 4500.) used to be sold to Sunsari, Morang, Dhankuta, Khotang, Ilam, Udayapur, Darjeeling and Sikkim every month. Now the demand has abruptly declined and the sales of piglets to these districts as well as Darjeeling and Sikkim in India have almost stopped. Before the blockade imposed by India, Indian police and border security force used to allow sales of piglets and pigs from Nepal to India if proper quarantine approval (from Quarantine Office on Nepal border) has been obtained by the supplier. Pigs used to be sent to Jaya Gaon for slaughtering first and to deliver pork to Bhutan later (as Bhutan does not allow slaughtering of animals within the kingdom).

Small number of pigs is still being sold illegally to other side of the border, however it is negligible and sent through Petty Custom Office in Bahun Dangi.

Control of cross border business of piglets and fattened pigs by the Indian government has abruptly reduced the sales which compelled the Nepalese farmers to hold the piglets in the farm. This circumstance contributed to overcrowding of pigs in the shades and increased economic burden for the farmers to feed the piglets. Many piglets and even the sows died later for not getting sufficient feed - which was one of the

²⁰ www.rapnepal.com

aftermaths of economic crisis that had arisen because of control of cross border business and blockade imposed by Indian government.

Indian government has promoted systematic pig farming in Orissa. The farms in Orissa are now supplying pig to Jaya Gaon; and piglets to Sikkim and Darjeeling. This has negatively affected the cross border business that the pig farms in Nepal were doing previously for piglets and fattened pigs.

Good quality pork can be sold in the market (or there is not any problem to sell quality pork in local markets), since people are becoming more quality conscious these days.

DLSO is providing grant to pig farmers which has helped produce larger number of piglets in the pig farms of Jhapa. As a result, there are more piglets and pigs available in the market as compared to the demand. Such situation has attributed to reduced price of piglets and pigs thus creating difficulties for the farmers even to recover the cost of production.

Increased price of feed has contributed to higher cost of production of pigs/piglets. The farmers think that the concerned government organization should provide subsidies in pig production to bring down the cost. This would help the farmers sustain their farming activities.

Middlemen (those who buy piglets from the farm and sell in other districts or send pigs/piglets to India) and individual slaughterers (who buy pigs from the farmers) are making higher margin of profits as compared to the farmers (who get small margin or sometime sell at a price below the cost of production).

Though some pigs (in a small number) are still being sent to India illegally especially to Rangpo (Sikkim) where daily 20 pigs are slaughtered and sent to Gangtok; it is risky and difficult to continue cross border business of pigs because of heavy fine imposed by the border security force if pigs are caught while being transported.

Local farmers started selling pigs to individual slaughterers for a little bit more profit as compared to that money which they were getting from the slaughter houses in Jaya Gaon (the gateway to Bhutan for Nepalese pigs /pork). This distorted the continuity in supply of pigs to Jaya Gaon by Nepalese pig farmers. As a result the slaughter houses of Jaya Gaon diverted their demand to Indian pig farmers which adversely affected the market chain of Nepalese pig farmers.

The demand of piglets in Nepal is now slowly increasing, which will require a good production plan to sustain the demand and survive in pig farming.

Meat Shops and Daily Sales of Pork in Jhapa

As Jhapa district is quite spread with seven municipalities and 37²¹ Village Development Committees, it is not that easy to quote an estimated number of meat shops selling pork in the district. A rapid survey of Birtamod and Damak was carried out to find out the tentative daily consumption of pork in these two towns. Based on the survey and discussions with different farmers as well as meat sellers it is estimated that there are almost 15 pork sellers in Birtamod and around 15 in Damak respectively each selling one pig daily. The retail price of pork in Birtamod and Damak is Rs.230 per kg.

Daily Consumption/Demand of Pork in Jhapa

It is estimated that the district consumes around 40 pigs daily; although the DLSO thinks that 100²² pigs are slaughtered daily. Birtamod alone consumes 10 to 15 pigs and Damak 15 pigs daily. There are other towns such as Bhadrapur, Uralbari, Surunga, Kakadbhitta, Bhadrapur, Mechinagar, Shivasatasi, Sanjarjun and Kankai where at least 1 or 2 pigs are consumed daily. There are other small emerging townships along the

highway where the travellers and bus staff stop for snacks and food and many small hotels and restaurants serve pork dishes for their customers.

DLSO in Jhapa indicated that there is not any problem of pork market in Jhapa, but the relationship of production volume and total consumption of the market has not been directly established. The production volume is far exceeding the total consumption demand of local markets. This has reduced the price of pork and increased the burden on the farmers for feeding and taking care of unsold pigs in the farm.

Hotel and Restaurants

There are number of hotels and restaurants selling pork dishes in Birtamod, Damak and other townships along the highway. Most of them prepare barbeque and fried slices as there is a good demand of such items in the markets.

Yunus Hotel alone at Sanischare Road in Birtamod sells 20 kg pork Barbeque daily. There are other hotels on bus stop which sell Barbeque and fried pork of around 30 to 50 kg daily. All these hotels and restaurants buy pork from the local meat shops located just outside the vegetable market. The local price of pork ranges from 230 to 250 per kg. depending on quality.

It was transpired from the discussions with the hotel owners that the number of hotels and restaurants has increased which has contributed to decreased sales of individual restaurant in the district.

Pig/Pork Export from Kakadbhitta

Export of pigs from the eastern border has been recorded as under in different years:

Table - 8 Comparative data of pig export from eastern border (Kakadbhitta) in different years²³:

Particulars	067/68	068/69	069/70	070/71	071/72	072/73
Pigs	0	6709	1732	3657	7172	286

As there is strict control of cross border business of pigs on Indian soil, the number of pigs exported in this year is recorded only 286. Export figures were encouraging in the years 068/69 070/71 (though decreased as compared to the former year) and 071/72. The restriction on selling pigs on the other side of border has discouraging effects on pig farms in eastern region of Nepal. In addition to the above numbers, a significant number of pigs (which is not known) were sent to India without registering in quarantine office during the past several years.

For the Nepalese pig farmers, the above figure of 072/73 indicates a gloomy market of pigs on the other side of the border.

Problems and Prospects of Pig and Pork Market in Jhapa

Problems

1. Pig production is far exceeding the demand in the district which has reduced the price and adversely affected the profit margin of farmers. Pig farmers, as a result, are facing difficulties to sustain their farm activities.
2. Indian government has restricted the cross border business of pigs ever since the blockade on Nepal border was imposed five months ago. This has created a huge problem for the pig farmers to sell their pigs/piglets to the Indian customers.

²¹ *ibid*

²² *Based on discussion with DLSO Jhapa*

3. Increased price of feed has increased the cost of production of pigs. This has been a problem for the farmers to sustain their pig farming activities.
4. As slaughter houses of Jaya Gaon are buying pigs from Indian farmers conveniently, it has now become difficult for the Nepalese farmers to export their pigs to India and Bhutan through both legal and illegal conduits.

Prospects

1. As the consumers are becoming more quality conscious, good quality pork can be easily sold to Nepalese customers. Moreover, consumption of pork is also increasing in Nepal indicating a good potential of larger market within eastern region of Nepal.
2. Considering the bigger production volume, possibility of establishing slaughter and cold storage to preserve pork for future consumption obviously exists in Jhapa (since Jhapa is one of the districts which produce larger number of piglets).
3. With the technical assistance from DLSO, the farmers in Jhapa can promote quality breeding and produce piglets which grow faster. This may help the farmers reduce production cost and sell quality pigs in the markets.
4. Many customers come from hilly districts to buy piglets for their farm or individual rearing and they always look for quality; the farmers may carefully cash this sentiment of the customers to sustain in the market and take economic advantage from farming activities.

People, Hotels and Restaurants contacted during Jhapa Visits

1.	Madhav Dahal	DLSO	Jhapa
2.	Dr. Mukesh Singh	Quarantine Office	Kakadbhatta
3.	Bhim Rai	Pig Farm	KinratChowk, Surunga
4.	Sanjeev Rai	Kulung Pig Farm	Top Gachhi
5.	Bam Bahadur Magar	Butcher	Birtamod
6.	Karan Rai	Butcher	Birtamod
7.	Ram Bahadur Tamang	Butcher	Birtamod
8.	Indra Kumar Rai	Butcher	Birtamod
9.	Tilak Devi/Indra Shrestha	Yunus Hotel	Sanischare Road, Birtamod
10.	Numa Limbu	NPN Hotel	Damak
11.	Laxmi Rai	Suhang Sekuwa Corner	Damak

²³ Annual Bulletin, Animal Quarantine Office -069/70; MOA and Cooperative, Nepal Government

V. Nuwakot

Introduction

Nuwakot, one of the districts in Bagmati Zone, with total area of 1121 square kilometer and a population of 277471²⁴, is situated in a distance of 75 kilometer from Kathmandu. Its head quarter is Bidur and also has other townships such as Trishuli, Battatar, Devighat Gangate, Ranipauwa etc, that lures internal and foreign tourists for sight- seeing and trekking. Nuwakot is famous for the 7 storied Nuwakot Palace which is located in Devighat.

Pig Rearing in Nuwakot and DLSO Supports (DLSO Mr. Khagendra Raj Bhatta)

Pig Rearing in Nuwakot has become popular, as the farmers are getting good supports from DLSO for pig farming. Nine “Cooperatives” received 450 pigs from DLSO Nuwakot within a period of two years. As

Nuwakot is close to Kathmandu it is easy for the farmers to send the pigs to Kathmandu valley for slaughtering. There was a collection center in Timure, which used to send around 35 pigs daily to Kathmandu for slaughtering. “3A Trishuli Hydro Power Company”, which is not far from Bidur also used to buy 5 pigs every day for the workers before the earthquake of 2015.

At present, there are almost 100 Pig Farms in and 15594²⁵ pigs being reared by the farmers in Nuwakot. DLSO Nuwakot has targeted 10000 pigs for vaccination in the district within this year.

Before the earthquake, 20 to 24 pigs used to be transported by trucks to Kathmandu every week from this District. Chinese workers employed by the Hydro Power Companies operating along the Rasuwa road used to buy pigs to slaughter them in Timure, which is completely stopped after the earthquake (since Chinese workers have fled to China with a terror of frequent after- shocks).

As a result of government’s support to pig farming, there was excessive production and supply of piglets causing an abrupt decline in demand and sales of the same. As the sales of piglets drastically decreased, many of the farms diverted their attention to fattening.

The price of feed has increased because of blockade and short supply, making it difficult to provide sufficient feed to pigs with a small budget that was set aside for piglet production. The quality of feed has deteriorated as it has caused slow growth of pigs. As a result, many of the farms sold the pigs at a price which is below the cost of production. The local demand of pork is also very low, as one pig is sold in 2 or 3 days, and the price of pork has come down to Rs. 250 to Rs. 300 per kg.

The pig farmers opine that the government should make a provision of certification of breeding and pig production with necessary subsidies to the farmers, to help them sell their pigs to other countries. Besides, a cold storage to preserve the carcasses or slaughtered pigs to sell the meat during high demand is required in the district.

The government should also think about providing grant to the pig farmers during such crisis of earthquake and blockades so that they could sustain and continue their farming activities by avoiding losses.

²⁴ Wikipedia – Nuwakot

²⁵ DLSO Nuwakot

Problems and Prospects of Pig/Pork Market in Nuwakot

Problems

1. After the earthquake, sales of piglets has drastically declined almost to zero. This has overcrowded the pig farms requiring larger volume of feed and more attention to the pigs for their growth and maintenance of good health. Thus, the farmers are experiencing an additional
2. burden of increased expenses on feed for those pigs which were supposed to be sold earlier.
3. Price of feed in the market has increased which has direct and adverse effects on cost of production of pigs. This problem has been attributed to dependence on India for feed.
4. Production of pigs and piglets has far exceeded the sales of pigs in the district causing an abrupt decline in the price. This has adverse effects on pig farming as many have incurred loss and some already closed down.
5. There was a rumor of swine-flue in the district, which adversely affected the sales of pigs and pork.

Prospects

1. Consumption of pork in Nuwakot is slowly increasing which indicates a potential of future growth of pork markets in the district. It can also be a prime location for supply of pigs to Kathmandu, if the farmers continuously work to maintain the quality production.
2. Nuwakot is not that far from China border it can send pigs for cross border business if it is allowed by both the countries.

People contacted in Rasuwa

1.	Khagendra Raj Bhatta	Senior Livestock Development Officer	Nuwakot
2.	Gokarna Thapaliya	Pig Farmer	Bidur

Kathmandu valley

Introduction

Kathmandu, one of the mostly populated districts in Nepal, covers an area of 395 square kilometer and has a population of 1744240²⁶. This district has accommodated many traders, manufacturers, hotels, service providers, tourist businesses, government employees and staff of several organizations and also several farm houses along with its permanent local inhabitants. Kathmandu Metropolitan City, the capital city of Nepal with its area of 49.45 square kilometer and a population of 975453²⁷, also lies within Kathmandu District.

Kathmandu Valley comprises three cities namely Kathmandu (with a population of 1744240), Lalaitpur (with a population of 466784²⁸) and Bhaktapur (with a population of 304651²⁹) and provides various opportunities of trade, industry and farming activities to the interested individuals and or companies.

Pig Rearing in Kathmandu

Table – 9 No. of recorded pig farms and pig population in Kathmandu

District and City	Pig Farms	Total Pigs in district
Kathmandu District	19	11679
Lalitpur District	14	7015
Bhaktapur District	83	4528

Central Pig and Poultry Promotion Office, Hariharbhawan,

There are some known places where pig farming and slaughter places are located in Kathmandu. Nakhipot, Koteswor, Matatirtha, Balaju, Mandikatar and Gangabu are some of the places where pig and pork businesses take place significantly.

Meat Shops in Kathmandu and their Daily Sales

There are many meat shops in Kathmandu, some recorded and many others not, hence it is difficult to quote their exact number. The total number of pork sellers in Kathmandu, based on the discussions with individual pork sellers and wholesalers, has been estimated as to be 150. Their sales volume ranges from 30 kilogram per day to 1 or 3 to 5 pigs daily, but such number of shops selling more than one pig is not that many. If the pork sellers have good contacts with restaurants who buy comparatively larger volume, their sales will be higher as compared to shop which sell only to the individual customers for household consumption.

As per the information provided by Kathmandu Metropolitan City Office to Kantipur Daily (Chaitra 5, 2072), every day 150³⁰ pigs are slaughtered in Kathmandu Valley. This indicates that at least 10500 kg (150 x 70 kg) of fresh pork is consumed daily in Kathmandu Valley. In addition to this, many people, especially working with diplomatic and international organizations buy frozen pork from different stores and processing industries which operate in Kathmandu; and many of the processing industries also sell the frozen and processed pork from their own outlets. Together with the sales of packed pork items from the meat processing industries or their outlets, the total daily consumption of pork in Kathmandu valley exceeds 11000.00 kg.

²⁶ *En.wikipedia.org/Kathmandu district*

²⁷ *en.wikipedia.org – Kathmandu*

²⁸ *En.wikipedia.org/Lalitpur distict*

²⁹ *En.wikipedia.org/Bhaktapur district*

Foreign nationals, diplomats and expatriate staff residing in Kathmandu consume pork considerably. Chinese, Japanese, Korean, American and European buy pork from different stores. They buy chops, ham, bacon and sausage from the stores which they know very well.

The following chart provides information on number of shops, daily sales and price of fresh pork in Kathmandu:

Table – 10 No. of Shops, daily sales and price of pork in Kathmandu

Estimated no. of meat shop selling pork in Kathmandu	150
Average daily sales of pork by individual shop	70 kg
Total Daily Sales	170 pigs or 11900 kg
Wholesale Price of pork per kg	Rs. 230
Retail Price of pork per kg	Rs. 320 - 350

The wholesale price of pork was Rs. 280 per kilogram before the earthquake of April 2015, it decreased to Rs. 230 per kilogram immediately after the earthquake and has not changed for the last seven months.

Wholesalers and Slaughter Places

There are slaughter places and wholesalers in Thankot, Khichapokhari and Nakhipot which slaughter around 80 to 90 pigs daily and around 40% of 90 slaughtered pigs (36 pigs) are sold to individual pork sellers and 800 to 900 kg or 12 pigs (13%) to food processing industries (although some of them buy on weekly basis by calculating the daily required quantity). The rest are sold to small restaurants (12% of 42 pigs that is 5) and local consumers (88% of 43 pigs that is 37).

The following table depicts a clear picture of total number of pigs slaughtered in Thankot, Khichapokhari and Nakhipot daily for different purposes:

Table- 11 Wholesalers, slaughtered pigs and buyers in different slaughter places in Kathmandu (daily)

Pork Sold to	Total Pigs Slaughtered in Thankot, Khichapokhari and Nakhipot	Number of pigs sold	Percentage
	90		100
Individual Pork Sellers for Retail Sales		36	40
Food Processing Industries		12	13
Small Restaurants		5	6
Local Consumers		37	41

Local Consumption of Pork in Kathmandu

Consumption of pork in Kathmandu is estimated as to be increasing by 10 percentage³¹ every year. There was not that much effect of earthquake on daily sales of pork in the individual meat shops. The sales was low for some days, which came to normal afterwards resuming sales of 160 to 170 slaughtered pigs or 11200 to 11900 kg every day.

As many people from all over Nepal have settled or are working in Kathmandu Valley making the valley busy and urbanized rapidly, there is a little concern among the people about others' life style. Such situation

30 Badhshala Byapasthapan ko Tayari; Jagdishwor Pandey, Kantipur Daily, page 4,

has provided enough opportunity to the people even from higher caste to buy and cook buff and pork in their kitchen. This has been helpful for the pork sellers to sustain or even increase their sales in Kathmandu Valley. Many young people come to Kathmandu every day in search of work and to continue their study and many of them are pork eaters. This has been an advantageous factor for Kathmandu valley to get a steady growth in demand of pork.

Hotels and Restaurants

There are many 3 to 5 Star Hotels and a large number of restaurants in the valley which serve different types of cuisines for their customers, both local as well as tourists visiting from various parts of the world. As per wikipedia³² there are 10 hotels with 5 star, 6 with 4 star and 18 with 3 star ratings in Kathmandu Valley. In addition, there are many other standard and general hotels in Kathmandu. There are a number of restaurants in Thamel and other areas of Kathmandu which serve local as well as foreign dishes such as Chinese, Mexican, Italian, French and more as per the demand of customers.

Many of the hotels and restaurants serve pork dishes/items as per the choice of customers. Most of the big hotels and renowned restaurants buy pork items such as ham, bacon and chop from the stores and others buy fresh pork from the pork sellers to prepare pork dishes for their customers. One hotel of 4 star category can serve 2.67³³ tons of pork (worth Rs. 1768000) to their customers every year.

Five Star hotels may serve slightly more or equivalent to 2.67 tons and three star hotels can serve almost the same or lower than this depending on capacity.

If this figure is taken as an average for the hotel consumption, the total demand of pork in Star Hotels of Kathmandu comes to be 91 tons (worth Rs. 60,257,678.00per year) -

There are other small restaurants who serve pork dishes to the customers, which may consume another 9 to 10 tons of pork in a year, making a total consumption of pork 101 tons by Hotels and Restaurants in Kathmandu (worth Rs. 66,879,401.00 per year). (based on information provided by 3,4 and 5 star hotels and restaurants).

Meat Processing Industries in Kathmandu

There are number of meat processing Industries in Kathmandu which also produces pork sausages and processed meat such as ham, bacon and chop.

Chart - 12: Annual Production and Monetary Value of the pork purchased by the processors

Processing Industry	Pork Purchase (kg)		Rate (Rs.)	Total Value (Rs.)
	National	Import		
Nina and Hager	115000	15000	270.0	35100000.0
Meatco	132000	0	320.0	42240000.0

The Meat Co is on an average purchasing fresh pork at local market and frozen from Banke and Bardiya districts for processing into various pork products such as Bacon, Ham, Sausage, means meat, belly, tender loin, pork chops, ribs for sales mainly to star hotels and departmental stores in Kathmandu and other major cities throughout Nepal. The major chunk of pork procured is processed for Bacon production which shares 75% of the total sales of various pork meat products of the company. The rest 25% is processed for ham and sausage, chop, ribs and belly production and sale. The Monthly procurement of fresh pork (hot carcass) from local market (contract suppliers) stands on average of 6000 kg and purchase of frozen pork from western Nepal accounts 5000 kg. The procurement of pork and sale of pork products dropped by almost

31 Nina and Hager

32 En.wikipedia.org/hotels in Kathmandu

33 Hotel Himalaya

60% as a consequence of earthquake and blockade, which are heading towards normality recently. The factory price paid to the supplier is Rs 320.0/kg.

Nina and Hagers is both purchasing pork from local suppliers and importing from Thailand. The annual volume of pork purchased stands at 130 MT.

The market price of pork products such as bacon, ham and sausage do vary across companies. The retail price of Bacon and hams range from Rs 1000.0 to 1200.0 per kg and that of sausage is Rs. 900.0 The retail price of the boneless pork chop is Rs 1000.0/kg

The other pork processing industries in Kathmandu valley are Swiss Gourmet, Prasuma, Gourmet Vienna and Urban Food Products producing Bacon, ham, sausage and salami quantity ranging from 50 to 500 kg per day.

Departmental Stores - selling Pork Items

There are several super stores such as Bhat Bhateni, Selways, Bluebird selling pork items in Kathmandu. Other general stores which are bigger than the general groceries also sell pork items. These stores sell pork items to the hotels, restaurants and ultimate consumers. Hotels and restaurants have special agreements with them for specific pork items which they buy regularly and mode of payment – (for example Hotel Summit has agreements with more than one meat processor). General consumers buy pork items based on their needs and pay the price immediately. Many of the foreigners and expatriate staff who are based in Kathmandu also buy pork items from these stores.

There are nine branches of Bhat Bhateni Supers Store and three of Selways in Kathmandu valley having average sales of Rs. 208,333.00 of pork items. These stores get pork items from the local meat processors such as Gourmet, Meatco, Nina and Hager, Urban Meat Products, Sea Food etc. on special agreements for supply and payment. Special items such as pork luncheon are imported from China and other countries. These stores did not experience much difference in sales before and after the earthquake.

Problems and Prospects of pig/pork market in Kathmandu

Problems

1. Pork selling places in Kathmandu are not organized and systematic, as many of the shops lack freezers and the shop owners who are using freezers do not have proper knowledge of cooling system and temperature maintenance for pork. Besides, many shop owners pay less attention to hygiene and cleanliness hence the shop do not look appealing. People buying meat from these shops do not feel coming back again as they lack cleanliness. This has been one of the reasons of decreasing sales in many pork selling shops.
2. Pork is not available everywhere as chicken, and the price is also not similar in all shops - ranging from Rs. 300 to Rs. 350 per kilogram. Customers find such differences in price very awkward, as a result, they may change their preference to something else such as chicken or buff.
3. Kathmandu valley does not have an organized and systematic slaughter place for pigs. Many pigs are slaughtered either on the river banks or side of roads making the river and the road dirty on the one hand, detracting the customers from buying pork (for hygiene and health concerns) on the other.
4. A significant volume of daily slaughtered pigs and processed pork items are consumed by the tourists that visit Kathmandu. The total consumption demand will come down drastically even if a rumor such as swine- flue spreads in the country.

Prospects

1. Population of Kathmandu is perpetually growing, as many migrate to this city for education, medical treatment and employment every year. Pork buyers and consumers are also increasing together with population growth, which indicates that the demand of pork will be increasing in the coming years too.
2. As a capital city, Kathmandu attracts many tourists from all over the world who have different tastes; and majority of them consume pork. Furthermore, many foreign delegates travel to Kathmandu to attend several workshops and seminars frequently organized by international and multinational agencies. They also consume pork items when they stay in capital city for some days. If quality products are available locally, hotels and restaurants will buy them to serve to the foreign tourists, delegates or even to the local customers.
3. There are many diplomats, expatriate staff and representatives of multinational agencies staying in Kathmandu who consume pork and seek for quality products. Processed pork items such as chops, ham and bacon are in high demand among these foreign representatives and expatriate staff in Kathmandu valley and it will never decline so long as quality products are available. Nina and Hager (which has got a large number of loyal customers from expatriate staff and foreign diplomat circle) alone has a transaction of 130³⁴ tons of pork (15 tons imported and 115 tons from local suppliers) every year. This justifies that there is a special segment in pork market in Kathmandu which prefers quality products and the demand for pork from that segment is steady.
4. Opening of new slaughter houses in Kathmandu valley would provide clean meat to the people or consumers. Cleanliness and proper attention towards hygiene would also encourage non pork eater to start consuming pork dishes. As Kathmandu is urbanizing rapidly, taste and thinking of people are also changing, and they taste dishes and things which are new to them. Social taboos about eating and cooking pork or buff items among the new generation of higher caste people are not of that importance nowadays. People prefer clean and hygienic food items. In this perspective, the future demand of pork among the local dwellers in Kathmandu will not decline so long as cleanliness and hygiene factors are taken care of by the pork sellers. In such a case, sales of pork will rather increase and new segments in pork market will appear and continuously be added.

People Consulted in Kathmandu

1.	D B Majakoti	Livestock Officer	Livestock Market Promotion Directorate, Kathmandu
2.	Dash Raj Shrestha	Aarogya Masu Prasodhit Udhyog	Banepa
3.	Akil Sahi	Lumbini Cold Storage	Seshmati, Kathmandu
4.	Vijaya Rai	Kathmandu Meat Mart	Gangabu, Kathmandu
5.	Badri Silwal	Hotel Himalaya	Kupondole, Lalitpur
6.	Sunil Pradhan	Bhatbhateni Super Store	Krishna Galli, Patan
7.	Bhuvan Adhikari	Sellways Super Store	Jawalakhel, Lalitpur
8.	Chandra Tiwari	Nina and Hager	Thashi Khel, Lalitpur
9.	Binaya Limbu	Pork Seller	Nakhipot (met in the workshop- FNCCI)
10.	Prem Singh Lama	Cooperative	Dolakha (met in the workshop- FNCCI)
11.	Om Darlami Magar	Slaughter House	Matatirtha (met in the workshop –)
12.	Ram Krishna Regmi	Pig Farm	Chitoun (met in the workshop- FNCCI)
13.	Mr Kiran Rai	Fresh House	Nakhipot

³⁴ Nina and Hager

VII. Banke

Introduction

Banke district, with its area of 2337³⁵ square kilometer and a population of 491,313³⁶ (247058 female and 244,255 male) and 94773 households, shares the border with India on south serving as a gateway to Bheri Zone of Nepal (as per old administrative division) for people and varieties of commodities from India.

A domestic airport existing in this district links Nepalgunj to different hilly districts of mid-western region of Nepal and to the capital city Kathmandu as well. Nepalgunj serves as a business hub for the hilly districts such as Surkhet, Dailekh, Jumla, Humla and other remote areas in the mid-western region by transporting varieties of goods to the remote districts.

This district, as lies in the plain and southern belt of Nepal with considerable area of cultivated land, many people are also involved in farming activities – both crops and livestock for subsistence as well as income generation.

Pig Rearing in Banke (Pig Farms):

Many people are involved in pig farming in Banke because of support from DLSO to this activity for income generation and self-employment. There are 137³⁷ individuals, as per the inventory list of Banke, who are involved in pig rearing activity. These individuals possess at least one and maximum 240 pigs in their farms.

Table – 13 Pig Population in Banke District

year	Total Number of pigs in Banke
2070/71	87303
2072/73	2276

The number of pigs in the year 2072/73 looks very small as compared to the number of pigs in the year 2070/71. The decreased number of pigs in the current year can be attributed to the earthquake and subsequent blockade imposed by India which hit the farming activities adversely and many pigs were sold at a lower price. The rumor of swine-flue aggravated the situation further as many people stopped rearing pigs for fear of the disease.

Front part and Rear part at Rs. 400.00 per kg and the mixed pork at Rs.220.00 per kg to MEATCO, Urban Meat Processing, Star Meat, Sea Food, party palaces and even hotels in Kathmandu and also to Fewa Meat Processing in Pokhara. Malla Cold Store in Lazimpat also gets pork from these suppliers in Banke. They supply 38 tons of pork to Kathmandu and 5 tons to Pokhara every month.

Suppliers of Pork

Some of the big pig farms in Banke, have changed the orientation towards fattening and slaughtering of pigs to avoid losses which they had incurred from decline of sales of piglets after the earthquake. They started with slaughtering their own pigs in the beginning and slowly included pigs from other farmers for production of pork and pork cut pieces from their slaughter places. They supply boneless pork, Bacon, Front part and Rear part at Rs. 400.00 per kg and the mixed pork at Rs.220.00 per kg to MEATCO, Urban Meat Processing, Star Meat, Sea Food, party palaces and even hotels in Kathmandu and also to Fewa Meat

³⁵ District Livestock Service Office- Annual Booklet 2070/71, p1

³⁶ *Ibid*, p2

³⁷ DLSO Livestock Inventory, 2072/73 - Banke

Processing in Pokhara. Malla Cold Store in Lazimpat also gets pork from these suppliers in Banke. They supply 38 tons of pork to Kathmandu and 5 tons to Pokhara every month.

These suppliers have got good contacts with the local farmers who rear pig in the village, hence do not have any problem of getting pigs for slaughtering. Many of the pig farmers provide pigs to these farms for slaughtering. They have built up their own slaughter houses and cold storages with a total capacity of 117 tons to freeze the cut pieces for delivery to Kathmandu and Pokhara. They have their own delivery vans with an air-conditioner fitted in the containers to maintain the temperature and avoid spoilage and stinks.

Some of the local farmers slaughter pigs by themselves and deliver them to the suppliers at Rs. 180 to Rs. 200 per kilogram.

Sales is higher during cold and festive seasons whereas it is lower during rainy and summer season. During winter 80% of the total sales of the year is sold.

Hotels and Restaurants

There are a number of hotels and restaurants (a few bigger and many smaller) in Banke, but they do not serve pork to the customers. There are some barbeque corners in Nepalgunj and Kohalpur which buy pork from the local sellers but the volume of purchase is not that significant. In a word, it can be said that the

Local consumption in Banke

Local consumption of pork in Banke is not encouraging, as a significant number of Muslim people live in this district, who do not consume pork and most of the hotels do not cook and serve pork dishes in Nepalgunj despite the inflow of many people from other districts- including a good number of expatriate staff of international organizations. The daily consumption of pig in this district is around 13, which comes to be almost 900 kg. There are some farmers who slaughter pigs and divide among the villagers - such pigs are also included in this figure (13 pigs per day).

The local consumption in this district is low, whereas supply to other districts is very encouraging.

Effects of earthquake on sales of pigs/pork

Sales of piglets and pork was affected negatively after the earthquake especially during the period of blockade imposed by India. The price of feed increased and the movement of pig and pork to other districts became difficult for shortage of fuel. Furthermore, feed was also not easily available which adversely affected the nutrition intake of pigs and piglets contributing to their slow growth. Sales of piglets to other neighboring districts such as Jajarkot and Surkhet were also affected by the same problem.

Besides, the rumor of swine-flue in the pigs, created a fear among the pig rearers causing a sharp decline in sales of piglets.

Problems and Prospects of Pig/Pork Market in Banke

Problems

1. Local consumers are very few in Banke, hence local sales is also low. There are few areas such as Dhamboji, Jamunaha and Kohalpur where pork is sold.
2. Hotels and restaurants also do not serve pork because of a fear of losing the customers. They generally serve chicken, fish and mutton considering the local consumption pattern.
3. Eating pork is still taken as a taboo among the majority of local inhabitants in Nepalgunj, which has affected the sales of pork in the district as a whole.

4. Price of feed is high, hence rearing pigs just based on feed available in the market is not profitable for majority of the farmers, and this is applicable even to the larger farms. This has been a major factor for many of the farmers to close down their pig rearing activity.

Prospects

1. There are many farmers in the villages who rear pigs using the garbage and other local feeding materials, which bring the cost down and also help the farmers to sell the pigs even at a lower market price. This helps the farmers to remain in pig rearing activities despite some occasional fluctuations in market price of pigs.
2. There are a number of suppliers of pork in Banke who have good contacts with food processing industries and wholesalers in Kathmandu. These suppliers, as continuous buyers of pigs and pork, can ensure a good market of pigs to the farmers and provide even financial supports to promote pig rearing. Thus the established forward and backward linkages of suppliers may help sustain the pig rearing activities in Banke.
3. There is a possibility for the meat suppliers in Banke to start producing quality processed meat in order to supply to big hotels as well as departmental stores in and around Nepal. They, once start quality production of pork items, and become capable of following all the international standard procedures of production of meat items, can influence the government for a favorable export policy for pork items and even the raw pork.

People Contacted in Banke:

1.	Dr. Bed Bahadur KC	DLSO	Banke, Nepalgunj
2.	Karmadhoj Satyal	Planning Assistant, DLSO	Banke, Nepalgunj
3.	Deependra Joshi	Fresh Hygienic Food & Animal Farming	Simalghari, Banke
4.	Madhav Regmi	MK Bangur Farm	Samsher Gunj, Banke
5.	Krishna Adhikari	MK Bangur Farm	Samsher Gunj, Banke
6.	Binod Sonkar 's Mother	Binod Bangur Masu Center	Jamunaha, Nepalgunj
7.	Mahesh Chaudhari	Pig Farmer/Pork Seller	Naubasta, Banke
8.	Dilip Sonkar	DK Meat Products	Nepalgunj, Banke
9.	Lallan Prasad Sonkar	Pradeep Masu Center	Nepalgunj, Banke
10.	Bishesh Raj Thapa	Siddhartha Hotel	Nepalgunj, Banke
11.	Prem Bishta	Bheri Meat Shop	Nepalgunj, Banke

VIII. Bardiya

Introduction

Bardiya, with an area of 2025 square meter, a total population of 426576³⁸ (51.9% female and 48.1% male) and 79197 households, is a leading district in terms of cultivation and also known as a food store³⁹ of mid-western region of Nepal. Most of the people in the district are involved in farming activities for their livelihoods and income generation. Different types of additional activities (in addition to the normal crop farming) such as cows rearing, fishery and poultry and pig rearing are popular in the district for income earning.

Pig Rearing in Bardiya

Pig rearing, one of the activities of the people in this district for income earning, is widely accepted in the villages as a source of additional income for the family. Hence, many small farmers have adapted this as an additional activity to their day to day crop farming. Garbage from the houses or hotels is collected as a feed for the pigs, hence rearing of one or two pigs is not very expenses for the villagers.

There are some big farms also in the district, which also mix the feed with locally available nutritional grass or husks to prepare the food for the pigs. It has helped the farmers bring down the costs.

Chart – 14 No. of Pigs in the district in two different years (2071/72 and 2072/73)

Years	Total Number of Pigs
2071/72	2085
2072/73	67213

In the year 2071/72 the total number of pigs in the district was 2085⁴⁰, whereas the total number of pigs in the year 2072/73 has reached 67213⁴¹, which does not look natural, sine the total population has a more than thirty fold increase.

Hotels and Restaurants

There are very few hotels and small restaurants in Gulariya, the headquarter of the district, where pork is rarely served that indicates a very insignificant consumption of pork by the hotels.

Daily Consumption of pork in Bardiya

Daily consumption of pork in Bardiya is almost 700 kg, as there are 10 to 12 pork sellers in and around Gulariya who sell around 40 to 60 kg per day. There are farmers in the villages who slaughter pigs and divide the meat among the neighbors, but the exact number of pigs and quantity of pork consumed in the villages is not known. The retail price of pork in Bardiya is Rs. 220.00 per kg.

Pork Suppliers in Bardiya

A pork selling shop has been slaughtering pigs at its own slaughter place and supplying pork to Kathmandu and Pokhara after cutting and making pieces of the carcasses. It supplies 70% of the total volume to Kathmandu and 30% to Pokhara. The total volume of monthly supply of pork from this shop to Kathmandu and Pokhara is 16 tons.

³⁸ Barshik Pragati Pustika 2071/72, DLSO, Bardiya, p1

³⁹ *ibid*

⁴⁰ *Ibid* pp41..49

⁴¹ DLSO Bardiya record, 2072/73

It buys pigs from Kailali, Bardiya and Banke districts at a price of Rs. 170 to Rs. 180.00 per kilogram. The price of pigs has decreased at the moment, previously it was Rs 190 to Rs. 200 per kilogram.

It sells belly at a price of Rs. 350.0 per kg; leg piece at Rs. 280.0 and skin less at Rs. 500 respectively. Mixed pork is delivered at Rs. 240.00 per kilogram to the buyers in Kathmandu.

METCO and New Sea Food are the main buyers in Kathmandu, and so is Fewa Meat Products in Pokhara. Urban Food and Budhathoki Cold Storage in Sitapaila – Kathmandu are also buyers of pork from this shop.

Effects of earthquake

Immediately after the earthquake, there was a decrease in sales which was further exacerbated by the blockade imposed by India at borders. The farmers were in problems as there was less demand of pigs from the suppliers during the blockade. In the meantime there was a rumor about swine-flue in Bardiya and Nepal as a whole, which created a fear among the people and consumption of pork decreased with an adverse effect on total sales volume of the shop.

For the last 3 months, the sales of individual pork sellers and major suppliers have increased as the demand from different buyers has also increased.

7. Problems and Prospects of Pig and Pork Market in Bardiya

Problems:

- The number of local pork eater is limited to certain ethnic group such as Chaudhari and Tharu in Bardiya. People from other ethnic groups still stay away from consuming pork, as it is taken as social taboo.
- There are very few hotels and restaurants in Gulariya - the main market area in the district; and these hotels and restaurants do not serve pork dishes. There are other newly emerged municipalities in the district, but they are also not developed in terms of serving different cuisines to local people. Pork dishes are rarely served in the hotels and restaurants.

Prospects

- There are many farmers who rear pigs for economic benefits, as selling pigs is not difficult for them because of presence of many pork suppliers in Banke and Bardiya. These farmers do not spend money to buy feed for the pigs, they, rather use garbage as feed save a considerable amount of money which could be spent on feed if it was purchased from the market. This reduces the cost of production of pigs dramatically, hence the farmers do not shy away from selling the pigs in accordance with the frequent price fluctuation in the market. This indicates a good possibility of constant supply of pigs in the district.
- The suppliers can build up a long term relationship with the pig farmers by providing them with advance amount to buy piglets and required medicines so that the farmers could continue the pig rearing without any interruption in production and supply cycle.
- The number of pig rearers is high in the district so as the number of existing pigs, which can be a motivating factor for the entrepreneurs who want to establish a meat processing industry in the district. This may increase the value of the product in the chain and also the gross domestic products of the district as there will be significant increase in economic activities in the district for pig production and pork processing.

People Contacted:

1.	Krishna Kanta Neupane	DLSO	Bardiya
2.	Kaji Ram Tharu	Chaudhari Bangur Masu Pashal	KusumbaBazar, Bardiya

Annex 6.2 Checklists used to gather information

i. Questionnaire for Market Survey of Pigs - (Individual Meat Sellers)

Date:

Name of the Shop Owner:

Street:

Municipality:

District:

Interviewer:

A. General Information:

1	When did you start selling pig meat (pork)?	...	
2	What is the price of pig meat in this city/town? (per kg)	Rs....	
3	What is the volume of your daily sales?	Kg.....	Rs...
4	How many similar shops (like yours) in the town/city?		

B. Buyers/Sellers

5. Whom do you sell fresh meat - individual buyers, hotels, stores/shops or all?

Buyers	Daily Sales		Total		Total Number
	Kg	Amount Rs.	Kg	Amount Rs.	
Individual Buyers					
Restaurants					
Fresh Houses					
Stores/Shops					

6	How many people (in average) buy fresh meat from your shop in a day?	
7	How many hotels buy fresh meat from your shop?	
8	How many shops are there in this town/city which buy pig meat to sell to the end users?	

C. Seasonality

9	Which months or seasons do you sell most?	Months.....	Seasons.....	
10	What is the daily sales during such seasons?	Kg....	Rs.....	
11	Who are the buyers during such peak seasons?	Individual Buyers ...	Hotels ...	Shops/Stores ..
12	Which seasons or months do you sell least?			
13	What is the daily sales during such seasons?	Kg....	Rs.....	

D. Pig Farmers/Slaughter House/Pig Sellers

14	Do you slaughter the pigs by yourself?	Yes	No	
15	Do you buy the meat from others to sell?	Yes...	No....	
16	Where do you buy the pigs if you slaughter them by yourselves?	Pig farms..	Individual farmers	both

17	What is the price of live pigs (if you buy them) in the market?	Rs... per kg.	
18	Do you also buy live pigs from other towns/cities to sell pig meat?	Yes....	No...
19	If yes...which towns/cities?		
20	Who are the pig raisers in this town/city? And how many are they?		

E. Quality

21. What kind of meat is purchased by different buyers from your shop?

Buyers	Fresh Meat			Frozen Meat		
	Mixed with Fat	Without Fat	Without Fat and Bones	Mixed with Fat	Without Fat	Without Fat and Bones
Individuals						
Hotels						
Shops/Stores						

22. How do you ensure better quality of meat, sausage and bacon in your store?

23. How do you ensure that the pig was healthy and vaccinated?

F. Sales/Price/Trend

24	Is there any increase in daily sales this year as compared to last year?	yes	No		Qty...	Rs...
25	Daily/Annual sales last year and this year	016	015	014	013	012
		kg	kg	kg	kg	kg
26	Sales Price last year and this year (per kg)					

G. Difficulties or Barriers in Pig Markets

27. What are the difficulties faced by you to increase sales of pig meat?

- a. Competition b. Short supply c. Financial Accessibility
d. Change in Taste e. Poor Quality of Meat f. Others

g. Please suggest the measures to overcome the difficulties.....

.....

H. Other Information

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ii. Restaurants/Hotels

Date: _____ Name of the Restaurant: _____ Street: _____
Municipality: _____ District: _____ Interviewer: _____ Owner: _____

A. General Information:

1	When did you start the restaurant?
2	What Pork items you sell in this restaurant?
3	How much pork do you use every day for the dishes in your restaurant?	Kg... Rs...
4	What items of pork are mostly liked by the customers?	
5	Do you also serve other items (sausage, ham/bacon) to the customers	Yes..... No...
6	If yes... what do you sell and what is the daily sales of such items?	Rs...
7	Who are your main customers?	Locals Tourists Students ... Others ...

B. Other Restaurants/Hotels

8	How many other restaurants like yours are there in this town/city? (tentative...)				
9	Who are their main customers?	Tourists	Locals	Students	Others

C. Slaughter House/Pig Sellers

10	What is the price of pig meat in the market	Pure Red meat	Mixed with bones and fat	Fat	Intestine
		Rate kg...	Rate kg...	Rate kg...	Rate kg...
11	Where do you buy pig meat for your restaurant?	Slaughter house		Individual sellers or slaughters	
12	How many meat sellers or slaughter houses are there in this town/city?				

D. Quality

13. How do you ensure that the meat you buy was from a healthy and vaccinated pig?

E. Price/Trend

14	Is there any increase in the price of pig meat this year as compared to last year?	yes	No		Increase in price per kg Rs...	
15	Daily use of pig meat by your restaurants during last year (before earthquake) and this year (after blockade and earthquake)	016	015	014	013	012
		kg	kg	kg	kg	kg
16	Purchase Price last year and this year (per kg)					

F. Difficulties or Barriers in Pig Markets

17. What are the difficulties faced by you to increase sales of pork dishes in your restaurant?

- | | | |
|--------------------|-------------------------|----------------------------|
| a. Competition | b. Short supply | c. Financial Accessibility |
| d. Change in Taste | e. Poor Quality of Meat | f. Others |

Please suggest the measures to overcome the difficulties.....

.....

G. Other Information

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iii. Stores or Shops that sell pork items to the end users

Date:	Name of the Store:	Street:
Municipality:	District:	Interviewer:
		Owner:

A. General Information:

1. When did you establish this store and start selling pork items?

Items	Individual Buyers			Hotels/Restaurants			School Hostels		
	Kg/packet.	Rate	Total	Kg/packet.	Rate	Total	Kg/packet.	Rate	Total
Sausage									
Ham									
Bacon									
Salami									
Kima									

2. Where do you buy Sausage ,Ham, Sausage, Salami and Kima?

What is your monthly purchase?

Items	Monthly Purchase			Monthly Sales		
	Kg/packets	Rate (Rs.)	Total (Rs.)	Kg/packets	Rate (Rs.)	Total (Rs.)
Sausage						
Bacon						
Packed Meat						
Ham						
Salami						
Kima						

B. Seasonality

4	Which months or seasons do you sell most?	Months.....						Seasons.....							
5	What is the daily sales during such seasons?	Fresh Meat	Sausagee	Bacon	Ham	Salami	Kima	Packed Meat	Fresh Meat	Sausagee	Bacon	Ham	Salami	Kima	Packed Meat
		Kg...				Kg...	Kg...	Kg...	Kg...				Kg...	Kg...	Kg...
6	How are the buyers during such peak seasons?	Individual Buyers ...						Hotels ...			Restaurants ...				
7	Which seasons or months do you sell least?														
8	What is the daily sales during such seasons?	Fresh Meat	Sausagee	Bacon	Ham	Salami	Kima	Packed Meat	Fresh Meat	Sausagee	Bacon	Ham	Salami	Kima	Packed Meat
		Kg...				Kg...	Kg...	Kg...	Kg...				Kg...	Kg...	Kg...

C. Quality

9. How do you ensure better quality of meat, sausage and bacon in your store?..Any specific measures?
10. How do you ensure that the meat you buy was from a healthy and vaccinated pig?

D. Sales/Price/Trend

11	11 Is there any increase in daily sales this year as compared to last year?	yes	No			Qty...	Rs...
12	Daily sales during the last 3 years	016	015	014	013	012	
		kg	kg	kg	kg	kg	
13	Sales Price during the last 3 years (per kg)						

E. Difficulties or Barriers in Pig Markets

14. What are the difficulties faced by you to increase sales of pig meat?

- a. Competition b. Short supply c. Financial Accessibility
- d. Change in Taste e. Poor Quality of Meat f. Others

g. Please suggest the measures to overcome the difficulties.....

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F. Other Information

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IV. Processors

Date: _____ Name of the Processing Industry: _____ Street: _____
Municipality: _____ District: _____ Interviewer: _____ Owner:

A. General Information:

1	When did you establish this industry to process the pig meat?	...									
2	Where do you buy pig meat to produce different items?									
3	How much do you pay for one kg of pig meat?	Rs....									
4	What do you produce after processing the pig meat?	Sausage kg per day		Bacon kg per day		Ham kg per day		Salami kg per day			
5	How much do you buy pig meat per day?	Pure meat			Fat			Intestine			
		Kg...	Rate	Total	Kg....	Rate	Total	Kg....	Rate	Total	
6	What is the tentative (estimated) average daily sales of these items?	Sausage		Bacon		Ham		Salami		Kima	
		Kg..	Rate	Kg..	Rate	Kg..	Rate	Kg..	Rate	Kg..	Rate

B. Buyers/Sellers

7. Where do you buy fresh meat for processing? Individual Slaughters or Slaughter Houses?.....Locally or from outside?

.....

8. Whom do you sell processed meat - individual buyers, hotels, stores/shops or all? (Daily)

Buyers	Daily Sales					Total Number
	Sausage.kg	Bacon	Ham	Salami	Kima	
Individual Buyers						
Restaurants						
Stores/Shops						

C. Seasonality

9	Which months or seasons do you sell most?	Months.....					Seasons.....				
10	What is the daily sales during such seasons?	Sausage	Bacon	Ham	Salami	Kima	Sausage	Bacon	Ham	Salami	Kima
		Kg...	Kg...	Kg...	kg	kg	Rs...	Rs...		Rs.	Rs...
11	Who are the buyers during such peak seasons?	Individual Buyers ...					Hotels ...			Stores/Shops	
12	Which seasons or months do you sell least?	Months.....					Seasons.....				
13	What is the daily sales during such seasons?	Sausage	Bacon	Ham	Salami	Kima	Sausage	Bacon	Ham	Salami	Kima
		Kg...	Kg...	Kg...	Kg...		Rs....		Rs....	Rs.	Rs....

D. Quality

14. How do you maintain better quality of sausage, ham, bacon, salami and kima in your industry?
15. Do you pack the meat and write the expiry and packing date?
16. How do you ensure that the meat you buy was from a healthy and vaccinated pig?
17. Is there any other specific measure you apply to ensure good quality of processed pork items from your industry?

E. Sales/Price/Trend

18	Is there any increase in daily sales this year as compared to last year?	yes	No			Qty...	Rs...
19	Daily/Annual sales during the last 5 years	016	015	014	013	012	
		kg	kg	kg	kg	kg	

20. Sales price during the last 3 years

Items	2016Rs. Per kg	2015Rs. Per kg	2014Rs. Per kg	2013Rs. Per kg	2012Rs. Per kg	Remarks
Sausage						
Bacon						
Ham						

F. Difficulties or Barriers in Pig Markets

What are the difficulties faced by you to increase sales of processed pork items?

- a. Competition
- b. Short supply
- c. Financial Accessibility
- d. Change in Taste
- e. Poor Quality of Meat
- f. Others

g. Please suggest the measures to overcome the difficulties.....

.....

G. Other Information

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V. District Livestock Service Office and PEAN District Office

1. District: _____ Office: _____
2. Respondent: Name: _____ Designation: _____
3. Major Pig Production areas in the district

.....

.....

.....

4. Pig breeds available in the district:

.....

.....

5. Number of pigs in the district

Breed	Adult		Growing	
	Male	Female	Male	Female

Exotic

Native

Crossbred

6. Number of commercial pig farms in the districts
 - a. Registered
 - b. Non registered

7. Herd size of commercial farms:
 - a. Maximum:
 - b. Minimum:
 - c. Model Size:

8. Pig population trend in the district over last five years

9. Organized slaughter places in the district:

.....

.....

10. Number of pigs slaughter daily in the district

- a. minimum
- b. maximum
- c. average:

11. The major months when demand for pork is high:

.....

12. Pig meat processing industries in the districts

.....

.....

.....

13. Major processed pig meat products

.....

14. Number of annual export and Import

	Export		Import	
	Fattened	Piglet	Fattened	Piglet
Other districts				
Other country				

15. Import and Export of processed pig meat products

Quantity Places (Import/ export)

16. What are the major hurdles in exports?

17. Major pig production constraints

vi. Animal Quarantine Office

1. District: _____ Location: _____
2. Respondents: Name: _____ Designation: _____
3. Bordering with: _____
4. Import Export Figure over last five years

Year	Export			Import		
	Live (No)	Carcass (kg)	Piglets (No)	Live (No)	Carcass (kg)	Piglets (No)
2071/72						
2070/71						
2069/70						
2068/69						
2067/68						

Export Countries:

Import countries:

5. Import and Export of Pig meat products

Year	Export			Import		
	Sausage (kg)	Ham (kg)	Other (kg)	Sausage (kg)	Ham (kg)	Other (kg)
2071/72						
2070/71						
2069/70						
2068/69						
2067/68						

Export Countries:

Import countries:

6. Major Export and import hurdles:

Vii. Pig Producer Farmers

1. District: _____ Location: _____
2. Respondent: Name: _____ Designation _____
3. Pig Farm Start year: _____
4. Pig Ownership: Private Joint Cooperative
5. Pig population in the farm at present

Breed	Adult		Growing		Piglets (not weaned)
	Male	Female	Male	Female	
Exotic					
Native					
Crossbred					

6. Pig population trend

Year	Total Pigs Number
2071/72	
2070/71	
2069/70	
2068/69	
2067/68	

7. Breeding System
8. Age at first farrowing: _____
9. Average live piglets born at farrowing

Exotic: _____
Indigenous _____
10. Piglets weaned

Exotic _____
Indigenous _____
11. Farrowing Interval (Months): _____
12. Average annual piglet produced (Weaned) _____
13. Weaning age _____
14. Annual average piglet sold _____
15. Price per piglet: _____

16. Piglets sold to:

Farmers of same district

Other districts (list)

other country (List)

17. Piglet sold for: Fattening

Breeding

Both

18. Age at which fattened pigs are sold:

19. Average weight at slaughter/ selling

20. Annual Fattened Pig Sold:

By slaughtering yourself (Number): By selling to butcher (Number):

Export to Kathmandu or other city centers (List the place also): Export to other country (number):

21. When highest number of fattened pigs are sold Months

Average number during these months

22. Pricing system: Gross estimate

Age

Weight

23. Current Price: Per kg:

Per adult pig

24. Annual Average culled pig sold:

25. Price of culled pig: Male

Female

26. Selling Trends

Year	Piglets	Fattened
2071/72		
2070/71		
2069/70		
2068/69		
2067/68		

Reasons for increasing or decreasing trend:

27. Demand for piglets and fattened pigs are:

Increasing

Decreasing

Reasons:

28. Preferences from fattened pig buyers

Local Exotic

Black White/other

Fatty Lean

Others??

29. What are the major production hurdles:

30. What are the major marketing hurdles?

Annex 6.3 Requirements for export to China

1. Regulatory Framework

The Food Safety Law of the People's Republic of China was adopted on June 1 2009 after a series of food scandals that undermined consumer confidence in the food supply chain. The law resembles existing systems in Western countries by setting up regulatory bodies responsible for elaborating and implementing national food safety standards based on scientific criteria and recommendations issued by international organisms such as Codex Alimentarius, the Food and Agriculture Organization of the United Nations (FAO) and the World Trade Organization (WTO). However, law enforcement is facing severe challenges due to Chinese food market inefficiencies: scattered and small production units without quality and safety priorities, lack of consumer awareness of food safety concerns and overlapping competencies between central and provincial governments are some of the burdens reducing its effectiveness and posing a permanent threat to an already fragile food security system.

1.1 Food Safety

The Food Safety Law defines a new approach to food safety in China by providing a legal framework for production and trade of food products. Any business dealing with the food industry and wanting to export meat products to China needs to meet the provisions of the Chinese Food Safety Law. The target of the Food Safety Law is to implement surveillance and a tracking system of food products from its origin to its consumption.

1.2 Meat Import

The Food Safety Law states in its articles 62-68 the principles for developing regulations on food imports.

The “Administrative Measures for Inspection and Quarantine of Inbound and Outbound Meat Products”, effective from June 1 2011, introduce some of the key points of the meat import procedure.

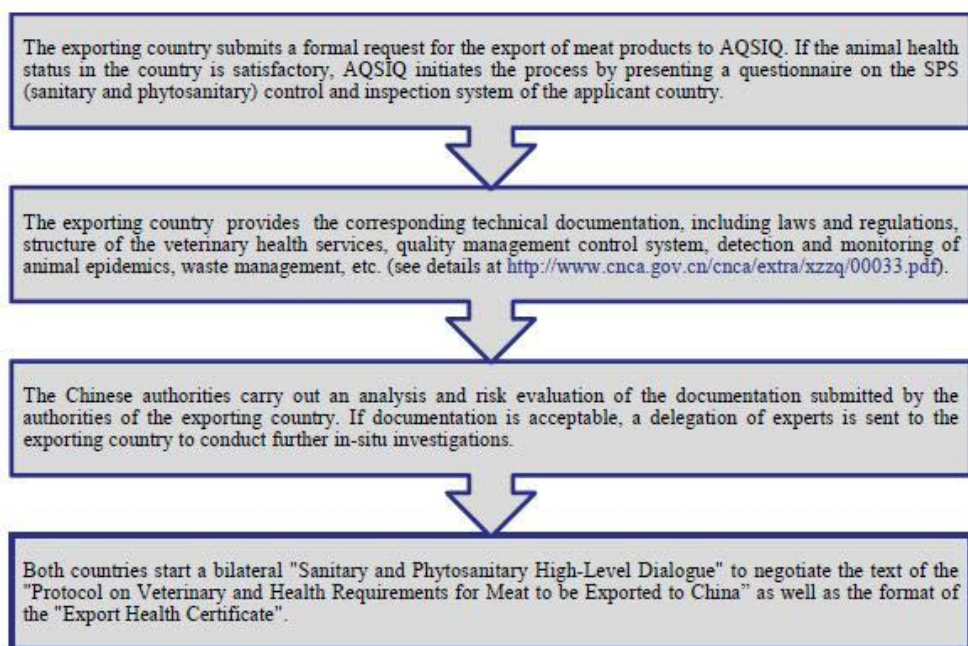
2. Who is allowed to export meat products to China?

Objective	Instrument
Country/product eligibility	Protocols
Company eligibility	Establishment Registration

2.1 Protocol

Protocols are bilateral agreements between the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ, Section 5 for more information) of China and corresponding food safety departments in the exporting countries that set up veterinary and health requirements for meat products to be exported to China. Protocols transfer the responsibility for inspection and quarantine on the meat products to be exported to the authorities in the exporting country. An export health certificate ensures compliance with these requirements.

Protocol Negotiation Steps



Protocols have a standard content. Below a summary of the most common provisions:

- Exporting authorities provide AQSIQ with the management regulations and procedures affecting processing plants and the control system related to diseases.
- Exporting authorities officially confirm that the country is an epizootic-free area.
- Exporting authorities ensure traceability (all meat products need to originate in the exporting country) and protection against specified diseases.
- Details on the registration of exporting facilities by the Certification and Accreditation Administration of the People's Republic of China (CNCA).
- Detailed functions to be carried out by official veterinarians in the exporting country (ante-mortem and post-mortem quarantine and inspection and certification).
- Requirement that slaughtering and processing plants can only manipulate meat products that comply with requirements. There should be exclusive storage areas within cold store houses for products to be exported to China.
- Packaging conditions, labeling and marks.
- Transport, storage and manipulation conditions (storage temperature).
- Details on the Export Health Certificate accompanying each container. The exporting side should provide AQSIQ with signatures of veterinarians authorized to issue health certificates.
- AQSIQ has to be notified of any infectious or contagious episode and exports will be stopped immediately. Authorities in the exporting country have to work closely with AQSIQ in order to resume exports of the affected products.

2.1 How Can I Obtain an Approval for my Company?

As a way to ensure a desired level of food safety and in addition to inspection and quarantine procedures for import clearance, establishment approval is a prerequisite to identify foreign firms eligible to sell meat products to China (more in section 3.2.).

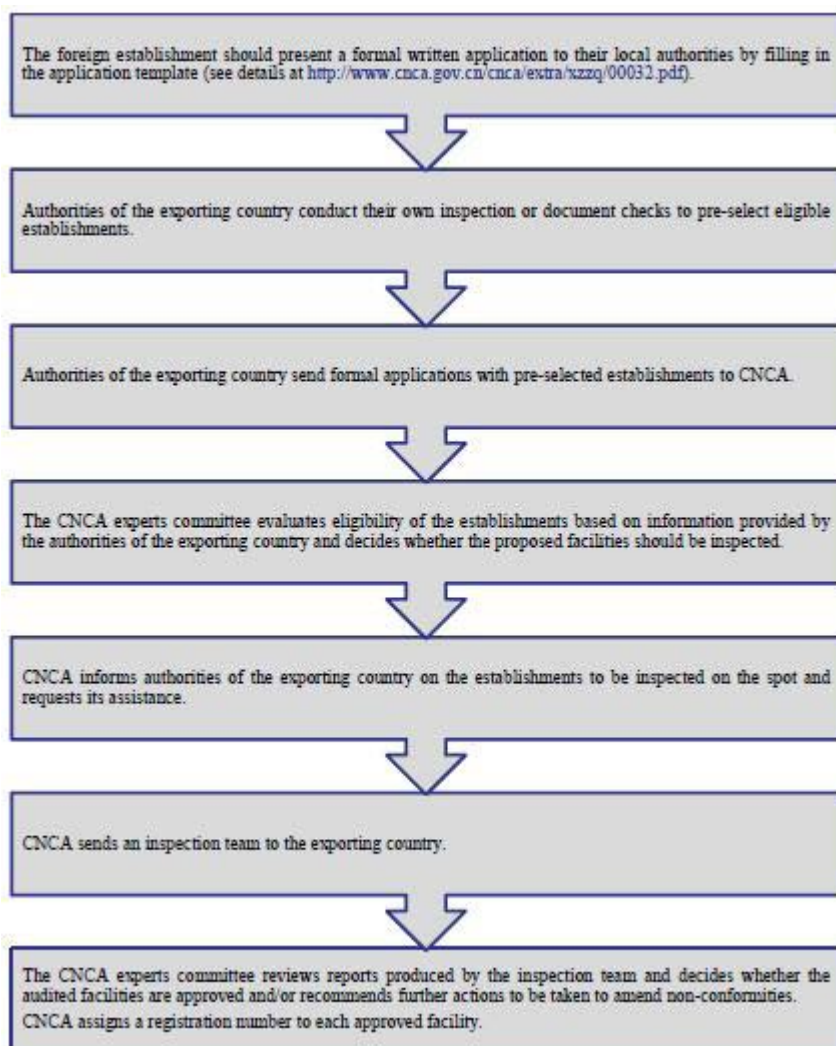
The “Regulation on Registration for Foreign Establishments Intended to Export Foods to China” (Order No16 2002) gives the CNCA the authority to register and supervise foreign establishments wishing to export to China.

Once the country of origin has signed a protocol with China for specific meat products, the steps for a firm to be registered by CNCA are as follows:

General requirements

- The veterinary system, plant protection system and public health control system of the country of origin has passed the assessment conducted by CNCA.
- The country/region where establishment facilities are located should be an epizootic-free area.
- The foreign establishment should be approved and under effective supervision of local authorities and comply with Chinese safety laws and standards (see section 6).

Registration Process



Each establishment in the supply chain must be registered and must be included in the current list of approved establishments maintained by the Chinese veterinary authorities (slaughterhouses, cutting plants, cold stores, meat processing plants).

As a general rule, the establishment's approval is valid for four years, but Chinese authorities show flexibility for countries and establishments that have implemented a consistent and steady SPS management system.

Further inspections will be required when an already approved establishment wants to be registered for new products included in the same protocol or an additional memorandum (e.g. trotters, stomachs and casings for human consumption)

3. Import Procedures

3.1. What are the Requirements for Local Meat Importers in China?

Business Registration: A document certifying that a company has been registered according to the Chinese legal provisions and approved to start operations. Administered by the Registration Bureau of the State Administration for Industry and Commerce (SAIC, <http://www.saic.gov.cn/english/>).

- The processing time is 15-30 working days.
- The processing fee varies depending on the total sum of registered capital.

Import and Export Business License: A document certifying that a company qualifies and has been registered as an import/export business. Administered by the Ministry of Commerce of the P.R. of China (MOFCOM, <http://www.ft.cq.cn/Uploadfile/200804071525401471.doc>).

- The processing time ranges from 45 to 60 working days.
- There is no processing fee.

Customs Registration: A document certifying that importers and exporters have been registered with the General Administration of Customs of the P.R. of China. Administered by the General Administration of Customs of the P.R. of China (GAC, also referred to as China Customs, <http://www.customs.gov.cn/Default.aspx?Tabid=2556>).

- The processing time is three working days.
- There is no processing fee.

Registration with the Filing Management System: Applies to consignees of foodstuffs as well as exporters /agents of imported food. Once exporters of foodstuffs are registered, they are required to provide and update information on their current Chinese trading partners for the purpose of traceability of each consignment (<http://ire.eciq.cn>).

- The processing time is five working days.
- There is no processing fee.

The list of registered meat importers can be checked at <http://www.bjblx.cn/html/2015.html>.

Automatic Import License: A document providing statistical information on the goods to be imported to the Ministry of Commerce (MOFCOM). Only required for products included in the 2013 goods catalogue, accessible at <http://www.mofcom.gov.cn/aarticle/b/e/201212/20121208496384.html>.

- The processing time is approximately ten days.
- The processing fee is CNY 20.
- The license is valid for a single importation within six months from the date of issue.

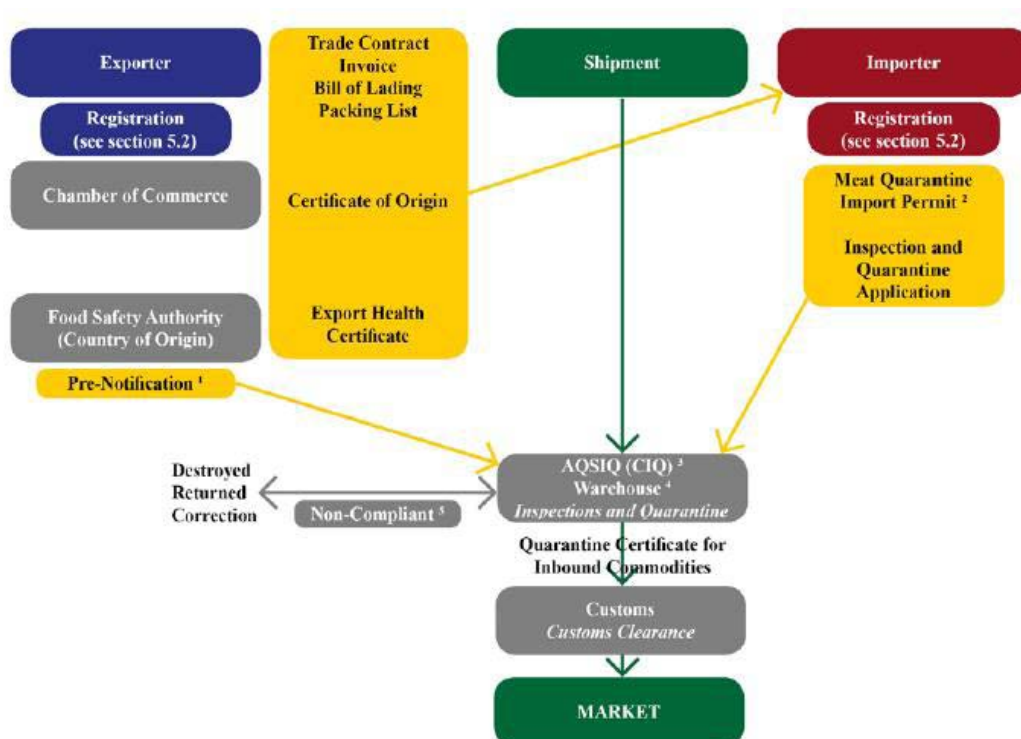
3.2 What are the Requirements for Foreign Meat Exporters in China?

Establishment Approval: Meat producers must be registered with the AQSIQ on an intergovernmental level. Registration is administered by CNCA (See section 4.2., <http://www.cnca.gov.cn/rjwzcjgb/bmgz/images/20061016/470.pdf>).

Registration with the Filing Management System: A document confirming that foreign exporters of foodstuffs have been registered with AQSIQ. To be submitted electronically via the Filing Management System for Exporters/Agents and Consignee of Imported Food at <http://ire.eciq.cn>.

- The processing time is five working days.
- There is no processing fee.
- If the exporter is already registered, there is no need to register for new exports.
- The list of registered meat exporters can be checked at <http://www.bjblx.cn/html/1995.html>.

Meat Products Import Procedure Scheme



Notes

(1) **Pre-Notification:** AQSIQ requires advanced electronic notification of all scheduled meat and poultry shipments. Pre-notification, including health certificate details, shall be electronically transmitted from the food authority of the exporting country to AQSIQ, which will forward it to the local CIQ office at the port signed with China. In some countries (e.g. Belgium, Denmark) the exporter is required to fill in a specific form and transmit it by e-mail to his food safety authority in order to be forwarded to AQSIQ. In other countries (Spain) the pre-notification is generated automatically during the process of issuing the health certificate and doesn't demand any further formality from the exporting firm.

(2) **Meat Quarantine Import Permit:** The importer will have to apply for an import license (MQIP Meat Quarantine Import Permit) covering the contract amount (volume of the shipment). It can cover multiple containers or shipments and is valid for six months. The processing time is 30 working days. Only one outstanding permit is allowed with a particular foreign firm. The importer should utilize at least 75% of the declared value of the MQIP before applying for a new permit.

(3) **AQSIQ (CIQ):** AQSIQ has set up 35 Entry-Exit Inspection and Quarantine Bureaus (CIQ) in China's 31 provinces, with nearly 300 branches and more than 200 local offices across the country and a staff of 30.000 employees.

The list of 44 AQSIQ (CIQ) designated ports for meat and poultry imports can be found at http://jckspaqj.aqsiq.gov.cn/zwgk/dzwyxspjyxk/spxz/201106/t20110607_186590.htm (click [here](#) for English version).

(4) **Warehouse:** A list of cold storage warehouses authorized by AQSIQ is available at http://jckspaqj.aqsiq.gov.cn/zwgk/dzwyxspjyxk/spxz/201106/t20110607_186593.htm <http://www.bjblx.cn/html/2035.html>.

(5) **Non-Compliant:** If inspection and quarantine results are compliant, the local CIQ office will deliver an

"Inspection and Quarantine Certificate for Inbound Commodities" granting the approval for manufacture, processing, sale and use.

If results are non-compliant, the CIQ office will issue a notice of inspection and quarantine actions requiring the products to be returned or destroyed. For minor non-compliances (not affecting personal safety, health or environmental protection) technical treatment is allowed under supervision of the local office to remedy the situation before a second inspection.

The exporter must ensure all documents indicated above are received by his importer three to five days prior to arrival of the shipment at the port of entry in order to have enough time to make the necessary arrangements for inspection and quarantine as well as customs clearance.

The importer needs to apply for inspection of inbound goods at the local CIQ office of the port of entry by submitting all relevant documents (MQIP, Health Certificate and commercial documents).

Depending on the HS code or in episodic disease situations there might be other documents needed to complete the import procedures.

3.3. Timeframes and Costs of Import Procedures after Arrival at Chinese Port (Example Qingdao)

Notes:

- **BL** = Bill of lading
- **RF** = Refrigerated (reefer) containers
- **CI** = Cost, Insurance and Freight, the price of the goods including insurance and freight
- Tariffs applying to any particular HS code can be checked at: http://madb.europa.eu/madb/datasetPreviewFormATpubli.htm?datacat_id=AT&from=publi
- Cost and timeframes might vary depending on the port of entry, the kind of product imported, if the company imported its products via this port before or if it is the first time, among other reasons.

Before shipment arrival: If the import agent receives complete documentation, he will begin inspection procedures to shorten the clearance time. This usually takes 1-2 days.

When cargo arrives at Qingdao port, clearance process steps are as follows:

After the shipment arrival, the containers will be stored in Qingdao port yard.

1. Commodity inspection RMB200/BL*

The import agent delivers the container to the warehouse authorised by "Qingdao Entry - Exit Inspection and Quarantine Bureau".

2. Quarantine inspection fee 0.8 % of total value of goods

The import agent will go to the shipping company to obtain the D/O (delivery order), after paying the necessary fees and charges (this usually takes about 1 day):

3. D/O (delivery order) RMB300-350/BL

4. THC (terminal handling charge) RMB1280/40RF*

5. Documentation fee RMB100-400/BL

6. Handling charge RMB200-400/40RF

7. Mechanical fee RMB100-200/40RF

The import agent submits D/O and other documents to Customs to begin customs clearance (this usually takes about 3-5 days):

8. Customs declaration RMB200/BL

9. Import tariffs %* on the CIF* price of the goods

The import agent pays port charges to Qingdao port, and handles delivery procedures (this usually takes about 1 day):

10. Port charge RMB500/40RF + storage charges

11. Refrigeration charge RMB600/40RF (within 5 days) + RMB100/40RF/per day (if more than 5 days)

Empty container will return to yard specified by the shipping company (takes about 2 days):

12. Delivery at cost

13. Inspection agency fees RMB300/BL

14. Handling charge RMB200/BL

15. Storage charges, demurrage charges, container maintenance fee, cleaning fee at cost

Import agent fees: approximately 1.5% of cargo value, minimum USD 250

Finally, goods are released to the importer

4. Laws and Standards

Food Safety Law of the People's Republic of China. (June 1, 2009) http://www.gov.cn/jlfg/2009-02/28/content_1246367.htm (Chinese) <http://www.fas.usda.gov/gainfiles/200903/146327461.pdf> (English translation by the United States Department of Agriculture)

4.1. Current Entry-Exit Laws and Regulations on Inspection and Quarantine

- The Import and Export Commodity Inspection Law of the People's Republic of China and its implementing regulations (February 21 1989), amended on April 28 2002
- Law of the People's Republic of China on the Entry and Exit of Animal and Plant Quarantine and its Implementing Regulations (October 30 1991)
- Law of the People's Republic of China on the Entry and Exit Health Quarantine and its Implementing Regulations (December 2 1991), amended on December 29 2007
- Food Hygiene Law of the People's Republic of China (February 8 2009)
- Regulation on Inspection and Quarantine of Entry-Exit Meat Products (June 1 2011) <http://www.aqsiqccc.com/en/news/news-3.html>
- Regulation on Registration for Foreign Establishments Intended to Export Foods to China, Order NO.16 (AQSIQ) <http://www.cnca.gov.cn/rjwzcjgb/bmgz/images/20061016/470.pdf>

4.2. Standards

The following are among the most relevant standards foreign establishments must comply with in order to be eligible for export to China. More information can be found on www.chinafoodsafety.net.

- GB 2707-2005: Hygienic Standard for Fresh (Frozen) Meat of Livestock
- GB 16869-2005: Poultry National Standard
- GB 9959-2-2001: Fresh and Frozen Pork Muscle Cuts Standard
- GB 16869-2000: Fresh and Frozen Poultry Product Standard
- GB/T 17238-2008: Fresh and Frozen Beef Cuts Standard
- GB/T 20094-2006: Hygienic Practice for Meat Processing Establishments

5. Resources

Chinese Administration

General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ)
www.aqsiq.gov.cn

AQSIQ is a ministerial-level department under the State Council of the PRC that is in charge of supervising national quality, metrology, entry-exit commodity inspection, entry-exit health quarantine, entry-exit animal and plant quarantine, import-export food safety, certification and accreditation, standardization, as well as administrative law enforcement. AQSIQ directly administers the CNCA, the SAC and local CIQs with 35 entry-exit inspection and quarantine bureaus and 31 provincial level quality and technical supervision bureaus.

China Inspection and Quarantine Services (CIQ)

<http://en.ciqcid.com>

The China Inspection and Quarantine Services are responsible for the administration of entry-exit inspection and quarantine at ports, including personnel, animals and plants and commodities. Its basic functions are

to protect human health and safety, animal or plant life and health, the environment, prevent fraud and safeguard national security. Specific tasks include: the prevention of the spread of epidemic diseases, harmful organisms, toxic and hazardous substances, and defective import and export commodities.

Links to some of the most active CIQ Entry-Exit Inspection and Quarantine Bureaus:

- Shanghai Entry-Exit Inspection and Quarantine Bureau www.shciq.gov.cn/english
- Guangdong Entry-Exit Inspection and Quarantine Bureau www.gdciq.gov.cn/Eng/index.aspx
- Tianjin Entry-Exit Inspection and Quarantine Bureau www.tjciq.gov.cn/tjjyji/tblm/english/200906/t20090624_20821.html
- Beijing Entry-Exit Inspection and Quarantine Bureau www.bjciq.gov.cn/ywb/Channel_1321.htm?ChannelID=1321
- Zhejiang Entry-Exit Inspection and Quarantine Bureau www.ziq.gov.cn:8081/gate/big5/www.ziq.gov.cn/portal/English.jsp?catalog_id=20080903000002
- Shenzhen Entry-Exit Inspection and Quarantine Bureau www.szciq.gov.cn/
- Liaoning Entry-Exit Inspection and Quarantine Bureau www.lnciq.gov.cn/en/
- Shandong Entry-Exit Inspection and Quarantine Bureau www.sdcic.gov.cn/english/

The Certification and Accreditation Administration of the People's Republic of China (CNCA)

www.cnca.gov.cn/cnca/

The Certification and Accreditation Administration of the People's Republic of China administers the compulsory product certification system and the Chinese compulsory CCC certifications. The certification categories include certification of animal feed, good agricultural practices, safe agricultural products, organic products, food quality, and the management system of risk analysis and critical control points (HACCP).

The Standardization Administration of China (SAC)

www.sac.gov.cn/

The Standardization Administration of China unifies control, supervision and coordination of the quality standards of products in China. It is responsible for organizing activities for the Chinese National Committee and the ISO, approving and organizing the implementation of international cooperation and for exchanging standardization projects.

The Ministry of Commerce of the People's Republic of China (MOFCOM)

<http://english.mofcom.gov.cn/>

The Ministry of Commerce of the People's Republic of China is in charge of formulating strategies, guidelines and policies for the development of domestic and foreign trade and international economic cooperation; drafting laws and regulations governing domestic and foreign trade and harmonizing domestic legislation on trade as well as bringing Chinese economic and trade laws into conformity with multilateral and bilateral treaties and agreements; working out measures for the regulation of import and export commodities and processing trade, and compiling catalogues of import and export commodities and technologies.

The Ministry of Health of the People's Republic of China (MOH)

www.moh.gov.cn

The major mandates of the Ministry of Health of the People's Republic of China are: to draft health laws, regulations and policies; to propose health development programs and to formulate technical protocols, health standards and to supervise their enforcement.

The State Food and Drug Administration (SFDA)

www.sfda.gov.cn/WS01/CL0001/

The State Food and Drug Administration was founded on the basis of the State Drug Administration. The State Food and Drug Administration is directly under the State Council of the People's Republic of China and is in charge of the comprehensive supervision on the safety management of food, health food and cosmetics as well as drug regulation in mainland China. Its main responsibilities are: to organize relevant authorities to draft laws and regulations on the safety management of food, health food and cosmetics; to exercise comprehensive supervision on the safety management of food, health food and cosmetics in accordance with laws; to organize and carry out investigations and impose punishment on serious safety accidents in food, health food and cosmetics.

The State Administration for Industry and Commerce of the People's Republic of China (SAIC)

www.saic.gov.cn/english/

The State Administration for Industry and Commerce of the People's Republic of China is responsible for food control in domestic commerce and for protecting the rights and interests of consumers in the Chinese market.

Annex 6.4 Requirements for Export to Bhutan

Royal Government of Bhutan
Ministry of Agriculture and Forests
Bhutan Agriculture and Food Regulatory Authority (BAFRA)

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Thimphu: Bhutan, Post Box No. 1071; Tel. PABX 975-2-327031/325790/325993; fax No. 975-2-327032/335540

PROTOCOL FOR IMPORT OF PROCESSED LIVESTOCK PRODUCTS INTO BHUTAN

Any individual, agency or company wishing to import breeding animals into Bhutan should apply for import permit to the Bhutan Agriculture and Food Regulatory Authority (BAFRA), Ministry of Agriculture and Forests. The application for import permit should reach the office of BAFRA at least 4 weeks before the scheduled date of entry of such animals into Bhutan. The application for import permit must provide full details of the consignment as requested in the application form (Application for import of processed livestock products). The importer must meet the following conditions at the time of importation.

1. The livestock products are accompanied by this import permit.
2. Documentation (in original) showing details of purchase is presented.
3. The consignment is immediately declared and presented for inspection on entry into Bhutan.
4. The fish/crustaceans are dead.
5. The fish/crustaceans are fit for human consumption.
6. All information and documentation requested by the BAFRA Officials of the Ministry of Agriculture and Forests as to their ownership and content is provided.
7. These requirements will be amended as and when deemed necessary depending on the risk associated with the animals and the disease status of the exporting country.

PROTOCOL FOR IMPORTATION OF LIVESTOCK FOR PROCESSING

Any individual, agency or company wishing to import livestock for processing into Bhutan should apply for import permit to the Bhutan Agriculture and Food Regulatory Authority (BAFRA), Ministry of Agriculture and Forests. The application for import permit should reach the office of BAFRA at least 4 weeks before the scheduled date of arrival of such animals into Bhutan. The application for import permit must provide full details of the consignment as requested in the application form (Application for import of Livestock for Processing). The importer must meet the following conditions at the time of importation.

1. All Animals are permanently identified by the brand or tamper-proof ear tag.
2. The animal (s) is/are accompanied by an approved certificate completed by the Government Veterinarian In-charge of the origin of the animal (s) attesting that:
 - a. All animals have been clinically examined within three days of movement and were found to be in a state of good health, free from obvious signs of infectious and contagious diseases and fit for slaughter.
 - b. The farm (s) of origin, the area within the radius of ten kilometers there from, is/are free from Rinderpest, Foot and Mouth Disease, Contagious Bovine Pleuro Pneumonia, Haemorrhagic Septicaemia, Black Quarter, Peste des Petits Ruminants, Blue Tongue, Swine Fever, and have been so free during the three months prior to the date of certification.
 - c. The certificate shall also provide result of TB and Brucellosis test conducted within a month of shipment.

3. During their movement to the Bhutanese border the animals do not pass through an area in which there is active outbreak of Rinderpest, Foot and Mouth Disease, Peste des Petits Ruminants, Blue Tongue, Swine Fever and other infectious diseases.
4. The Law of the exporting country permits export of such animals originating from that country.
5. Upon entry of such animals into Bhutan, they must be immediately presented to the BAFRA Officials for inspection.
6. The animals must be processed within one week after arrival at the place of destination.
7. These requirements will be amended as and when deemed necessary depending on the risk associated with the animals and the disease status of the exporting country.

PROTOCOL FOR IMPORT OF FRESH LIVESTOCK PRODUCTS (BEEF, PORK, MUTTON, MILK, FISH OR CRUSTACEANS) INTO BHUTAN

Any individual, agency or company wishing to import Fresh Livestock Products into Bhutan should apply for import permit to the Bhutan Agriculture and Food Regulatory Authority (BAFRA), Ministry of Agriculture and Forests. The application for import permit should reach the office of BAFRA at least 4 weeks before the scheduled date of entry of such products into Bhutan. The application for import permit must provide full details of the consignment as requested in the application form (1. Application for import of Fresh Livestock Products commercial use. 2. Application for import of Fresh Livestock Products personal use). The importer must meet the following conditions at the time of importation.

1. The beef / pork / mutton / milk / fish are accompanied by an approved certificate completed by the Government Veterinarian attesting that:
 - a. The area of origin of animals / fish meant for slaughter is free from Rinderpest, Foot and Mouth Disease, Anthrax, Haemorrhagic Septicaemia, Black Quarter, Contagious Bovine Pleuro Pneumonia, Peste des Petits Ruminants, Sheep Pox, Swine Fever and Transmissible Water Borne Diseases particularly those of Virus origin.
 - b. The beef / pork / mutton / fish have been processed in a hygienically operated government approved slaughter house.
 - c. The origin / source of milk are free from diseases like Bovine Tuberculosis, Brucellosis etc.
2. The beef / pork / mutton / milk / fish are accompanied with inspection certificate certifying that the beef / pork / mutton / milk / fish is fit for human consumption.
3. During the transportation of beef / pork / mutton / milk into the country, the consignment doesn't pass through an area where there is active outbreak of diseases mentioned in condition no.1 (a)
4. Upon entry of such animals into Bhutan, they must be immediately presented to the BAFRA Officials for inspection
5. All information and documentation requested by the BAFRA Officials of the Ministry of Agriculture and Forests as to their ownership and content is provided.
6. These requirements will be amended as and when deemed necessary depending on the risk associated with the animals and the disease status of the exporting country.

About Samarth-NMDP

Samarth-NMDP is a five year UK aid-funded program that aims to reduce poverty in Nepal by increasing the income of smallholder farmers and small-scale entrepreneurs. The programme follows a market systems development approach, addressing underlying causes in the performance of the market systems, to bring about more competitive and sustainable markets that work better for the poor.

Samarth-NMDP is managed in partnership with the Government of Nepal by a consortium comprising Adam Smith International, The Springfield Centre and Swisscontact. For more information on the programme, please visit www.samarth-nepal.com.

