



Creation of a meat value chain in Tajikistan

Feasibility Study

June 2010



Important notice

This document has been prepared by the Cercle Kondratieff for the exclusive use of EBRD/BAS Programme and SC Barakati Chorvodor. It is supplied for the purpose of information only. Information in this document is not necessarily complete or all-inclusive. In particular, none of the information in this document constitutes a profit forecast or a prediction. Such information is included for illustrative purposes only.

The information contained in this document is strictly private and confidential, and accordingly its content cannot be published, reproduced, copied or disclosed to any third party. Cercle Kondratieff does not undertake any obligation to provide recipients with access to any additional information or to update or correct any inaccuracies, which may become apparent in this document or any other information made available in connection with this document.

All enquiries must be addressed to Cercle Kondratieff:

Mr Christophe Cordonnier

Tel: +992 37 227 10 77

e-mail: cordonnier@int.frankfurt-school.de

Mr Gilles Walter

Tel : /7 926 711 90 72

e-mail : g.walter@camden-partners.net

SUMMARY

1	Meat industry in Tajikistan: key driving factors	6
1.1	Tajikistan: basic facts	6
1.2	The meat sector in Tajikistan.....	7
1.3	Demand for quality beef meat	8
2	The project: creating a meat value chain from breeders to final consumers .	10
2.1	The key issue: creating efficient distribution channel for higher value-added in the meat chain.....	10
2.2	Business rationale: “from the field to the plate”	11
2.3	The supply side: a very good basis in the existing farms	12
2.4	The demand side: existence of a potential market for quality beef	14
2.5	Distribution channels.....	17
2.6	Technological gap.....	17
2.7	SWOT analysis	19
3	Technical parameters of the project	26
3.1	Butchery	26
3.2	Slaughterhouse	31
4	Conclusion and comments	36
	List of appendix	36

Foreword

This report summarizes the conclusion of a mission conducted in Tajikistan by a group of experts mandated by Cercle Kondratieff on behalf of EBRD-BAS programme in June 7-11, 2010.

The main goal of this mission was to analyze the existing situation of the beef meat sector in Tajikistan and to explore the possibility of creating a quality beef meat industry based on transfer of French knowledge and technology.

The sponsor of the project is SC Barakati Chorvodor, the owner of three cattle farms in the region of Dushanbe. These farms mainly gather milk cows. While milk is sold to the milk factory in Dushanbe, meat is not used in a satisfactory way due to the absence of proper distribution channels. Cattle is mainly sold to middlemen who resell it to local markets or to meat processing factory mainly for the production of sausages.

The sponsor of the project wishes to create more efficient processing and distribution channels in order to increase value added in the meat chain. Such meat value chains have been largely developed in France with a high level of efficiency.

Experts gathered by Cercle Kondratieff combine proven experience in all the segments of the business: farming, conception and building of slaughterhouse, organization of the whole meat value chain, butchery, optimal utilization of all sub-products, financial and project management.

The goal of the mission was to study the feasibility of the creation of a meat value chain on the model of the ones existing in France.

Overall, the creation of a state-of-the-art meat value chain depends on the following factors:

- **Supply:** availability of high-quality meat in sufficient quantity;
- **Respect of standards of quality:** as beef meat is usually consumed fresh and rare cooked, the most severe sanitary norms are imposed at every level of the process;
- **Demand:** presence of sufficient demand for elite beef meat;
- **Processing channels:** organization of existing processing/cutting facilities;
- **Distribution channels:** organization of the commercialization of meat products.

1 Meat industry in Tajikistan: key driving factors

3.4.41.1 Tajikistan: basic facts

Mise en forme : Puces et numéros

Tajikistan is a newly independent country formed after the dissolution of the Soviet Union. Geographically, it is located in Central Asia. It shares borders with the Kirghiz Republic at the North, Uzbekistan at the West, China at the East and Afghanistan at the South.

Map 1 – Geographical map of Tajikistan



Tajikistan is commonly considered as one of the poorest Republics of the CIS and one of the poorest countries in the World according to standard international benchmarks. In

2009, its GDP was estimated at USD13.8 billion (purchasing power parity calculation-137th rank in the World) and USD4.7 billion (official exchange rate calculation). Tajikistan appeared at the 189th rank in terms of GDP per capita (USD1,800) and at the 127th rank in the rating of the United Nations Development Program in terms of human development index (0.688). This significant difference between quantitative measure (GDP per capita) and qualitative one (HDI) shows however that, despite low revenues, the **situation of the population is somewhat wealthier than in a lot of countries showing higher GDP per capita.**

During Soviet time, the region did not benefit from particular industrial investment apart from a large aluminium plant and hydroelectric facilities. Following the dismantlement of the Soviet Union, a civil war broke out in Tajikistan which lasted from 1992 to 1997. This conflict severely damaged the weak existing economic infrastructure, leading to the closure of most existing industrial companies and a sharp decline of agricultural production.

However, thanks to increasing political stabilization, **economy registered a stunning recovery in the 2000s.** Annual GDP increased by almost 9 per cent average in years 2004-2008 before slowing to 3.4 per cent in 2009 following the consequences of the global financial and economic crisis.

Despite this real improvement, **Tajikistan's economy remains fragile.** 60 per cent of the population is estimated to live below poverty line. Transfers brought in by migrant workers, principally from Russia, represent a stunning 47 per cent of GDP, which is the absolute World record.

Tajikistan is not a rich agricultural country *per se*. Less than 7 per cent of total area is considered to be arable land. However, agriculture is a key sector. It represents 19 per cent of the GDP and almost 50 per cent of employment. While cotton remains by far the most important crop, animal breeding plays a major role with cattle, sheep and goats representing the major part of the livestock. Improving the situation of the livestock and organizing high value-added chains in the meat processing sector is therefore a crucial development goal for the whole economy.

1.2 The meat sector in Tajikistan

Despite already being an important sector in relative terms in Tajikistan, animal breeding still shows a considerable potential for development.

Three elements can illustrate this situation:

A still low level of meat consumption. According to the Food and Agricultural Organization (FAO), meat consumption per capita in Tajikistan reached 9 kilograms in 2002. This is to be compared to a World average of 38 kilograms, 25 kilograms in Asia or 51 kilograms, for example, in Russia. Meat consumption shall logically increase with the growth of purchasing power of the population;

Meat consumption is not satisfied by domestic production. According to the United Nations Conference for Trade and Development (UNCTAD), imports of meat and edible meat offal amounted to USD30.9 million in 2008, including USD26.4 million of poultry meat and USD4.2 million of bovine meat. This amount might not appear very large. It shows however that Tajikistan is not self-sufficient for meat consumption despite the relative importance of this sector in terms of economic size and employment;

A low organized meat industry. Poor statistics in terms of meat consumption and production are reflecting significant structural problems. Farming is still at a low technological level despite the existence of a few very good outlets. Most of the livestock is bred by individual farmers who own a small number of animals. Moreover, there are no modern slaughtering outlets and distribution channels are largely unorganized. Most of the meat is sold to middlemen who then resell it to local markets or to meat processing factories. Value adding is almost absent in the meat industry and noble parts of the beef are not promoted and consumed separately. Last but not least, the absence of traceability and good sanitary conditions hampers the creation of a sustainable market for quality beef meat;

Beef meat shall become increasingly popular: Tajikistan is a Muslim country and pork meat, while not completely prohibited, is almost absent. While chicken still represents the largest sector due to lower prices than other meats, beef and sheep are culturally the two most popular meats in the country and the development of the sector can therefore lay on strong cultural and consumption traditions.

1.3 Demand for quality beef meat

Creating a meat value chain of high quality in Tajikistan does not seem at first glance to correspond to the level of development of the economy. However, demand for such high quality product does not depend primarily on the overall level of wealth. Supply capacity is anyway constrained at the time being and the absorption capacity of the market does therefore not stand at a very high level.

Indeed, World experience and development of the meat industry in other emerging countries show that demand for quality beef meat will arise primarily from two sources:

-
- **Corporate buyers:** hotels, restaurants, foreign organizations (embassies, foreign corporate),
 - **Private buyers:** wealthy customers, expatriate workers, tourists.

As a consequence, the feasibility study must concentrate on microeconomic factors rather than on global ones. There is no need at this stage to gather a large part of the population to build a successful elite butchery business. Satisfying the existing potential clientele is all the more possible as there is no competition in this market niche. Even imports do not represent a real competition due to still considerable transport problems.

2 The project: creating a meat value chain from breeders to final consumers

2.1 The key issue: creating higher value-added

Despite being one of the “oldest” and most “traditional” sectors of the economy, meat producing, processing and selling has registered significant structural change in the most advanced countries. Like other industries, it has become **more and more sophisticated, concentrated and profit-oriented**.

In France, concentration is particularly high in slaughtering due to significant economies of scale. The rapid development of big retail chains (supermarkets and hypermarkets) has also led to a concentration of distribution channels. Large slaughtering units have been created to supply a high number of stores in a large geographic area simultaneously.

This evolution has also been supported by the development of the legislative framework surrounding food products, in general, and meat production, in particular. Normalization and standardization have become more severe and small non-organized units could not survive in this new business environment without significant investment and sizeable economies of scale.

Last but not least, consumers' taste has also registered some evolution with a higher demand for quality products, with clear and understandable origin (traceability), attractive presentation and perfect taste.

This demand for quality has led to **the rebirth of more traditional slaughterhouses** of smaller size serving a limited geographic area.

These smaller slaughterhouses offer the following advantage:

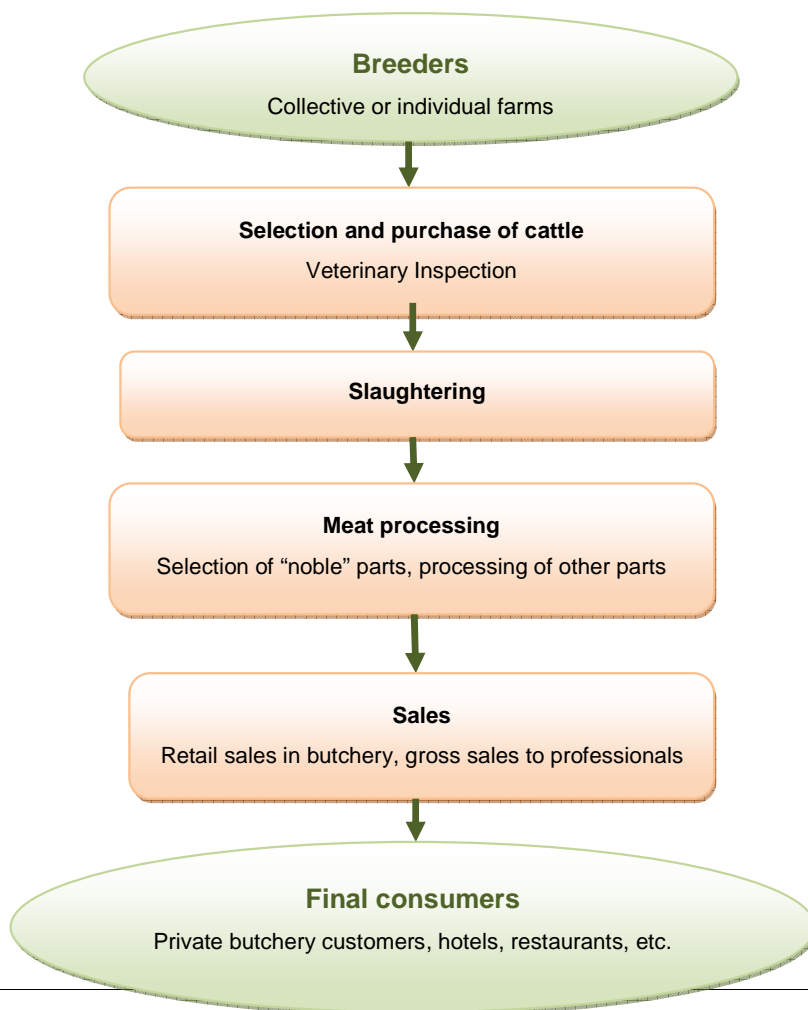
- Shortest link between breeders and consumers;
- Easier traceability;
- Avoidance of intermediaries, especially distributors, allows higher profitability for every actor of the chain (breeder, slaughterer, butcher);
- Close integration in a specific geographic area fosters local development;
- Reasonable investment means this model can be put in place relatively easily;
- Consumers' satisfaction increases as the origin of the product is better known.

2.2 Business rationale: “from the field to the plate”

The above-mentioned observations lead to consider the creation of a real quality chain in Tajikistan based on the following principles:

1. Integration of all the tasks from farming to selling meat: This principle is described in the following table. The meat value chain goes from people (breeders and farmers) to other people (final consumers) after various steps of processing and value-adding, which remains under control of the sponsor at every step;

Scheme of the meat value chain



2. Shortest link between all the above-described steps. The link and delay between every step of the chain described above must be the shortest possible in order to better control quality, to lower cost and to improve efficiency;

3. Strong relationships with farms: meat should only be bought in regional collective farms or at individual local farmers able to supply the necessary level of quality. No import and no processing of low-quality meat. This will give added value to the local farms and help improving existing breeding techniques;

4. Formation of highly-skilled professionals for every task: farmers, meatpackers, butchers. This will directly support employment and better life conditions for a whole category of the local population. And it is a crucial factor in terms of quality, customers' satisfaction and, *in fine*, profitability of the business;

5. Use of modern technologies with emphasis on traditional principles and value: quality of the product, presentation, etc. Economic improvement shall go together with the maintenance of ancestral traditions and culture;

6. Pilot project: the chain "from the field to the plate" using international standards of quality is destined to be reproduced in other regions of the Country, supporting a dramatic improvement of the profitability and good functioning of the beef cattle sector in its whole.

2.3 The supply side: a very good basis in the existing farms

At the first stage, the project foresees that all the meat sold to final customers will be supplied by three large cattle farms belonging to the sponsor and located in Gissar, Yavan and Jomi.

Basic characteristics of these farms are the following:

- About 1,800 heads in every unit;
- About a third of the livestock is made of milk cows;
- Veals are fed up to 3 months. A first selection takes place with about 25 per cent of the animals sent to slaughterhouses and 75 per cent kept in the farms mainly for genetics and milk production;
- Animals are slaughtered in the farms.

During the course of the mission, experts visited two of the three farms (Gissar and Yavan). The third farm shows the same picture as the two other ones.

Main conclusions of the experts are the following:

- **Livestock characteristics:** farms gather Simmental, Brown Swiss and Holstein breeds. Though these breeds are mainly used for milk production, they offer good quality of meat as well;
- **Livestock condition:** the experts observed that animals are in very good condition. Their size, weight and general presentation mainly fits international standards. Feeding is made of quality diversified products (grass and mineral concentrate);
- **Overall organization of the farms:** the tenure is in good condition. Breeding techniques employed correspond to high standards of quality, comparable to the Western ones. All the cattle is in good health;
- **Geographic localization:** The three farms are located in an area close to Dushanbe, which shall represent the main, if not the only market for quality meat, at least at the first stage of development of the project. Distance is therefore not a problem to supply final sales points. Access to the farms is however not optimal with relatively bad roads from the principal road to the facility. While not a clear priority, this situation shall be improved in the future in order to avoid bottlenecks when volumes will start to improve significantly;
- **Role of the farms in the meat value chain.** It is already possible on the existing supply basis (the three farms of the sponsor) to develop significant volumes of processing and sales. A slaughterhouse capable of processing 15 to 20 heads per day as conceived in the project could potentially be fully supplied by these three farms.

There is no particular problem with supply of cattle to create the high quality meat value chain. This is a crucial point as good quality supply is the most important and most difficult link of the chain to put in place. All other links (slaughter, butcher, sales) suppose some investment and technological transfer. But creating state-of-the-art farms as the experts observed in Tajikistan is much more lengthy, costly and unpredictable. The role of the experts shall only be to improve marginally the

productivity of the existing farms and to diffuse good production practice as largely as possible in other potential outlets.

2.4 The demand side: existence of a potential market for quality beef

Quality beef meat is a relatively narrow market in emerging countries as most of the population does not represent a potential target due to low purchasing power and mainly “conservative” consumer habits.

As a consequence, potential demand for quality beef in Tajikistan will mainly come from the following categories of consumers:

- Elite hotels and restaurants:
- Foreign organizations (embassies, large foreign corporate, large NGOs):
- Expatriate:
- Wealthy local class:
- Emerging middle class:

In order to give a proxy of the potential volumes that could be sold, two instruments can be used: estimation of the imports of quality beef meat and market study among potential buyers:

2.4.1 Import of quality beef meat

There is no specific statistical data on this category of food products so we must refer to overall imports of beef. They amounted to USD4.2 million in 2008. However, the volume of imports hardly gives any valuable information. It does not distinguish high quality meat for consumption and low quality meat used for transformation by meat processing factories.

Overall, the volume of imports is therefore not considered as a real benchmark. It only gives an idea of the minimal consumption level that could not be satisfied by local production.

Indeed, as there is currently virtually no access to quality beef meat for Tajik customers (no sales points for final consumers), demand could only come from the very narrow category of international hotels and elite restaurants. Most of the meat they use is imported by cargo from Dubai or Moscow. It is essentially Australian beef. The price of packed meat parts

imported is announced at 45 somoni minimum per kilogram (USD10) for rib-eye steaks for example.

Usually, restaurants are in need to import high quantity of frozen meat from Moscow every 3-4 months and stock them for a long period. The quality of imported meat is therefore far to be optimal.

2.4.2 Market study

One of the key tasks of the experts mandated for this mission was to evaluate potential demand at the micro-level by visiting and interviewing the main categories of buyers targeted:

1. **Hotels and restaurants:** hotels of international standing (Hyatt, Tajikistan, Taj Palace, etc.) and elite restaurants (Segafredo, La Grande Dame, Steak House, Ukrainian and Chinese restaurants, etc.) have been identified. According to interviews with general managers and chefs from these outlets, their demand for beef meat corresponds to approximately 20 kilograms per day. So, if we consider that 20 hotels and restaurants might gather these volumes, the overall potential would be at 400 kilograms per day of back parts, which represent about 6 animals per day. Part of this demand is currently supplied by imports (mainly Australian meat channeled through Dubai or Moscow) and part of it by local meat. However, local meat does not correspond to the quality criteria they want to reach and they have all showed a high interest for local meat supplied at international quality standards;
2. **Foreign organizations:** embassies of many countries are active in Dushanbe including OECD countries embassies. While most of them gather a limited amount of personal and foreign diplomats, at least two of them present a high potential: the US embassy with more than 200 employees and the Turkish embassy with a similar contingent. These embassies have their own restaurant for the staff and shall become major clients of quality meat;
3. **Expatriate workers:** expatriate workers in Tajikistan belong to three main categories: personnel of NGOs and embassies, employees of foreign corporate, soldiers from NATO armies with basis in Tajikistan. They usually stay for a limited time in the country and wish to get access to food products corresponding to their usual consumption standards. While NATO soldiers might not be a stable clientele in the future, expatriate workers at NGOs, embassies and foreign corporate shall regularly increase with the improvement of the economic situation. This potential

clientele will therefore become more and more important for the success of the project. A large part of food products including meat is currently imported by foreign organization through very expensive channels. So, there is a real demand for local food products corresponding to international quality and sanitary norms;

4. **Wealthy people:** despite being considered as a poor country, Tajikistan has seen the emergence of an economic elite with high purchasing power. It is difficult to estimate properly the size of this category of population, but their consumer's habits tend to get closer to international ones. They would prefer buying quality local meat rather than imported one;
5. **Emerging middle class:** economic development goes together with the emergence of a middle class with higher purchasing power and tendency to adapt to international standards of consumption. This clientele will be a key growth area in the medium to long term for the success of the project.

Main conclusions are the following:

1. Demand for quality beef meat **exists** but it is **difficult to quantify** properly;
2. There is **no competition** on this segment currently apart from expensive, unstable imports;
3. Demand is **not very large** due to the small size of the country, the low purchasing power and the still limited contingent of expatriate workers and foreign tourists.

These observations lead to the following concrete conclusions concerning the project:

1. **Before building the whole chain (from breeders to consumers), we strongly recommend testing the market by opening only a butchery store at the first stage.** Investment will be limited, and as a consequence risk will be lower;
2. **Supply for a butchery store can be guaranteed through the existing infrastructure of breeding, slaughtering and cutting.** However, formation of butchers must be provided by international experts;
3. **Opening a butchery store is a relatively rapid process with limited capital expenditures.** In parallel with testing the market, the other elements of the meat value chain can be progressively organized, in particular a modern slaughter allowing an increase of quality standards, volumes supplied and profitability of the business.

2.5 Distribution channels

Meat shall be cut and processed in a special outlet allowing the treatment of 2 animals per day. After having been selected and killed inside the farms, carcasses must be transported through this outlet in special refrigerated trucks. Carcasses can be stocked for a couple of days in these refrigerated trucks for dripping.

Butchers shall then cut and process meat according to French technology taught by experimented butchers.

Following the market study conducted in Dushanbe, the following distribution channels shall then definitely be put in place:

- Sale of fresh meat in carcasses or half carcasses (traditional beef meals prepared in Tajik style often use whole or half carcasses);
- Sale of fresh meat in retail cuts to big clients (hotels, etc.) directly delivered to them by refrigerated trucks;
- Sale of fresh meat in retail cuts to individual clients directly delivered to them by refrigerated trucks providing a minimal purchase amount;
- Sale of fresh meat in retail cuts through a French butchery;
- Sale of fresh meat in specialized restaurants (grilled meat, hamburgers) that can be directly linked to the butchery by a quality label guaranteeing final customer the presence of high quality meat.

2.6 Technological gap

Every link in the meat value chain includes a significant amount of technological content. As stated above, there is no real technological gap between the three farms visited and international standards of cattle breeding.

Though, the picture appears largely different when going back up the value chain.

1. **Slaughter:** the current installation does not correspond to international standards. In order to build a real quality value chain, investment is required in a modern,

efficient, hygienic slaughter. Though, at a first stage, some improvement can be brought to the existing facility in order to start the project.

2. **Butchery:** meat is currently mainly sold in local markets or in some universal stores. Sanitary conditions are very bad in markets, where meat is not even sold in refrigerated layouts. Sanitary conditions are better in stores equipped with refrigerated displays. But there is no traceability and no description of the origin of the meat and the conditions of its processing. All these sales points do therefore not correspond to international standards of traceability, efficiency and sanitary conditions. In addition, meat cutting techniques are still rudimentary. In the markets, meat is sold with bones. Fillet is the only noble part that can sometimes be found separately. All other back parts are more or less cut as a whole and without clear distinction of quality. As a consequence, value added in selecting and cutting noble parts is largely absent. The creation of a butchery is a key element of the project as it will help to create demand and increase value added;
3. **Veterinary and sanitary services:** sanitary conditions do not correspond to international standards. Outlets are old and not in very good shape. Instruments do not look clean enough. At the same time, severe veterinary norms exist and tend to be respected. So it is more a matter of renovating existing facilities for meat processing and implementing the existing regulation than lack of norms. Local veterinaries do not need particular formation;
4. **Transport:** modern livestock trucks must be bought in order to guarantee comfort of the cattle. Good functioning refrigerated trucks shall also be acquired for transportation of meat and ready products both to gross customers and butchery store. Transport is the most sensitive link in the cold chain, especially in a country with frequent very high temperature as Tajikistan;
5. **Conditioning and packaging:** there is virtually no use of modern packaging corresponding to international standards. It is important in order to guarantee better conservation of meat products but also in order to facilitate transportation and improve presentation of the products.

2.7 SWOT analysis

SWOT means Strengths, Weaknesses, Opportunities and Threats. It is a common tool to summarize the potential of a specific business in any industry.

The following table sums up the result of the observations made by the expert in the course of their mission in Dushanbe.

Table 1 - SWOT analysis of meat value chain industry in Tajikistan

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none">• Access to a very good supply basis (farms)• Highly committed and well connected sponsor• Absence of competition• Existence of a potential demand basis for elite meat• Cheap and available labor force• Access to state-of-the-art technology through French expertise• Important role of the project in supporting economic development of the country's agricultural sector	<ul style="list-style-type: none">• Difficulty to properly assess local demand (taste, purchasing power)• Low purchasing power in Tajikistan• Absence of modern slaughterhouse• Lack of quality norms• No organized market for quality meat
OPPORTUNITIES	THREATS
<ul style="list-style-type: none">• Export markets• Possible synergies with other elite food products• Creation of a quality label• Airport catering• Increase of expatriate workers contingent	<ul style="list-style-type: none">• Inflow of cheap imported beef• Sanitary risk• Cultural discrepancies• Technological risk• Development of local competition

-
- Opening of a meat restaurant
 - Supply increase offer possibility to create new distribution channels (for skins, "5th part", etc.)
 - All traditional risks linked to investment project in Tajikistan

2.7.1 Strengths

Access to a very good supply basis

See Part 2.3, pp.11-12

Existence of potential demand

See Part 2.4, pp.13-15

A highly committed and well connected sponsor

Being the Deputy Prime Minister for Agriculture, the sponsor is officially in charge of developing and reforming the agriculture in the country. He is therefore highly committed in the success of this project both as a businessman and as a State authority considering that this experience is a pilot project that could be reproduced in other regions of the country and decisively contribute to the development of the whole livestock breeding sector;

Absence of competition

The market for quality beef meat might not be very large currently but it exists. Being a pioneer will give the sponsor overwhelming competitive advantage during the future development of this industry which should happen in any case. Once the project will be in place, barriers to entry will be significantly higher for potential competitors;

Cheap and available labor force

The project is not highly labor intensive, but this factor should not be neglected as it will help supporting higher profitability. In addition to highly competitive cost of labor, the level of

education and formation is high in Tajikistan compared to many emerging countries. We do not consider that skilled labor force will be a problem once they have benefited from formation by French highly-qualified specialists;

Access to state-of-the-art technology transfer

Experts mandated by the Cercle Kondratieff are a crucial element of the project as they will provide the necessary technology transfer and experience of conducting such projects in France as well as in other emerging economies. All the links of the value chain will benefit from this technology transfer, from breeding to processing and selling meat and including operational and financial management of an industrial project (see *Appendix 4* for the list and key qualifications of experts);

Role of the project for whole Tajik's agriculture

The project is not only aimed at generating profit for the sponsor. It will also play a key role in structuring the whole meat and breeding sector, helping to support private farmers to promote better genetics and breeding by offering them a safe and guaranteed distribution channel. It is indeed considered as a pilot project that shall be reproduced in other areas of the country. Building an economically efficient meat value chain will be a key engine for the promotion of higher value added in all the agricultural sector in the future.

2.7.2 Weaknesses

Difficulty to properly assess local demand

The market study conducted in Dushanbe shows that a potential demand exists. Quality beef is now imported with significant difficulty and unsatisfactory quality and sanitary conditions by elite hotels and restaurants, foreign compounds and organizations. This demand is enough to guarantee the success of a butchery with a limited capacity. It is however necessary to test further the market in order to evaluate the size of the slaughterhouse that shall be built in a second stage.

Low purchasing power

Only a very limited share of the population will have access to quality beef meat under the existing economic and social conditions. This will therefore be a pilot project at the

beginning. It will however pave the way for rapid development in the medium term as soon as revenue of the population starts to grow significantly and meat consumption increases.

Absence of modern slaughterhouse

Proper sanitary norms will not be guaranteed as long as significant investment is not made in the slaughtering process. This point shall be improved at the first stage on the basis of the existing facility, but a new, modern and efficient outlet will have to be built later in order to process increasing volumes and guarantee the respect of sanitary and quality norms and standards.

Lack of quality norms

International standards of traceability, quality and sanitary conditions are not applied at all in Tajikistan currently. Even the creation of a small butchery shall therefore necessitate significant investment both in technological factors (in order to reach international norms at the micro-level of the butchery) and in marketing ones (in order to promote the importance of these standards among final customers).

No organized market for quality meat

Beef meat is mainly sold in the local markets or transformed by local meat processing factories under very bad sanitary and quality norms. So, the Tajik customer has no access to quality, well-cut meat. The market must indeed be created, with all the risks linked to such a process.

2.7.3 Opportunities

Export potential

The project in its current format is destined to supply the local market. Though, further development of the meat value chain can be supported by export. Currently, geographical, political and infrastructure conditions are far from optimal to envisage seriously a development of exports. Tajikistan is an enclave in Central Asia surrounded by high mountains. Border countries are not potential markets due to internal tensions (Afghanistan, Kirghiz Republic), bilateral tensions (Uzbekistan) or difficulty to penetrate the market (China). The only reasonable export channel for meat products is by plane. The lack of cargo facilities and services does however severely limit this channel. However, significant

investment is made to improve the airport infrastructure and the development of cargo services could offer opportunities to export quality meat.

Identifiable export markets are mainly Islamic countries from the Middle East:

- United Arab Emirates gather more than 50,000 hotel rooms and have become a hub for exhibitions and conferences with a large amount of foreign visitors;
- Saudi Arabia: more than 2 million pilgrims go to Mecca every year for the hadj. Islamic tradition supposes that they get access to free food during their trip;
- Egypt: more than 1 million tourists every year.

Producing quality meat in conformity to Islamic tradition (halal) with good conditioning, traceability and cold chain respect can help local meat industry to supply part of a large market which is far from being satisfied currently.

Another potential export market is Russia. Tajik agricultural products are already sold in significant amount as regular flights exist between Dushanbe and a whole range of Russian cities. In addition, Russia is a net importer of beef meat and could therefore offer significant opportunities once proper cargo links are in place.

Opening of a meat restaurant

There are still very few restaurants of international standard in Dushanbe. Opening a restaurant coupled with the butchery, or located very close to it, would offer a perfect marketing instrument in addition to being a profitable business *per se*. Existing steak houses in Dushanbe do not seem to offer good quality meat according to interviews conducted. The sponsor could transform one of its existing restaurants in a specialized steak house promoting the meat label created in parallel. Or the restaurant could be located inside the butchery store: for example, first storey with the butchery store and second storey with restaurant offering the possibility to customers to chose their meat and follow all the process (meat cutting, grill cooking). This is a popular format in many countries and could well be experienced in Dushanbe. It would give additional revenues and help supporting the promotion of the meat label.

Opening of a fine meal store together with the butchery

Despite the presence of a growing wealthy class and foreign expatriate workers with significant purchasing power, there is currently no real store with fine meals and quality imported products in Dushanbe. As the butchery will offer quality meat with "Western"

presentation, it will have a unique opportunity to promote the sales of by-side elite products from France and Western Europe. This is usually a very profitable business if import channels are correctly controlled.

Creation of a quality label

In order to distinguish clearly the meat produced in the butchery, a quality label shall be registered and deposited. The name of the label should remind the “western” profile of the meat processing chain in terms of quality and traceability. All corporate clients could therefore promote the product by writing in their menus that they use the labeled meat produced and processed by the sponsor.

Airport catering

About 1 million passengers travel through the Dushanbe airport every year. It represents about 2,750 people every day. The airport is under construction and catering facilities shall appear with the new facilities. A traditional tray in most airlines contains about 80 grams of meat where beef represents 25 per cent average. This represents about 55 kilograms of beef meat per day. This is the minimal potential as the development of the Dushanbe hub will go together with more demand for catering services.

2.7.4 Threats

Inflow of cheap imported beef

The meat market is largely a multinational one with big trading companies channeling considerable volumes of meat and capable of significantly influencing final prices. Tajikistan is an open economy. So there is a real risk that the development of the demand for meat might attract big exporters which will sell at low prices making the business less or not profitable at all. Considering the limited size of the Tajik market and low purchasing power, this risk is however limited at the time being.

Sanitary risk

Even by applying high standards, a sanitary risk always exist in the meat sector as showed the recent example of “mad cow” disease. This risk is mitigated by the implementation of severe norms but it cannot be completely eradicated

Cultural discrepancies

“French quality” meat might not fit traditional customers' taste in Tajikistan. This risk is mitigated by the presence of a large expatriate clientele and by the fact that beef can be cut and prepared according to local traditions with the same standards of traceability and quality.

Technological risk

As stated above, the project has a high technological content. There is always a risk that technology will fail at some point, for human or material reason. The role of the experts is therefore also to provide the best material equipment and, first and foremost, to give the best level formation to future employees of the project, in order to limit technological risk as much as possible.

Development of local competition

This risk exists in any sector of activity. It is however very low in Tajikistan as the sponsor is the only owner of such high quality breeding farms, a key element to create an efficient meat value chain. In addition, the local market is too narrow to attract strong players in the sector at the time being.

All traditional risks linked to investment project in Tajikistan

Any investment project must consider political, country and business risks. They are considered as high in Tajikistan according to standard international benchmarks. They are however mitigated by the stature of the sponsor and its personal implication in the success of the project.

3 Technical parameters of the project

3.1 Butchery

3.1.1 General principle

As stated above, the main conclusion of this expert mission is that the market for quality beef meat should be tested before launching significant investment in the whole value chain.

The best way to test the potential demand, on one side, and the capacity of the sponsor's organization to put in place a qualitative and efficient supply process, on the other side, is to **open a butchery store in a highly visible and prestigious place in Dushanbe.**

In order to create the market, standards must correspond as close as possible to the ones in use in Western countries, in general, and in France, in particular:

- **Sanitary standards:** French customers never wash the meat they buy and they usually eat it rare (with blood). Sanitary standards are therefore very strict;
- **Modern and clean instruments:** it is part of the quality chain to put in place and control regularly. Meat shall arrive at the store right after slaughter and be cut inside the facilities of the store by professional butchers;
- **Separated refrigerated displays for the meat:** cold chain goes from the refrigerated slaughterhouse to refrigerated trucks to cold rooms of the butchery to refrigerated displays of the butchery store (4 components). This cold chain is of even more particular importance in hot countries like Tajikistan. Separated refrigerated displays inside the store also give the possibility to show meat to customers in an attractive way. Meat can therefore be sold easily and at higher prices than with lack of attractive presentation;

Meat is cut according to French standards: dozens of meat cuts are distinguished in the French classification. They all correspond to a particular taste, quality and cooking receipt. Teaching the right way to cut parts and present them will be the role of the professional French butcher. In addition, the butcher is a specialist that shall choose himself the best carcasses, cut them, prepare the meat and condition it in the better way.

3.1.2 Description of the store

A traditional French butchery store is usually a relatively small specialized outlet. It can offer only meat, but usually also offers for sales meat products (sausages, pates, etc), ready meat dishes and specialties (catering butchers) and sometimes other regional specialties and delicatessen.

The butcher store shall therefore contain at least four rooms:

- A store room for customers with the presentation of products for sale;



- A hall for cutting, processing and packing meat;



- A cold room for meat storage;



- A rest room/changing room for employees.

3.1.3 Evaluation of capital expenditures

For the butchery store, capital expenditures include:

- **Acquisition of a commercial lease for the store:** the amount of expenditures will depend on sponsor's choice to buy a commercial place, rent it or use and transform an existing commercial place belonging to him. The choice of the place shall be guided by the necessity to have enough room and be located in a prestigious area with high visibility;
- **Transformation and renovation work:** in order to guarantee high good sanitary conditions, all rooms must be renovated and equipped with special material easier to wash (tiled floors and walls, white colors). The store itself must also be decorated in an attractive way in order to give positive impression to customers;
- **Equipment:** new equipment shall be bought. Some parts might be bought in Tajikistan but we strongly advise to import new equipment from France to equip the butchery. The complete list of equipment shall be established by the expert in accordance with the commercial place given by the sponsor. An indicative list is given in Appendix 2;
- **Formation of local butchers:** cutting, processing and selecting meat is a matter of professionals. Formation of local professionals is indeed the key element for the success of the project;
- **Working capital.**

Table 2 - Indicative investment for the butchery store

Category	USD
Equipment	70 000
<i>Instruments</i>	<i>30 000</i>
<i>Refrigerated displays</i>	<i>10 000</i>
<i>Cold room</i>	<i>30 000</i>
Transformation and renovation work	15 000
Formation	25 000
Working capital	10 000
TOTAL	120 000

3.1.4 Prices

Prices of beef meat observed during the mission varied significantly:

- 19 somoni per kilogram at the market for cut meat with bones;
- 29 somoni per kilogram at local stores for cut meat without bones;
- 45 somoni per kilogram for imported Australian cut meat bought by hotels.

In parallel, sales price of live animals from the farms visited to middlemen is announced at 10 somoni per kilogram.

3.1.5 Financial projection

Revenue module

- **Price assumption:** In order to remain competitive against imported meat as well as local meat sold in universal stores, price of the products sold in the butchery shall not exceed 45 somoni per kilogram for most expensive parts (fillet) and shall be 35 somoni in average including back and front parts;
- **Volume assumption:** 2 animals cut and processed per working day with 250 working days per year. Average weight is 300 kilograms per cattle. Meat output is 50 per cent (75 kilograms of front parts and 75 kilograms of back parts for a 300 kilograms cattle);
- **Exchange rate assumption:** 1USD=4.5 somoni

Table 3 - Revenue assumptions for the butchery

Category	Unit
Heads per year	500
Weight per animal (kg)	300
Output meat (kg)	150
Front parts (kg)	75
Back parts (kg)	75
Price Front parts (somon/kg)	30
Price Back parts (somon/kg)	40
Turnover by head (somon)	5 250
Total Turnover (somon)	2 625 000
Total Turnover (USD)	583 333

Operational expenditures

- **Cost of goods sold (COGS)**

The price of a living animal is announced at 10 somoni per kilogram. We consider this as a maximum price as it is the price sold by sponsor's farms to third parties.

As the owner of the butchery is also the owner of the farms some adjustment can be made.

Total price for one head of 300 kilograms shall therefore be 3,000 somoni.

If we consider that the butchery will purchase 500 heads per year, the total cost would be 1,500,000 somoni or 333,333 USD.

- **Sales, general and administrative expenses (S,G & A)**

The management of the butchery will entail minimal expenditures.

A maximum of 6 employees will be required including the butcher, salesperson, assistant and drivers responsible for delivering carcasses from the slaughter to the butchery and for delivering processed meat and meat products from the butchery to corporate clients (hotels, restaurants, embassies, etc.).

Considering the level of salaries in Tajikistan, payroll shall not exceed USD2,000 per month.

Cost of the rent will depend on sponsor's decision to use one of its existing commercial outlets or not.

We consider that a rent of USD1,500 per month maximum shall be envisaged as the overall size of the store would be around 100-120 square meter.

- **Other cost**

Other cost shall include

- ✓ financial interest payments on credit if the investment is financed through a loan;
- ✓ taxes;
- ✓ exceptional cost.

They should not exceed USD1,500 per month.

Financial estimation

Estimated profit according to all the assumptions above is given on a yearly basis.

Table 4 - Indicative profitability of the butchery

Module	USD
Revenue	583 333
COGS	333 333
S,G & A	42 000
Other cost	18 000
Profit	190 000
Profitability	32,6%

3.2 Slaughterhouse

3.2.1 General principle

The creation of the butchery will help testing and evaluating the market for quality beef meat in Dushanbe. It is however **only the foundation stone of the project**. Once butchery is open, the two extreme links of the chain will be in place: breeding and sales to final customers.

Standards of quality and capacity in volume will however not be guaranteed. If demand is high enough, investment will therefore be needed in the **construction of a modern, well-equipped slaughterhouse allowing the processing and cutting of large volumes** of beef meat in accordance with higher standards of quality.

Such facility does not exist at the moment in Tajikistan. Most of the equipment shall therefore be imported.

Different models of slaughterhouses have been developed by experts in France as well as in other emerging countries. This proved to be a crucial experience in structuring and developing the meat industry but also breeding and agricultural sectors as a whole.

3.2.2 Description of the slaughterhouse

The slaughterhouse will be made of:

- ✓ A 1,000 square meter facility including 2 hanging chains, a room for cutting meat, cold room for storing;
- ✓ A water treatment outlet;
- ✓ An incinerator;
- ✓ An enclosure zone for cattle (1 ha minimum).

Such a facility will be able to receive and process up to 10,000 cattle every year (35 per day) if utilized at its maximum capacity.

Maximum temperature in the cutting room shall not exceed 12° C. Carcasses shall be stocked in a cold room at a maximum temperature of 3° C.

A special room shall be devoted to the first cutting which consists in retiring parts of the carcass not for sale. These parts shall then be incinerated.

A second room shall be devoted to the cutting of the carcass in front and back parts.

Back parts and front parts shall then be sent to the main cutting room in order to cut the different parts according to the classification currently in use in France and Europe.

Part of the carcasses shall also be separated and sent as such to those clients wishing to purchase whole quarters or halves of the cattle.

Noble meat cuts shall then be packed in special punnets allowing an optimal conservation. Other parts (front parts mainly) can also be packed under vacuum. All these punnets and

packs are labeled in order to fully follow the traceability of the meat. A stick is also incorporated in the packs and punnets in order to verify the respect of the cold chain. If the color of the stick changes, it means that the cold chain has not been respected.

Two rooms shall then be used as warehouses: one cold room for ready products and one room for empty packaging and other material.

Other rooms shall include a changing room for the staff equipped with showers if possible, a room for the washing up of instruments and a room for storing other usable parts of the carcass (bones, offal).

3.2.3 Evaluation of capital expenditures

For the butchery store, capital expenditures include:

- ✓ The building;
- ✓ Equipment and material;
- ✓ By-side equipment (cold room, laboratory, sewage, logistics);
- ✓ Formation (technology, maintenance, sanitary standards, norms);
- ✓ Working capital.

Table 5 - Assumption for total investment in the slaughterhouse

Category	USD
Building	850 000
Equipment	850 000
Formation	100 000
Working capital	200 000
TOTAL	2 000 000

3.2.4 Financial projection

Revenue module

- **Price assumption:** 35 somoni average per kilogram;
- **Volume assumption:** 15 animals cut and processed per working day with 250 working days per year;

- **Exchange rate assumption:** 1USD=4.5 somoni

Table 6 - Revenue assumptions for the slaughterhouse

Category	Unit
Heads per year	3750
Weight per animal (kg)	300
Output meat (kg)	150
Front parts (kg)	75
Back parts (kg)	75
Price Front parts (somoni/kg)	30
Price Back parts (somoni/kg)	40
Turnover by head (somoni)	5 250
Total Turnover (somoni)	19 687 500
Total Turnover (USD)	4 375 000

Operational expenditures

- ***Sales, general and administrative cost***

10 employees in addition to the 5 employees of the butchery will be necessary.

Considering the level of salaries in Tajikistan, payroll shall not exceed USD5,000 per month or USD60,000 per year.

There will be no additional rent cost provided that the facility will be under own property.

Other general expenditures include electricity, water, heating, etc. Their total shall not exceed USD2,000 per month or USD24,000 per year.

- ***Other cost***

Other cost shall include:

- ✓ financial interest payments on credit if the investment is financed through a loan;
- ✓ taxes;
- ✓ exceptional cost.

They should not exceed USD5,000 per month. Their level will however depend on the source of financing of the project (loan or equity).

If a banking loan is granted and if we foresee an interest rate of 12 per cent in USD, disbursements on a loan of USD2 million would reach USD20,000 per month or USD240,000 per year.

Financial estimation

Estimated profit according to all the assumptions above is given on a yearly basis and financing comes from equity placement.

Table 7 - Indicative profitability of the slaughterhouse

Module	USD
Revenue	4 375 000
COGS	2 500 000
S,G & A	84 000
Other cost	60 000
Profit	1 731 000
Profitability	39,6%

Table 8 - Example of profit forecast for 4 years of activity (in USD)

	2011	2012	2013	2014
SALES				
Heads per year	3 000	6 000	9 000	10 000
Weight per head	300	300	300	300
Meat Output	150	150	150	150
Front parts	75	75	75	75
Back parts	75	75	75	75
Price front parts (USD)	6,5	6,5	6,5	6,5
Price back parts (USD)	9	9	9	9
Revenue per head (USD)	1162,5	1162,5	1162,5	1162,5
Total revenue (USD)	3 487 500	6 975 000	10 462 500	11 625 000
Price of skin (USD)	30	30	30	30
Revenue skin (USD)	90 000	180 000	270 000	300 000
Total revenue (USD)	3 577 500	7 155 000	10 732 500	11 925 000
COGS	1 980 000	3 960 000	5 940 000	6 600 000
Heads per year	3 000	6 000	9 000	10 000
Weight per head	300	300	300	300

Price of cattle (USD/kg)	2,2	2,2	2,2	2,2
Total Achats (Eur)	1 980 000	3 960 000	5 940 000	6 600 000
Sales Margin	1 597 500	3 195 000	4 792 500	5 325 000
S,G & A	84 000	84 000	84 000	84 000
Wages	60 000	60 000	60 000	60 000
Other administrative expenses	24 000	24 000	24 000	24 000
Operational Margin	1 513 500	3 111 000	4 708 500	5 241 000
OTHER COST	60 000	60 000	60 000	60 000
Taxes				
Interest payment				
Exceptional expenses				
Amortization	200 000	200 000	200 000	200 000
Net profit before tax	1 253 500	2 851 000	4 448 500	4 981 000

4 Conclusion and comments

The feasibility study conducted in Tajikistan shows that:

1. The three farms under property of the sponsor offer a very good basis for the project;
2. Creating a high quality beef meat value chain makes sense as there is no local offer of quality meat at the time being and imports do not satisfy the potential demand;
3. Demand is difficult to assess properly as the market is virtually non-existent and has to be created. However, a rough estimation of the existing potential clientele shows that the demand basis is sufficient;
4. As demand is difficult to assess, it is highly recommended to start the project by a butchery store aimed at testing and evaluating the market;
5. In a second stage, the building of a modern slaughterhouse will be necessary in order to deliver a growing demand and guarantee the respect of norms and standards;

-
6. Under reasonable assumptions of price and cost, the butchery project entails a net profitability before tax of 32 per cent for an initial investment estimated at USD100,000;
 7. Under reasonable assumptions of price and cost, the slaughterhouse project entails a net profitability before tax of 40 per cent for an initial investment estimated at USD2 million;
 8. Financial estimation shall be précised and adjusted once the sponsor has made his decision on the sequential of the project. Experts will then be able to calculate precisely the investment for each part of the project;
 9. Formation is a crucial factor for the success of the project. All the employees of the slaughterhouse and the butchery shall have a complete cycle of formation that will be provided by experts of the project. It is also important that experts continue to monitor the functioning of the facilities once they are open in order to avoid technological problems;
 10. Despite being a private project with a profitability goal, the creation of a quality beef meat value chain will help structuring all the meat sector in Tajikistan, as well as cattle breeding (by enlarging supply of cattle outside of the existing farms) and agriculture (by increasing demand for quality feeding for cattle).

Appendix 1 - Norms and standards in the meat sector

A key component of the meat value chain is the respect of norms and standards that have been developed worldwide in order to guarantee both safety and satisfaction of the final consumer.

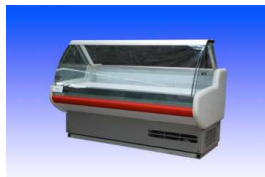
Here is the list of norms that must be respected in order to get conformity to international standards:

1. **Traceability:** it is the cornerstone of the meat industry. Final consumer must be informed on all the path followed by the meat: breed, age, place of birth, localization of farm, localization and date of slaughter, localization and site of processing, name of the piece of meat, etc.
2. **Respect and comfort of cattle:** cattle have the right to a minimal level of comfort during their life, both in farms and during their transport
3. **Cleanness of cattle:** cattle directed to slaughter must be clean and in good hygienic condition
4. **Cattle alimentation:** cattle must be fed with quality ingredients excluding GMOs. They must have access to clean water
5. **Slaughtery and butchery:** animals must be processed in clean outlets at appropriate temperature:
 - Slaughter: 20°C max
 - Cold chambers : 3°C max
 - Cutting outlets : 12°C max
 - Logistic areas : 4°C max

-
6. **Sanitary security – Food security – HACCP** : all outlets must be clean and washed up regularly, employees must wear clean clothes and regular medical and veterinary control must be guaranteed
 7. **Packaging**: special sanitary norms are applied for packaging material and equipment (vacuum, thermoforming, etc)
 8. **Cold chain**: once products are processed and ready to be sold, a constant temperature must be guaranteed from production to transport to storage to final sales point. In order to check it, “cold chain sticks” must be incorporated in every packaging. It changes color if cold chain is broken and gives therefore the possibility to final consumers to check rapidly the respect of this norm;

Appendix 2 – Indicative list of equipment for the butchery

- Refrigerated and freezing displays (for meat products in the store)



- Cold room for 1,000 kilograms of meat



- Butcher knives (boning, breaking, skinning, paring knives, knife steels, meat handsaw)



- **Mincer**



- **Slicer**



- **Vacuum packing/thermoforming machine**



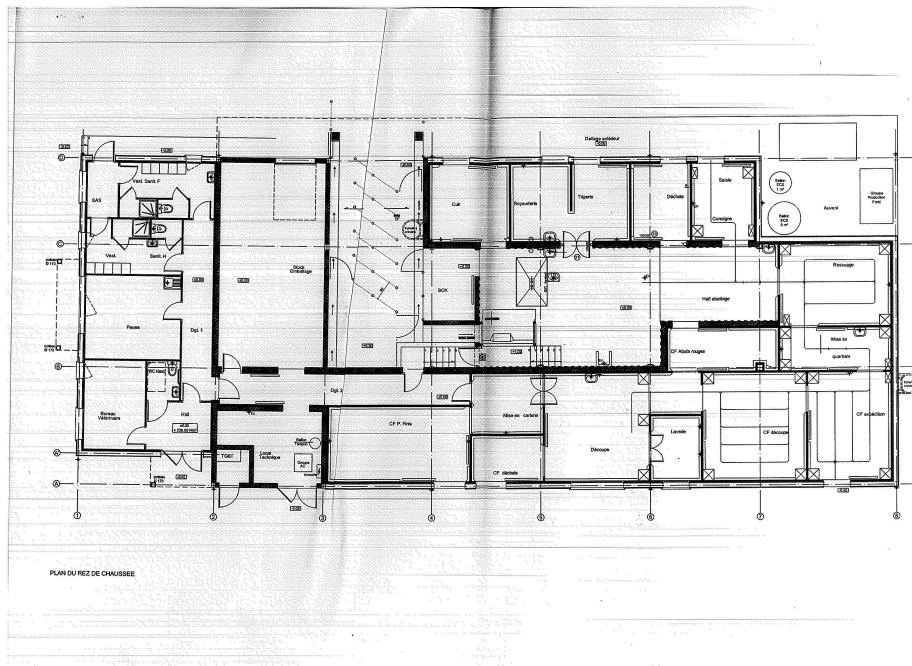
- Tables and shelves, special clothes (meat-cutting gloves, aprons, etc.





Appendix 3 – Schemes of the slaughterhouse

- Variant 1



- **Variant 2**

Cold Room		Ready-to-use packaging	
Finished products			
Conditioning room			
Dripping			
-----	-----	-----	
-----	-----	-----	
-----	-----	-----	
Cutting room			
-----		-----	
-----		-----	
-----	-----	-----	
Processing of non commercials		Preparation of marked parts	
Cold rooms			

Appendix 4 – List of experts

Michel Duplat, retired general manager of a medium size agro-processing company. Specialist of integrated management of the meat value-chain, “from the field to the fork”. Michel has managed the building of modern slaughterhouses in a dozen of countries including Russia and other emerging markets;

René Gaufroy, professional butcher, retired general manager of a butchery store and a hotel. Mr Gaufroy has led the training of Russian butchers in Kaluga and in Burgundy done by Cercle Kondratieff in 2005-2007;

Jean-Pierre Guyard, retired farmer. Mr Guyard has led the training of Russian cattle breeders in Kaluga and in Burgundy done by Cercle Kondratieff in 2005-2007. He has been involved in two missions in Tajikistan in 2009 within the framework of the BAS Programme;

Ludovic Seve, from Company MCM Casing specialized in the off-take of by-products of slaughter houses (skins, horns, etc.) and in the procurement of inputs for the meat industry. Mr Seve and MCM Casing have already prepared business plans for small scale slaughterhouses in Africa including a business partnership between MCM Casing and these slaughter houses;

Gilles Walter, economist and investment banker, managing partner of Camden Partners in Moscow. Specialist of market analysis and preparation of business plans for companies willing to make fundraising.