Final Report

Project working title: Investment Assessment and Application of High-Level Technology for Food Security in Asia and the Pacific

ADB Reference:

TA-9218 REG: Investment Assessment and Application of High-Level Technology for Food Security in Asia and the Pacific: Agricultural Wholesale Market Specialist (50058-001)

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1. INTRODUCTION

As stated in the Terms of Reference, the main objective of this assignment is to build the capacity of government officials in Kazakhstan, Nepal, Uzbekistan and Vietnam on the development, operation, and management of wholesale markets for safe and fresh food, and their linkages with the producers. MERCASA has organized a training on these aspects for government officials and has arranged their physical visits to the Spanish wholesale and retail markets in Madrid, Valencia and Saragossa for field-experience and learning.

The assignment has imparted and shared knowledge and skills on the different aspects of wholesale markets through study tours and training to a group of 12 government officials from countries above and 5 ADB staff.

MERCASA has organized the study tour in three wholesale markets in Spain, managed their travel, and arranged the required logistics for the participants. The study tour has also included meetings with and/or visits to agricultural producers and/or their organizations (ANECOOP, COSANSE, Pastores de Aragon and Madremia) and processing companies (Ibérica de Patatas, Felix Palacios and Frozen 105) who supply in the wholesale markets, as well as with retailers (Mercados La Paz, Maravillas, Central, Colon, Lanuza y Vadespartera) who buy in the wholesale markets.

An information note on the wholesale markets selected for visits was prepared and shared with the participants and ADB before the commencement of the study tour. A detailed program of the study tour and the training program was also prepared and submitted by MERCASA for ADB's approval.

This report is a required output, as per the Terms of Reference related to the contract awarded to MERCASA. This document represents the final report and is circulated, as some conclusions and actions requires significant discussion and feedback from ADB and government officials. Final comments to this report by all parties will be incorporated during a short discussion period following its submission. Appendix 1 includes all training materials and presentations, and copy of the agenda.

2. CONCLUSIONS AND RECOMMENDATIONS BASED ON MERCASA´S EXPERIENCE ON THE PLANNING AND MANAGEMENT OF WHOLESALE MARKETS

During the study tour, Mercasa has had the opportunity to share its experience in the planning and management of markets.

Some lessons learned from the Spanish model of wholesale markets, based on Mercasa's 50-year experience, are described in this report. We also provide a number of recommendations that, in our opinion, can be useful, in general for the member countries of the Bank, and more specifically for the countries that have participated in the Study Tour; Kazakhstan, Nepal, Uzbekistan and Nepal.

2.1. Regarding genesis of Spanish model of wholesale markets

In Spain, as in most countries, commercial activity based on markets dates back to medieval times, or even earlier, when the city squares were used as market places. On many occasions, the birth of a city is simultaneous with, or even subsequent to the existence of the market place. Since it origins, the market has evolved conceptually and operationally.

Initially, the retail market of perishable food products took place in an open place, where food sellers were concentrated (normally selling fruit, meat, fish and spices) and other non-food household items (textiles, footwear, etc) to the inhabitants in an urban centre. This open place was usually located in an easy-to-reach point for all inhabitants, either on the town hall square, an area close to the church or on a long wide street in the city. Very often they were travelling markets moving from city to city providing a fixed “market day” at each place.

The first covered markets, inside closed buildings, as we know them today, did not arrive until the 19th century. In that era iron began to be used for the construction of stable, permanent market stalls.

At the start of the 20th century, during a supply crisis deriving from the population boom and with the objective of adapting commercial equipment to the growing population in the cities, there was an expansion in the construction of new retail markets to provide easy access for consumers to basic products. The organisation of food provision had the objective of ensuring daily, abundant and cheap supply to the population, as well as exercising control over the price, quality and weight of the goods by the public administrations. It was therefore a system based on the monopoly and rate of supply.

In Europe, after World War II, the focus of the food market was replaced by a wider commercial policy, and many cities set up wholesale markets to complement the role of retailers within the food chain commercialisation.

In Spain, this process was the result of a series of factors such as the lack of physical space necessary in the city centres because of the growing volume of operations and commercialisation of agrofood products generated by the increasing population and subsequent expansion of the cities and geographical area to which markets had to supply. Likewise, the impossibility of access to new traders in the markets because of lack of space, shortages and deficiencies in adequate facilities in the treatment, handling and conservation of food, which could affect public health, and also the location, in city centres, which caused massive traffic problems, also motivated the creation of new wholesale markets on the outskirts of the city.

Wholesale markets therefore became a physical place responsible for organising the distribution of food, especially perishable food, in the major cities and towns, generally in the outlying areas, and the role of retail markets are limited to the population of the area they are located in.

In the case of Spain, and also in many other countries, wholesale markets previously have evolved towards the wider concept of Agricultural Hubs / Clusters. In this way, the Hubs transcends the concept of the central market or traditional wholesaler and jointly integrate with the wholesalers themselves, other parallel added value systems of commercialisation. Thus the idea emerges for what has become known as Added Value and Complementary Activities Zone, for the development of other specific infrastructures and individualised for each type of company. All the above is completed with facilities and services to animate its commercial appeal and vitality.

In this way, the wholesale markets were complemented with a series of specialist installations for the development of commercial activities for distribution, logistics, transformation, with capacity for cold storage, conservation, handling and packaging which maximises the synergies of all the agrofood, fishing and meat sectors in the country, import and export of all types of fresh and frozen products, thus providing greater efficiency to the food sector.

The buying centres for the large food distribution chains (supermarkets) which can supply fresh product from the wholesale market, specialist companies that supply the Food Service Sector (HORECA channel) and other specialised logistic service companies specialising in food and user support: large refrigeration units, agrofood industry, transporters, quality control laboratories, packing companies, mechanical workshops, banks, restaurants, hotels, petrol stations, kindergartens, pharmacies, computer services companies, courier services, consultancies, institutional offices for the public administrations, etc, are the types of companies that are normally present in the Added Value and Complementary Activities Zone of the Agricultural Hub.

In Spain, the Hubs have been developed in phases. Firstly, they have transferred and constructed the Central Wholesale Markets, being the ultimate and main objective to concentrate the fresh produce to be consumed in its catchmetn area, and then, the rest of the complementary installations, having planned, reserved and provided a series of areas for it.

The development of each specific Hub, has depended among other factors on the degree of development of the local food value chain, on the rate of participation of local production in the supply of the catchment area, and type of retail trade, among other factors. That is, central markets are not static, but rather they evolve and adapt to new needs and functions.

The Hubs are therefore defined by a series of specialist installations, in which the physical and socio-economic characteristics in the area they are allocated in are taken into account, such as the range of products produced, commercialised and consumed in their area of influence.

They are organised through a market authority, who programmes the activities, coordinates the functions, decides on the use of methods, and provides full commercial services to the different specialities and types of traders that operate in it; markets, warehouses, refrigeration, classification and handling, financial services, etc, and who together with the establishment of a common commercial regulation to all the traders, create an optimum technical and economic framework in which private wholesalers and retailers, develop their commercial activities.

In Spain, the promotion, investment, construction and management of the Hubs are carried out with a majority participation of the public sector, principally by town halls and national governments, the commercial activity being handled by private initiative on the other hand. This conception is fundamentally supported by the demand of public interest for a certain control in the distribution and availability of regularly and permanently consumed basic food products. And also, the huge investments which are necessary to develop such infrastructures and the long time it take to get break even, discouraged the involvement of the private sector during the initial years, in the 70´s and 80´s.

2.2. Regarding conceptualization of Agricultural Hubs

Wholesale markets are defined as physical places where professional agents congregate to buy and sell products to other professionals. This is consistent with the chosen definition of wholesalers as traders who sell products to other professionals rather than to the general public. There are two main types of wholesale markets:

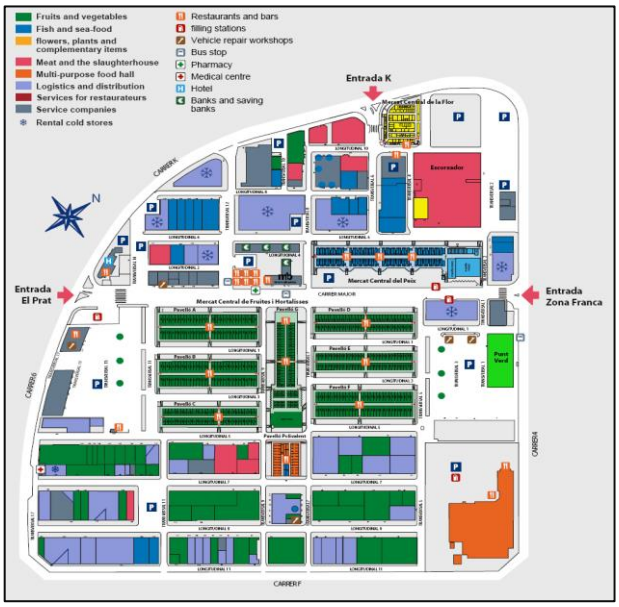
- In rural areas, assembly wholesale markets collect food products from producers and gather them in bulk. (In Spain, these markets were privatised and transferred to producers organisations and cooperatives in the 80s and 90s).

- On the other side of the food supply chain, terminal wholesale markets in urban areas de-bulk large shipments of products to sell to other institutional stakeholders who then retail to or prepare food for the general public. (These are the markets managed by MERCASA and have been visited during the study tour).

The principal characteristics of a Terminal wholesale market / Food Hub / Cluster include the following:

- It is administered by an authority responsible for organising the activities of the operators and which manages the public areas or common parts.
- The public authorities' proprietors and managers of the Hubs do not commercialise any type of food products themselves. Their main role is to facilitate competition and free trade among sellers, producers, wholesalers and diverse intermediaries and buyers: retailers, distributers or the HORECA sector (hotels and restaurants).
- It offers adequate facilities to independent operators; wholesalers, producers and other intermediaries, which are the private companies that commercialise, store, prepare and/or process food, generally destined to food retailers, restaurants, catering companies, municipal markets, etc.
- It facilitates shared services and facilities such as, storage and cold storage capacity, logistical, technological or financial facilities to wholesale operators with the objective of improving their efficiency and permitting them to be competitive in the distribution of food.

Figure 1: Map of Mercabarna



Source: Mercasa

Although logically each Hub responds in its composition, dimensioning, functionality and business model to the specific needs of each territory and population nucleus to which they are serving, they normally consist of the following elements:

- Fruit and Vegetable market, including potato warehouses and banana rippeners. In addition, within it, there are normally spaces and installations specifically designed for the farmers of production areas and the horticultural belts of the cities to be able to sell their produce directly to wholesalers and retailers. For the conservation of goods there are usually refrigerated chambers for daily reservation and in certain cases, general fridges.

- Fish Wholesale Market, equipped with a reception warehouse, conservation chambers, display and sale points and complementary facilities for loading and unloading, handling and internal transport.

- Slaughterhouse and Meat Market, with cutting and handling rooms, they used to be accompanied by an abattoir, but nowadays thanks to technological advances with cold storage, conservation and improved communications, the meat is generally slaughtered at origin and transported to the food Hub for cutting up and distribution.

- Trading halls for non-perishable foodstuffs.

- Freezers and Cold Storage, individual and shared.

- An Added Value Activities Zone or Complementary Activities Area (CAA) which includes classification centres, storage, cash and carry and all services which facilitate the activities of the users, packaging, sorting, and separation of loads and related industries, distribution companies,

- Administrative and Commercial Area, which includes management services, banks, catering, different types of agencies and other services required and generated by the activity itself.

In addition to providing these main infrastructures, the Hub also provide further services to tenants, such as:

- Cleaning and waste management, the Hub devotes a significant amount of means and resources dedicated to achieving the correct degree of cleanliness, and has its own personnel as well as external services for cleaning and collecting waste.

- Security and incident prevention service is also provided through guards, technology and vehicles as well as perimeter fencing and security.

- Sanitary and Veterinary control, either with onsite or external veterinary equipment.

- Maintenance, renovation, modernisation and the incorporation of new services; roads, accesses, car parks, green areas, signposting, supplies, sanitation, wiring, buildings and docks, loading bays, etc.

- Mobility, signalling of street and reservations in the main streets of the platform to optimise mobility on the roads and parking areas for easy manoeuvrability, and loading and unloading areas. Access is restricted to professional public (no end consumers are allowed).

- An It also provides other services such as training, information service and customer service for users, telecommunications, support for internationalisation, scales for weighing lorries and for users, common water supplies for water, electricity, gas, business centre, meeting room for hiring subject to availability, etc.

All of the above translates into a series of additional advantages for the companies that install and locate their business into the Hubs; privileged geostrategic location, cost and time reduction, transits are facilitated and a meeting point is offered to unite supply and demand. Moreover, the specialisation in infrastructures and services stimulates management efficiency in companies, who achieve this with a clear competitive advantage, and which also strengthens their corporate image.

Operating on the Hub, companies will be in a better position to comply with food security and traceability regulations and can create and develop new services and products with added value, with is not possible in old-style markets.

Also, advantages and new opportunities will arise for companies through operating out of a Hub:

- The creation of positive synergy between companies and the development of new product and added value services; frozen food, iv and v gamma (pre-cooked and cooked), transportation at the point of sale, etc.

- The appearance of operators who offer other services related to the management of the cold food chain, and packaging, etc.

- The creation of specific services directed at specific collectives, like the restaurant / HORECA sector, related to out of house consumption, and the potential for growth in the tourism sector.

- The creation of other services for special clients (the presence of cash and carry zones, multi use zones with more and different provisions offered, etc.).

- The increase of fresh food exports.

The end result of an efficient supply network is to become a commercial sector that is efficient, competitive, balanced and well-managed which permits a reduction in commercialisation costs and transfers these improvements to the consumers in the form of a better service and lower prices. More competitive trading also means greater competition between companies and commercial formats, improving the competitiveness of the economy by reducing the retails prices to the public, and limiting the negative effects that an excessive business concentration (based on supermarkets) could have on the aspects of food availability and competition.

On the other hand the presence of the public sector in the food distribution processes, converts it into a clear reference factor for the aspects of food safety and traceability, demanded by the public and consumers and mandatory for the national and international regulatory frameworks.

Moreover, efficient Hubs also have a social and economic effect on the city and the area of influence which although is not easy to quantify is however very considerable. These benefits refer to the foreseeable impact that a Hub could have for the social and economic development in a territory, in areas such as consumer information, the promotion of safe and healthy food, the fostering of fruit, vegetables, meat and fish consumption, the promotion of indigenous quality products, the support of the agro-industrial support and local products, tourism, the regeneration of cities, the integration of informal traders and other social and environmental benefits.

The final effect of the supply and demand relation and concentration that takes place in a Food Hub is the setting of suitable prices. Apart from the infrastructures which contribute a fundamental element towards competition and transparency. Lastly, a Hub and its links to the retail segment must aspire to achieving an efficient and effective system for wholesale and retail distribution and commercialisation of food products, guaranteeing the population, especially those with limited income, and continuous access to a variety of foodstuffs at acceptable prices.

We recommend that the whole value chain in the food distribution sector (producers, co-operatives, wholesalers, logistics firms, ancillary services, infrastructures, services and institutions supporting the food sector) will be concentrated in the same place, the Hub.

A Hub must aspire to becoming the sector's meeting place for businesses. In the first few years of operation, it must concentrate around 60-70% of the fresh food placed on the market and consumed within its area of influence. The wholesale marketing of fruit, vegetables and tubers or other fresh produce must not be allowed anywhere else. In the case of Spain, the development of wholesale activities outisde the Hub was prohibited by law.

This was undoubtedly one of the reasons that explain the success of the Spanish model. In practice, there was a monopoly of the public sector in the provision and development of these infrastructures and services. Another important aspect to consider is the necessary physical separation of wholesalers and retailers. In some countries, perhaps for cultural reasons, this separation is not easy. It is necessary to create a win win scenario for all the actors involved.

From an economic point of view the existence of hubs, markets and intermediaries enables different tasks to be carried out more efficiently:

- It reduces the transaction costs by reducing the number of trade transactions. The transaction costs of each contact between buyer and seller include the search for the customer and supplier, analysis, negotiation, order and transport and delivery.

- It encourages the provision of added value services which require a minimum volume of operations that would not be achieved through each individual transaction.

- It increases the size and depth of the market by increasing the power to attract customers who are prepared to travel greater distances in order to find a broad and varied supply, thereby reducing search costs.

- It guarantees and brings the supply closer from the place of production to sales points close to the place of consumption through the use of intermediaries specialising in transport and storage.

2.3. Regarding the added value, adjacent and complementary areas of Agricultural Hubs

An Added Value Activities Zone or Complementary Activities Area (CAA) is the area located around the Central Fresh Produce Markets subject to specific town planning regulations contemplating the construction of buildings and/or facilities intended for the manipulation, transformation and distribution of the said produce.

The aim of the CAA is to enable the construction of different kinds of facilities permitting companies to carry out activities related to food products, or the provision of services to other operators in the Hub. It is necessary to bear in mind that the success of this model depends on the activity of the CAA being always complementary to and not competing with the activities carried out in the Central Market. In no case will the CAA be allowed to carry out the direct sale of the produce placed on the market in the central markets. Its activities may include areas for storage, distribution, logistics, transportation, comprehensive services for vehicles, restaurants, banks, a medical centre, offices for advisors, lawyers.

The CAA arose in response to the needs arising for some wholesalers operating from the facilities of the Central Market. These medium- to large-sized companies need specific facilities i) to be able to carry out activities that add value to the produce, ii) to provide the services requested by their clients, or iii) simply to have sufficient space available for the storage of produce and so be able to respond immediately to unexpected sales volumes. For this reason, the wholesalers at the Market are generally the first to use the facilities provided in the CAA.

Inside the CAA, land is leased to interested private companies so that they can build facilities / constructions in accordance with their specific needs. Summarizing, the activities to be carried out at a CAA could be divided into:

- Companies rendering services to the Market (Refrigeration, Transportation, Logistics, …)
- Companies receiving services from the Market (Supermarket Procurement Platforms, Central kitchens, Specialist distributors, …)
- Companies rendering services to people and/or other companies (Restaurants, Financial Institutions, Machinery workshops, Service stations, …)

The most common and relevant activities to be taken into account as the basis for the development and consolidation of a CAA, among others, would be as follows:

Wholesalers operating at the Market:

We have already mentioned above that the Market operators themselves naturally represent the prototype of wholesale operator needing to have facilities close to the Market so as to enable them to ensure sufficient stocks to cover the needs of their own market stalls. In parallel, it may carry out packaging activities, production lines for the selection, sorting and washing of produce, as well as the preparation of orders for the various distribution channels.

Refrigeration Facilities:

Through the application of criteria based on quality, hygiene and health issues, and the lengthening of the shelf life of the produce, it is essential for the Market to equip itself with refrigeration facilities.

Nonetheless, and bearing in mind that Market stalls have limited size and are intended for sales operations rather than the conservation of produce, as defined in the regulations and as is advisable in line with MERCASA profitability ratios, the CAA is where we will find the largest refrigeration facilities, which may be for own use or else designed to offer this specific service for the rental of chillers and/or comprehensive logistics services to other companies, depending on such parameters as turnover, produce type, distance to the destination, etc.

Transformation and preparation of produce:

Bearing in mind that the Hub has to be capable of responding to the needs and demands of users in different sectors and distribution channels, the CAA is the place in which to encourage the installation of companies that, by taking advantage of the proximity of the Market (Fruit, Meat or Fish), i.e. raw materials, are devoted to the main activity of manipulating and transforming produce in order to add value.

In this line, mention should be made of companies dedicated to handling and transforming produce depending on the specific demand from their clients, generally from the Horeca channel, and in order to save them production processes and therefore costs. Fourth- and fifth-stage processing are examples of such activities.

Logistics and transport

The main goal of the transport and logistics companies located in a CAA is to offer solutions for the companies in the Hub that they themselves would not be able to envisage. The different kinds of transportation to be found are:

- Internal logistics (maintenance machinery):
    - Internal transportation inside the Hub. From the CAA to the Market and vice versa.
    - Transportation inside the Market, between stands.

- External logistics:
    - Transportation for last-mile distribution to the city
    - Medium-distance haulage (40-50 km)
    - Domestic and international haulage

Generally speaking, following the construction of a new wholesale market, it is necessary to consider that companies that had not previously needed to use transport and logistics services will begin to need them after the inauguration of the new market, normally located further away from the city centre.

Buyers/Procurement Centres:

Changes in consumers' habits, the growth in areas devoted to the tourism industry, exports, alterations in domestic arrangements and family units, the changes in the roles of certain members and the increase in the life expectancy of the population, all lead to the emergence of new customers, as well as changes in business structures and distribution channels, which in turn affect the demand for new needs and new services.

For this reason, the CAA has to be ready to adapt to the new challenges and demands from:

- Major Distribution (Supermarket and Hypermarket Platforms): The benefits of having these platforms present in the CAA are considerable: on the one hand, the supplier ensures the proximity of a potential high-volume purchaser and, on the other, the Platform guarantees the supply of the produce it needs in the necessary amounts and with the quality standards defined in advance. If these parameters are not met, the purchaser has the ability to react quickly thanks to the existence of other suppliers located at the Market's facilities. This therefore gives clients flexibility for their planning and procurement management as well as a reduction in their purchase costs (due to supply-side concentration), and supply-chain logistics costs.

- Major Distributors and Import-Export Companies: the availability of facilities in the CAA will favour the possibility of concentrating the purchases made from different Market operators/purchasers for subsequent re-distribution to geographical locations far away from the Hub. Similarly, the figure of export companies will need facilities of this type to handle and prepare the produce according to the parameters set by the destination market.

- Horeca or Food Service Channel: The importance of such sectors as the hospitality and restaurant industry as well as industrial-scale kitchens, some linked to the growth of the tourism industry, has led to an increase in the demand for pre-transformed produce (stage IV and V products), specific formats, as well as speedy, secure supply and an effective transport service meeting health standards.

  These activities, taken as a whole, can only be offered from facilities outside the Wholesale Market by companies specializing in this kind of business.

- Distribution to traditional retailers and self-service outlets: Similar cases can be found in this area, as some (many?) purchasers currently going to the Market to acquire their merchandise can find it more beneficial to make these purchases through a specialist third party, or simply by reducing their transport costs by contracting logistics operators.

Regarding organisation, it is important to establish certain general ground rules for all users operating in the CAA. These agreements must focus on ensuring their orderly operation, respectful of the rest of the operators so as to avoid situations of unfair advantage. The areas that must be reflected in these rules, by way of example, would be as follows:

- Waste management.
- Occupation of jointly-owned spaces.
- Cleaning of privately-owned roads.

- Parking areas for loading and unloading.
- Traffic rules.
- Acceptance of the Regulations for the different Markets.

Where necessary, a Regime should be established for the imposition of penalties so as to guarantee compliance with the Rules established and the agreements reflected in the land assignment contract. In any case, the operators in the CAA must be able to work with flexible and extensive activity schedules enabling them to meet the needs of the different types of clients, both current and potential.

Our main recommendation at this point is to begin the analysis of the possibilities of locating value-added companies and especially supermarket chains, as soon as possible, in parallel to the analysis of the needs of wholesalers.

In Spain, when the Hubs were conceptualized and designed, there was no supermarket and it was not given the importance that it has had. Perhaps one of the limitations of the model is precisely a smaller presence of supermarkets in the Hubs.

Given that the public authorities have the legal capacity to grant licenses for supermarket activity, we recommend negotiating with them their location in the Hub (of their buying platforms), in exchange for a certain flexibility in the licensing of supermarket opening licenses in the city.

2.4. Regarding the location of Agricultural Hub

An analysis of the best possible location for the Hub, should be undertaken. A large part of the operation and success of the Hub is going to depend largely on its location. In the analysis of the conditioning factors taken into account for the study of the location and inter-dependence between them, we should differentiate two type of criterion.

On one hand the political-social and urban conditioning factors and on the other, a series of selection factors such as cost minimisation for transport, topography, geology and geotechnics, communication infrastructures, service infrastructures, hydrology, climatology and of course the cost of the land.

The formulation of the selection criterion, as well as its evaluation hierarchy must be subject to an in depth study, which should result in the identificaction of suitable for the development of the Hub. Notwithstanding the above, we provide with certain comments relating to the criterion that must be followed for the selection of the location.

Evidently, the convenience of locating a Hub in an area of vast expanse and well connected is founded on the political guidelines. On the other hand, the urban plans for the cities must mark a

coherent commercial urban structure for the city where the Hub would be located, determining and foreseeing the food supply needs of the city/ consumption areas, the importance of land uses and its infrastructures.

Among the other location factors, the minimisation of transport shortage suggests an ideal land location in a point such that the distances, in terms of time-cost, from production areas to the consumer centres, multiplied by the commercialisation volumes, give a minimum value, intervening in the appreciation of these costs the different qualities of communication routes between the production areas, the Hub and the urban nucleus.

The location of the Hub within the urban area should be a balance between the needs of the producer using inter city transport routes and those of the retailers who have to collect produce from the Hub. A common criterion is adopt a maximum travel time of around 30/45 minutes (depending on the size of the city) for retailers to reach a Hub.

The study and analysis of the factors relating to the topography, geology, geotechnics, access and communication infrastructures, transport roads, electricity services, water, cabling or the hydrology and climatology analysis must be extensively analysed in a technical project.

In relation to the topography, it shall be valued very positively the fact that the land selected requires minimum levelling, and with minimum land movement foreseen. Generally speaking, we would advise against dismissing soils containing expansive clays, due to the high cost of special foundations, or the presence of chalk, which would involve more expensive construction solutions. Naturally, it is always possible to construct building and housing developments on this type of land, but always taking the necessary construction precautions and assessing the repercussion in terms of costs. This corresponds to a study of the geotechnical problem in depth.

The study on communication infrastructure, in its double, current and evolutionary aspect constitutes nevertheless one of the highest deciding factors on selecting the location of the Hub due to its intrinsic nature, which ultimately is a transport and logistics centre. Therefore the roads are obviously one of the most important factors for determining the location of the Hub, its links to the points of origin of the supplies.

With reference to the service infrastructures, such as water supply, the availability of the flow rate, pressure, distance to connection point or regularity of service should be assessed. This analysis includes the study of factors such as the point of discharge, alimetric analysis, length of collectors or depuration and effluent characteristics, etc.

In addition, the hydrology, pluviometry, hydraulic resources, dominant winds, their variations, seasonality and the temperatures are other factors that need to be taken into consideration in the location of the Hub.

Finally the cost of the land is undoubtedly another relevant factor when deciding on the location. Therefore it is a factor that needs to be studied fully and cautiously.

2.5. Regarding the sizing and functionality of Agricultural Hubs

The main parameters that define the model and sizing of a Hub and its functionality are:

- the (future) volume of operations expected,
- the type of operators,
- the types of products marketed,
- the type of activities to be carried out: trading, logistics, transformation and/or processing, etc.
- the volume of investment and the budget available for carrying out the project,
- and the form of the site for the location of the Hub.

The activity of the wholesale sale of food products is not an exception to the general rule regarding physical premises, according to which all activities require premises in order that they may be carried out. In this specific case, the main market activities are wholesale transactions involving food products and it is precisely this parameter that should determine the space that is required.

Nevertheless, the volume of operations is not an abstract or static item of data that is readily available. In a project of this kind, in terms of the volume of investment expected and the timeframes in which such investments are expected to come to maturity, a lifespan of around 30-50 years, and considering the evolution that is expected in the wholesale and retail food sector, it is necessary to estimate future volume of operations and plan what participation (market share) the Hub will have in supplying its territorial sphere of influence (catchment area) in the future. Therefore, the first figure that needs to be quantified is future consumption in its catchment area.

Future consumption should be projected on the basis of estimates for current consumption, according to two basic figures: population and income. The Hub's share in supplying this demand is then estimated, taking into account the entire food value chain, the retail structure in the city and country, the level of development and shopping and consumption habits.

Rapid urbanization, increases in income, changes in dietary preferences, often along with western line, together with changes in work patterns, particularly the employment of women, the impact of technological innovations in post-harvest handling, food processing and storage and the growth of supermarkets and hypermarkets are also factor which have an impact on future volume of operations of a Hub.

We strongly recommend to set up the objective of reaching a minimum 60-70% market share or volume of goods that is expected to go through the future Hub. The next step after that consists

of calculating the surface area requirements (for expected volumes), which should be done based on the following parameters:

i) size and number of operators,

ii) spatial occupation rates, which vary depending on the type and condition of the products,

iii) product rotation rate,

iv) degree of product standardisation.

On the basis of the data regarding trading volume used for sizing analysis, as described above, standard surface unit performance or productivity ratios are generally applied, taking into account the number and type of traders, in order to define the net retail surface area, and of the other non-commercial spaces that are necessary in order for the Hub to run smoothly.

Finally, the analysis of the commercial surface area requirements for wholesale trading is complemented by a study of the surface area requirements for the other added value and complementary activities – processing, distribution, trade, roads and storage - using commercial performance, surface area and cost ratios.

We insist that a Hub, a modern distribution platform, goes beyond the framework of a traditional central market, and that it should include parallel systems for wholesalers along with the latter. Therefore it is necessary to develop an adjoining area in order to provide facilities for these systems to be used in distribution, logistics, transformation and processing, or export. It is also important to set up a number of facilities and services in these Hubs in order to give them a boost and make them broadly self-sufficient in shared activities. These facilities and services are therefore analyzed in the areas that are known as added value and complementary activity zones and the administrative area.

Notwithstanding the foregoing, we can recommend this development should be planned in stages (also to mitigate risks). This means that first target should be to make a preliminary decision on the size of the future fruits and vegetable (and other perishable products, if commercially feasible) central market. Second phase could consist of estimating complementary activities zone needs and finally the logistics and non-food related needs of the Hub.

Current consumption is obviously one of the basic factors to be taken into account, from the perspectives of both quantitative sizing and diversification, as both have an impact on product distribution. Therefore, in order to look ahead at trading prospects, it is necessary to predict consumption in the sphere of influence of the Hub.

One of the difficulties in many developing countries lies in the lack of quality data regarding the specific disaggregated consumption of foodstuffs in households, and in the hotel and catering sector, both in the metropolitan areas and in the country as a whole.

Based on our experience, in order to calculate the surface area needed, the concept of performance (or as it is sometimes referred to, productivity), is needed as an analytical instrument for calculating the surface area that is needed.

Commercial surface area performance expresses the number of tonnes traded on an annual basis per square metre of commercial surface area, i.e. deducting communal areas and where goods are on display. Once the commercial surface area performance figures have been calculated for the various wholesalers, the net commercial surface area required is obtained, by multiplying these figures by the figures for annual trade.

This ratio is affected by a high number of parameters, such as the type of product, trading level, stock rotation, mechanisation and technology, wholesaler growth, flexibility in design, etc. Therefore, empirical procedures are often used to obtain the value of this ratio.

In Spain, for Hub where the volume of tonnes traded is between 450,000 and 550,000 tonnes per year, located in cities with a sphere of influence of around 3,000,000 inhabitants, this mean gives a ratio of around 20 tonnes of fruit, vegetables and potatoes traded per square metre and per year. This ratio is valid for operators that sell a minimum of 500 tonnes per year, a circumstance that may not be applicable in the case of some developing countries.

We insist that it is necessary to consider how sizing is planned from the perspective of time, taking into account the timeframe for investments to mature and the expected increases in trader productivity. In this sense, our experience shows that traders can increase and reach a productivity ratio of 25 tonnes per square metre and year within a 20-year timeframe.

For this volume of commercialization, around 500,000 tons, the space needs for the markets and its supporting infrastructure, can be around 25 hectares, being necessary to anticipate others between 25 and 50 hectares for the development of activities of value added and future growth.

2.6. Regarding feasibility and design of Agricultural Hubs

It is necessary to confirm whether the development of a multi-function food and agro wholesale market / Hub, which format would be visualised as providing facilities for trading, distribution, processing, import-export and logistics activities, could be a necessary tool to strengthen and improve the efficiency of the agro food distribution sector and feasible.

Before detail design development can commence, the first step should be to formulate a feasibility analysis and an overall master plan which could meet the project goals, both functionally and efficiently, and solves the problems that have been identified, including commercial and technical, as well as any budgetary constrain.

The mere provision and development of new physical facilities will not guarantee any benefits, if not accompanied by sector support programs (most of them analysed in this report) and appropriate institutional and management change. There are also other risks which could also influence the overall design of the project that are needed to be identified. Also the adoption of erroneous commercial and / or technical parameters could lead to the failure of the future Hub.

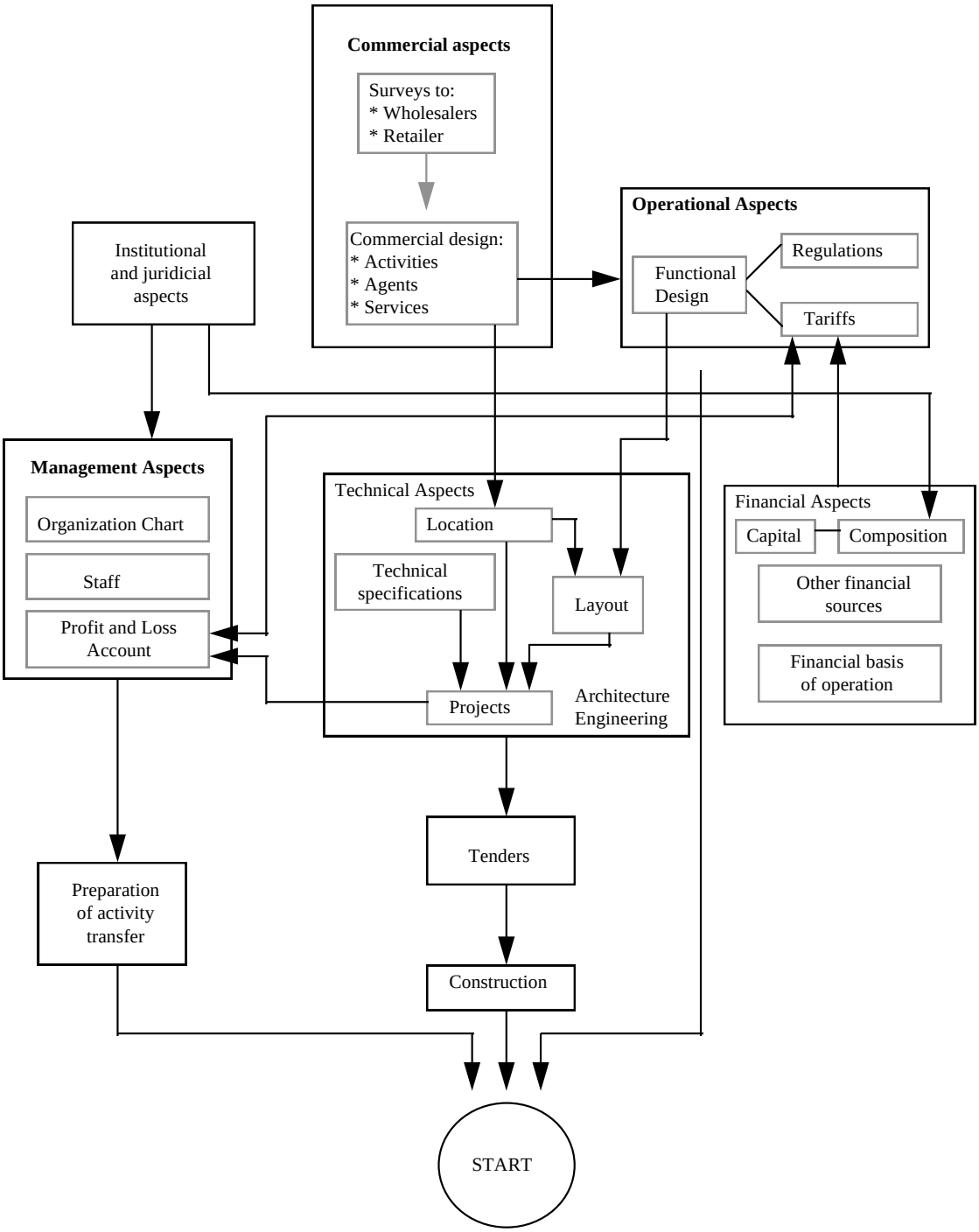
Consultation procedures with all actors affected by the development of new facilities, including farmers and its associations, traders, importers, exporters, supermarkets, industry, producers, government agencies, and of course the Ministry of Agriculture / Trade / SMEs / others will need to be held in order to define development priorities and to validate proposed facilities which the future Hun would require.

It is also essential to define a clear set of objectives both at national and sector development at project level. The first regards the benefits that a project of this type could bring to the country as a whole and to the agriculture and commercial and logistic sector; increased production and exports of fresh food, related increases in farmers´ income, imports´ substitution, lower consumer prices, reduce variation in seasonal fluctuations and post harvest losses, strength the local food industry or to position the country as an important transportation and logistic hub. In our opinion, the development of a Hub should become a project of national interest, if feasibility is confirmed.

At a project level, collection and analysis of further data is required in aspects such as estimates of throughput, size and number of operators and/or wholesalers, their daily trade patterns, variation in trade between seasons, space standards and design trading units, road and access system, car and lorries parking facilities, cold storage capacities, food industry needs, engineering work and design, or local costs and budget, jointly with a financial and economic analysis to foresee expected returns of the project which could confirm feasibility and justification.

The following chart shows the set of activities to be included in the development of a Project of this type.

Figure 2: Septs for the development of a wholesale market



Source: Mercasa

2.7. Regarding how farmers get involved and complementary measures, support programs and policies for the successful development of Agricultural Hubs

One of the specific challenge that impede the fruit and vegetables (and other perishable) chain in many developing countries where we have worked in the past, is that its growth is limited by absence of any significant economies of scale among farmers. It is difficult to realize cost efficiency measures and profitability unless a form of consolidation occurs.

For this reason, we understand that first of all, it is necessary the reordering of the production and marketing at the origin of the food value chain, which should be done based on the establishment of consolidation centers, storing and handling, located at production areas.

These centers should serve the function of collecting and concentrating the goods at origin, which would lead to the transportation from farms to these centers, transportation that would in turn require the use of adequate packaging / containers. One of our recommendations in this respect, is to "oblige" or facilitate to the producer the use of suitable packaging for the handling, transport and storage of its products. In Spain, the sale of bulk product is prohibited in the Hubs.

The containers most used for fruit and vegetables are those that are 60x40x30 cm, 50x40x30 cm and 40x30x30 cm, with the capacity of approximately 20 kg. They should meet the first condition that they use the available space in a pallet (in Spain, the dimensions of a pallet are 100x120x15 cm). The use of palletization presents a series of advantages, as well as being and excellent tool to reduce post harvesting losses.

- It simplifies handling.
- The storage can be stacked higher with easier access, which in turn allows for taller refrigeration chambers/freezers.
- Manual labor is reduced.
- Less time used, up to half if elevated forklifts are used.
- Easier to control stocks and merchandise flow in general.
- Easier and more convenient transport.
- All of these things will bring a reduction of costs to the commercialization process.

These centers should also provide the possibility of preparing products, i.e.; sorting and grading, cleaning, packaging, storage, etc. As well as sales and distribution, which requires a direct commercial service which could provide or access the Hub and / or other distribution channels; the tourism sector, supermarket chains, the processing industry, etc.

The centers should have chambers for the preservation of products, some for medium-term conservation and some for daily reserves, for the vegetables that are to be stored for a short time.

The location and sizing of these centers needs to be carefully studied, as well as their space and equipment requirements for food handling and storage, and should consider the strong seasonal nature of production as well as the need for production lines for the handling of products.

In Spain, as far as the payments to farmers is concerned, a liquidation system that functions with the sale price should is used in most collection centres / cooperatives. One should be aware, however that with this system, the payment to the farmer is delayed in relation to the moment of delivery, which could create a limitation if the farmer has the option to sell directly to another buyer. Because of that, a flexible system should be established so that the delay in pay be the minimum possible.

In Spain, the liquidation price to be paid to the farmer is calculated in function of the average price obtained in a determined period, for example a week, subtracting the transport and manipulation costs, as well as a fee- in general a percentage- justified by commercial and administration costs.

A frequent problem with these cooperatives comes from when the product received from each of the farmers is of distinct quality. The use of these economies of scale requires, on the other hand, that at the arrival to the center, all the individual shipments are brought together to be handled and sold together.

Good, just as important, or even more important than the facilities described above are the organizational aspects. Our recommendation, for the long term, is that an organization, based on cooperatives and farmers associations, will be in charge of the efficient management of these centers. This is the most tried and successfully proven system in most countries.

The cooperatives are based on principals accepted by everyone; democratic control on the basis of one man, one vote, distribution of benefits in function of the participation in the activities, etc. There are also, according to the laws established in each country, similar institutions, like producer associations. In this report, we use the term cooperatives to refer to any of them.

One of the cooperative objective´s, among others, is the concentration of the supply, providing more power for getting contracts and the possibility of more gains for the farmers – share resources and reduce costs. Because of this, we recommend, if feasible, the creation of a large and unified cooperative of farmers (second tire), and that ideally most of the producers in the region / country should be integrated into the organization.

Also, mixed companies could be established (sort of public private partnership), where municipal governments and agricultural private businesses would both be present along with the National bodies; Ministry and other institutions, such as a bank.

The temporary participation of the government (it would be desirable that this participation be the majority) guarantees public interest, taking responsibility as it were, for an efficient management and the evolution toward a future solution. This would also secure the coordination of other agricultural policy instruments.

Nevertheless, being realistic, it is also convenient to keep in mind the limitations (as experience in Spain shows) related to agricultural cooperatives, among others, those are:

- One principal frequently included in the principal of cooperatives is that of the "open door," It means that any farmer can enter into the cooperative, whenever he/she promises to follow the rules. This can create problems if there is a limit on space in the facilities and in the services provided, so that the "open door" policy can´t always be upheld.

- Even when the "open door" policiy is met, there remains the problem caused by fluctuations in production from one year to another year. The cooperative is required to sell all the product and all grades of all its members, which constitutes a handicap, especially in surplus situations, whereas private companies simply buy the grades and quantities of interest to them according to the situation of market.

- Apart from the necessary financial requirements for the investments, working capital financing is a very important aspect in cooperatives. If the cooperative does not have the financial means to pay the value of the product, or at least a major portion thereof, the farmer at the time of delivery, in many cases prefers to sell it to a private company if it receives full value, albeit at a lower price.

- In general, the problems of organization and management are, in a cooperative, more difficult to resolve than in a private companies for various reasons related to characteristics of the membership; a high number, different interests for each member (for example big farmers and small ones), lack of business education for the members, etc.

- Individuality of the farmers. The operation of a cooperative requires the willingness of farmers to become members and engage in the common problems. A cooperative won´t work if it is perceived by its members to be uninvolved in their interests. The organization has to be made in the "cooperative spirit", which is not created from overnight, but involves a process of adaptation and pedagogy of change which requires a longer or shorter time.

Also, in practice, there are a number of reasons against the operation of the proposed system, especially in the beginning, some of which are:

- Routine behavior by farmers and other actors in the chain.
- Distrust of innovations and little ability to adopt them.
- Distrust of government.
- Defense of vested interests, etc.

Since we are talking about a project with a major investment and a complex organization, appropriate measures need to be taken in order to eliminate factors which impede operations. The most effective way to make the system work is certainly by making it mandatory for all farmers and traders, but this does not guarantee its effectiveness. Here are some steps / recommendations considered necessary

- Information and awareness campaign directed at farmers. In this sense, extension services have a major role,
- Information campaign directed at wholesalers and retailers. It seems clear that wholesalers and buyers are benefited because they are offered a focused and consistent product which is not available at this time,
- A number of stalls at the Hub have to be allocated specifically for farmers themselves and their associations (10-30%),
- It is necessary to facilitate the granting of credit for investment and working capital,
- Exemptions and other tax incentives,
- Investment grants,
- Training and selection of professionals for all technical and managerial positions of cooperatives (placements and participation in courses in other countries for training),
- The transition from short term to long term should be done in a progressive way.

With regards to agricultural marketing, other complementary actions, are also recommended. Among others:

- Standardization. It would be advisable to proceed to the establishment and enforcement of trade and marketing rules as a basis for classification of various horticultural products. Standardized product circulation presents a number of advantages; promotes transparent pricing, it allows the price to better fulfill its function and transmit the consumer´s taste to the farmer, it facilitates the sales operations, allows the formation of large lots in the centers of origin and limits fraud. Rules must be binding, although an interim regime for several years can be established.

  Also, the standards allow producers to describe their products and give indications of their market value without requiring physical presentation. They include a definition of the produce, some quality requirements, sizing, tolerances, packaging and presentation, and marking. This system also reduces delivery times, administrative costs and overheads for

exporters and importers, improves the quality of products, and adds administrative certainty for the exporter.

- Price and market information. It is necessary to improve service and the dissemination of market information (also through social networks) to all operators thereof; retailers, wholesalers, transporters, farmers, cooperatives, about the prices of horticultural food products, quantities, forecasts, etc. This information, to be effective, would require that the product was normalized. This should be a public service provided by the authorities.

- Management and advice on crops. It is also a function of government to establish a system of crop management that would mitigate or avoid the existence of strong surpluses or deficits. This would involve setting surface goals for different crops (especially in countries with import substitution strategies).

- Extension, research work and experimentation in varieties and cropping systems (agriculture organized, greenhouses projects such great potential) is required.

- Introduction of quality management system. Good manufacturing process, HACCAP, Globalgap, ISO, others. New trends in world food consumption are driven by the demand for products that must meet increasingly stringent health, safety, and quality standards. This is a result of a trade environment that has become more exacting and competitive through globalization and economic interdependence, which has resulted in increased consumers' sensitivity to the conditions under which food is produced and sold. As a result, consumers are demanding the highest guarantees to ensure that the food they consume is hazard free.

  Many countries have established guidelines, standards, regulations, and systems to ensure that food is safe and suitable for consumption. This is a major challenge for developing countries exporting companies. Furthermore, without the necessary Global GAP certifications, it will be difficult for developing countries producers to break into high value markets as exports. This is due to the current requirement from international wholesalers to purchase only produce that has been certified according to Global GAP.

  To safeguard consumers' health and gain their trust, small and medium sized agribusinesses must tackle many challenges if they are to implement good practices and increasingly comprehensive and complex food safety management systems. Regardless of whether their products target local or international markets, small and medium-sized businesses have the same responsibilities as any large food company.

Safety is of key importance in the food trade and although food safety today does not offer a significant competitive advantage, no business can produce food without following good manufacturing practices.

Good manufacturing practices are a set of technical principles and recommendations used in processing food products in order to guarantee that they are safe and suitable for consumption, and to prevent contamination or adulteration. They are also sometimes called “good processing practices” or “good fabrication practices”.

Training in food safety and quality management systems to agrifood enterprises and organizations should be promoted to facilitate the implementation, evaluation, and monitoring of those systems (GAP, HACAPP, others), and to ensure continuous improvement of enterprises’ products and operations. The aim is to improve the enterprises’ possibilities to access markets whose commercialization and export requirements include the existence of food safety and quality systems.

The principles of food legislation seek to guarantee food safety and to protect consumers’ interests. To this goal, it is necessary to know and register all actions taken on a product from the start to the end of its supply chain. This is known as Product Traceability.

GlobalGAP is the worldwide standard for good agricultural practices. It is a not-for-profit organization that sets voluntary standards for safe and sustainable agricultural production worldwide and more and more producers, suppliers and buyers are harmonizing their standards to match GlobalGAP.

GlobalGAP has a standard on fruits and vegetables covering soil, management, substrates, pre-harvest controls for plant protection product application, organic fertilizer application, pre-harvest check, harvesting, final produce packaging at points of harvest, produce handling covering hygiene, sanitary facilities, packaging and storage areas, quality control, pest control, post-harvesting control and post-harvest treatment.

There is a need to promote the adoption of GAP criteria among farmers in developing countries. Besides a tool for cleaner and more sustainable production, GlobalGAP certification is also a marketing tool to access the EU and international markets. Trainings on good agricultural practices should also be available, as well as training and technical assistance on quality management systems.

Our experience has taught us that (i) the Hubs do not solve all the problems of the deficiencies that a country's food chain may have and (ii) that for the Hubs to be successful it is necessary to implement a set of support policies and programs, some of which have been described in the previous chapter.

Our recommendation is to take advantage of the development of such a project, to use the Hub as the main tool to centralize and implement the aforementioned support policies and programs (regardless of whether they are public or private Hubs).

Developing the policies, institutional frameworks and capabilities are required to create enabling environments for farmers, processing companies and exporters, as well as a new mindset and capabilities in producers, by strengthening their individual and collective capacity to supply markets and compete successfully.

Also, the promotion and development of more transparent and efficient local markets, and the development of mechanisms and tools that will reduce risks and permit small-scale producers to establish more links with markets, are among the priorities for many governments.

As mentioned, most developing countries agriculture sectors are embedded with low competitiveness and insufficient organization of marketing, required post-harvest and trading facilities, technologies and equipment. Driven by large demand of the fresh market and processing industry for export markets, agricultural enterprises and processing companies have opportunities to flourish. As the quality and safety requirements have to be fulfilled through producer organizations, cooperation between small producers in Producer Organizations and/or cooperatives have to emerge to achieve future growth.

2.8. Regarding financing of investment

The financial profitability of a project of this type is low / medium-low, being internal rate of return between 5-8%. This rate is below the profitability expected by the private sector. This is one reason justifying public investment. In addition the return on investment occurs in the long term, from 12-15 years after operation. The private sector is generally more interested in projects whose profitability can be achieved in a shorter term.

Agricultural Hubs projects need definitively public contributions for their development. Normally, a project of this type generates sufficient resources with its cash flow to cover the operating costs but it does not generate enough resources to meet loan repayments (in the case of having to finance 100% of the investment with a bank financing.).

The finance needs are very high, mainly because the investment is large and because loan repayment instalments (interest plus principal) are also very large. Public resources are limited, as is the private sector's ability to pay to co-finance the project's development. Using debt also runs into limiting constraints, summarized in financial amortization deadlines that are far shorter than the working lives of the investments to be made.

The profitability of such a publicly-funded project must be measured through monetary factors and also by applying social criteria, which would be constituted by the direct and indirect benefits potentially arising for society. In other words, there must also be a social benefit goal. Externalities and other advantages the project can provide (among others: food security, harmlessness, price stability and transparency, commercial organization, the sector's growth and development, etc.) must also be taken into account in the feasibility analysis and are the subject of a separate chapter.

Before proposing the execution of a Hub, it is recommended to make sure the necessary public contributions are in place to pursue the project, and this is justified by the fact that the funding is intended for the provision of a public interest service. In principle, one route for funding is through the formalization of a loan between the country's Government and a Multilateral Organization, giving a sovereign guarantee, in order to carry out the project.

A sovereign guarantee is the collateral that the Government of each country has to provide as part of its undertaking to repay the loan. Normally, such a loan requires a bill or act of parliament to have been adopted by the country's Legislative Assembly and it is consequently subject to consideration by the members of parliament. Repayments generally come straight out of each country's general budget.

As a complement to this, other sources of funds are recommended as compatible and able to supplement the preceding formula.

- Public contributions, which may be given in any of the following forms:
    - Capital, as a non-reimbursable contribution, or
    - "Quasi capital", understood to mean subordinated debt at a 0% interest rate and with an extended repayment plan.

The proposal to instrument at least part of the public contributions as debt means that, in the long term, once the Hub generates surplus funds, these can be transferred to the public sector as repayment of this debt. In this way, we avoid generating a situation in which these surpluses, through having no planned destination or through the lack of any legal mechanism by which to give them a destination, cannot be transferred to the public sector.

It is even recommendable, insofar as the project is expected to be able in the long term to reimburse all of the public contribution, for all of the amount to instrumented in the form of debt or "quasi capital".

Furthermore, consideration can be given to having this debt, starting from a particular moment, pay interest conditional on the existence of sufficient funds and the fulfilment of the conditions established in connection with the indebtedness.

The endowment for this debt could be instrumented through a financial trust receiving public contributions, for example from a public tax fund, an option that does not generate any impact on the tax deficit for the year in which it is implemented.

- Long-term debt under a Project Finance scheme.

Public contributions can be arranged so as to minimize their size within the possibilities offered by each project. Although a project like this normally does not generate funds for the repayment of the principal and interest on a loan for the entire investment, it does generate enough funds to be able to reimburse the principal and interest on a smaller loan.

Thus, a Hub is able to take on long-term debt within a Project Finance scheme consisting in obtaining and structuring funds in order to finance an economically independent investment project in which the lenders are basically interested in the project's cash flow as the source of the funds to repay the loans and the return on the investment.

This implies that this debt will have to be paid through the generation of operating funds from the Hub.

In this way, the size of this debt must be adjusted on the basis of the Hub's ability to generate operating funds, calculated on the difference between rental income, access fees and other revenues and its operating expenses (personnel, outsourcing of services, supplies, maintenance and others).

- Medium-term bridging loans to be cancelled with the collection of entry fees.

This financing is viewed in connection with the payment by operators of the entry fees to locate their businesses in the Hub. Those companies setting up inside the Hub have to pay, in addition to the monthly rentals for the facilities they occupy, as a pre-requisite for their installation in the Hub, an initial price or entry fee per operator. In order to comply with this condition, operators could opt to pay it directly to the Hub's Management Body or else arrange a loan with a financial institution in order to obtain a credit for the financing of their entry fees.

The collection of these fees by the Hub´s Management Body then occurs effectively as and when the facilities are available on the market and the operators install themselves there.

So, as a means of financing the initial works, the recommendation is for the Hub's Management Body to request a loan from a financial institution in order to cancel it with the entry fees collected, a technique known as "bridge financing".

In some cases, it will probably be possible for the Hub's Management Body and the operators to agree for the latter to pay the entry fee in advance of their actual installation, at a discount. Such payments will then be used, at least partially, to replace that bridging loan, reducing the loan to be requested from a financial institution.

On the other hand, it is felt to be necessary for the operators to have access to long-term financing from a financial institution in order to meet the payments of their entry fees.

Another recommendation has to do with the analysis of the option for the total construction of Hub In this option, it might be appropriate, furthermore, to consider executing the project by stages.

The project's financial analysis has to be performed assuming that all of the works can be carried out together, in such a way that all of the land and marketable spaces in the Hub are exploited with adequate occupation levels. This produces an increase in the generation of operating funds and determines an improvement in the project's profitability considered as a whole, versus the option of building only part of it. This, in most cases, results from the increase in the marginal revenue over and above the evolution of the marginal cost of achieving the Food Supply Centre's full development.

The conclusion is clear: the project's financial profitability increases as and when the maximum occupation of the Hub is achieved, although it is necessary to foresee that this scenario is not going to be present in the short term.

A comment is made about the cost of "not doing anything". Whenever an old market is unable to offer any more possibilities for the sector to develop, it can still maintain its operational status for some years, with the status quo remaining the same but some companies may decide to start other ventures similar to the concept of a complementary activities and added-value area alongside the Hub, and there is obviously a risk that other businesses can organize and explore entrepreneurship options entirely within private initiatives, should the public sector decide not to go ahead with the project. In this hypothetical situation, there is a clear risk that some losers may emerge, namely the smaller operators with limited financial capacity or the producers, and part of the retailers, street market vendors and less competitive operators.

Another recommendation has to do with the incentives needed to attract users to the Hub. A series of recommended incentives is given below and could be adopted by the management body for this purpose, although others could also be implemented:

- Advice and support for operators in the process of obtaining tax benefits and incentives.
- Training and specific technical support for operators to improve their businesses and move into the Food Supply Centre.
- Advice on the administrative steps required.
- Implementation of financial support and advice programmes for their use.

Operating income and revenues

The turnover of the company in charge of the Hub management will come from warehouse rental, income regarding to admissions or entrance in the Market, and other incomes which are detailed below.

- Income from rental

Income from rental correspond to income obtained as a consequence of renting warehouses built (Fruit and Vegetable Market, Meat and Fish Areas, Non-Fresh Food Building, etc.) as well as reserve plots where other complementary business can be developed, whose construction costs will be afforded by the beneficiary of each plot (dairy products, drinks & wines & oils, hotel, Truck Transportation Centre, etc).

On the other hand, with the goal to estimate properly a rental charge of each building, it is necessary taking into account the retail price of each product, in order to apply it in each warehouse. So, meat and fish areas should have a higher charge than Fruit and Vegetables.

In case of reserve plots, where other complementary activities should be developed, the company in charge of market management, should decide the rent of these plots, it represents a strategic decision for the company in charge of the Hub Management.

- Admissions or Entrance income

In order to offer competitive prices, MERCASA recommends keeping entrance charges, and then increase them according to price index applied each year. The entrance price should be different depending on the weight authorized to each vehicle, and depending if they are going to deliver stocks or to buy them. Therefore, those vehicles that goes to market to deliver stocks, should be weighted with a double purpose: confirm the carrier statement (document which reflect the amount of each product that transport in the vehicle) and contribute to prepare an average price of the products, as a consequence of comparing amounts vs. prices of all transactions. The weight charge should be an insignificant amount.

Also, with the goal to ease and speed up the entrance of vehicles, the company in charge of the Hub can offer to market´s users different kind of season tickets (quarterly, six-monthly and yearly) applying different discounts in each case (i.e. 10% in quarterly tickets, 20% in six-monthly tickets and 30% in a yearly one). This suggestion should reduce income very lightly, (obviously these would be higher when each one buy an only-use ticket each time they go to the market) but the functional advantages offered to users (avoiding queues, some discount in entrance tickets, etc) compensate the small decrease in income.

Estimations regarding number of vehicles expected in the Hub should be, at least, the same as currently (in old markets) in order to not loose income, but in an optimistic scenario it should be higher than nowadays, considering the wide offer that new market is going to include in its facilities.

- Other income

As other income, MERCASA would recommend to require a deposit, whose amount would be equivalent up to a rent of two months long. This deposit is refundable in case of an operator leave its stand in the Hub. The purpose of this deposit is guaranteeing the properly care of facilities.

Another income that contribute to Hub profit are:

- Advertising spaces that Hub Operator can rent out to advertising agencies.
- Income from transferring lease of the stands and plots. In this case Hub operator can collect 25% of transaction´s price, and if it is too low, Hub Operator can use its right of first refusal and corresponding withdrawal according to each country law.
- Income obtained from production and sale of ice-scales, specially focused to fish operators.

Operating expenses

Operating expenses that the company in charge of the Hub should afford can divide in the following groups: personnel, depreciation and amortization of facilities and general expenses.

- Personnel Expenses. Regarding to personnel expenses, these include wages and salaries, Social Security, allowances for Board of Directors meetings, other wages such as training.

- General expenses include those expenses based on external services such as:

    - Cleaning and Refuse Collection
    - Repair and Maintenance

- Security
- Advisors: lawyers, audit and consultant companies, and other advisors who provide services to Market Operator.
- Insurance Policies according to Georgian Insurance Law.
- Other expenses: office consumptions such as paper, travel expenses (tickets and allowances, etc.),
- Supplies (petrol, water, electricity, etc.)
- Financial costs ; interests and loans
- Grants and Business Development Services

Market Operator has to decide if Maintenance, Security, Cleaning and Refuse Collection are services provided by own personnel or if it is better outsourcing it, in order to have a cost structure more flexible. Outsourcing these services does not imply outsource as well the supervising of them, because, among staff structure proposed before, it is necessary to keep an own supervisor of each service.

The decision of outsourcing these services should be taken considering the features of each service, because may be is not interesting outsourcing all of them. For example, maintenance staff should be organized in order to develop a preventive maintenance and repairs, which will reduced as more frequent the preventive one is carried out. In this case, perhaps it is worth to contract own technicians specialized in branches previously described.

In case of cleaning services, due to the fact that special machinery is required it would be able to outsource it, in order to have always the best equipment (industrial sweeper and then machinery to water aisles and streets), and if it breaks down, the company in charge of the service has to provide another one with the same technical conditions, so outsourcing this service allows to guarantee it always to market users. The same situation happens to Refuse Collection, because vehicles needed to transport the rubbish are very specific and expensive, so it is worth to outsource it as well on behalf a specialized operator.

- Depreciation and amortization. One of the costs that the company in charge of the Hub has to afford is depreciation or amortization of its facilities.

2.9. Regarding economic impact of Agricultural Hubs

Some of the main positive externalities derived from the installation of a Hub are detailed below. An externality represents a benefit for society as a whole that is not necessarily captured by the Hub (and is therefore not in the project's cash flow).

The development of a Hub entails impacts derived from greater efficiency in the value chain analysed below:

- Reduction in the level of losses: It is estimated that the construction of a Hub entails, as a consequence of the improvement in the operations and therefore in the efficiency of the value chain, a reduction in the level of wastage.

- Reduction in internal movement costs: The installation of wholesale operators in a Hub would generate major improvements in the operational efficiency of the companies, shown in reductions in loading and unloading times, lower handling costs, greater palletization and reduction of the distance goods have to travel.

- Improvement in the mean quality of the produce on sale: Hubs enable an improvement in the mean quality of the goods sold at the wholesale market, generated through a combination of multiple factors. On the one hand, reductions would be seen in the mechanical damage to produce when better logistics are used to unload the lorries of the wholesalers or their suppliers. In addition, the organization and increased number of sales spaces enables greater and better use of the chilling capacity, which preserves the produce better.

- On the other hand, an improvement in quality can be expected in health terms, the harmlessness of the produce and even in the prevalence of chemical residues from farming. In the case of health quality, it should be noted that the taste and appearance of the produce improves substantially when it is transferred to a cleaner area than at present. In addition, insofar as the Hub contributes to the organization of incoming logistics, it is assumed that an adequate sampling of incoming goods can be taken and thus raise the mean quality even further. Any reduction in the mean quality can be seen in a decline in the mean sales price.

- Improvement in tax collection: the entry into operation of a Hub probably means an improvement in terms of the formalization of business activities. In this sense, the commissioning of a Hub should improve the collection of business-related taxes. Although it is difficult to guess the future course of the level of compliance with tax obligations, the entry into operation of a Hub is understood to generate an increase due to the concept of direct income tax.

- Supply-side consolidation and development of added-value activities generate better conditions for the growth of the export sector: the commissioning and correct operation of a Hub enables the strengthening of the supply-side consolidation process for fruit and vegetables and other fresh produce, which could have major effects on the fresh produce value chain as a whole and should establish the bases to improve the chain's exporting competitiveness.

  This contribution to increased exports would be due to the potential for facilitating the adding of value to domestic production through the development of different activities such as packing, sorting and processing at the CAA. In this way, it would foster the production of third, fourth and fifth stage foodstuffs.

  On the other hand, the development of a Hub enables the application and/or consolidation of a series of policies needed to advance towards internationalization: on the one hand, a substantive improvement in the quality management processes for the value chain through being able to advance in the classification of fruit and vegetable produce. On the other hand, the commissioning of the Hub would contribute to the packaging standardization process. In addition, the consolidation of fresh produce supply in the Hub will generate suitable conditions to progress towards an improved level of food harmlessness.

- Efficiency and transparency in price formation: It has been estimated that the construction and commissioning of a Hub implies a process of modernization and technification. In this way, there will be an improvement in transactions by operators, reflected in greater efficiency in the value chain and higher quality of the produce to be marketed. This is more marked by the fact that the incorporation of new technologies is expected to bring about the mechanization of common processes or improved efficiency in certain activities. Furthermore, the fact that there are specific areas for the performance of a variety of activities (such as, for instance, packaging, palletization, cleanliness, among other activities associated with logistics) will act as a driver for efficiency. It has been estimated that, partly as a consequence of the foregoing, the commissioning of a Hub promotes a higher level of transparency in the price formation process.

- Improvements in the availability of market information: The professionalization of the operators' management and the greater formalization and transparency of the market are elements that will encourage orderly competition and, probably, reduce the occurrence of anti-competition practices that obscure the price formation process. Furthermore, more technified and more efficient companies manage their information generation processes better and, within the framework established by Hub Management Entity with a modern price recording protocol, the inputs for taking decisions will be more appropriate and transparent for all players, which in turn contributes to the above goal.

- Formalization of workforce: The commissioning of a Hub means an improvement in terms of the formalization of business activity. Therefore, the development of a new Hub should contribute to both an increase in collection through Social Security contributions from employers and employees and also the improvement of the wellbeing of the workers covered by the system.

- Improvement in infrastructures in the area (new location). It is reasonable to assume that, in a context where there will be improvements in the infrastructure at the new location, which will extend to all the residents in the area, there could be increases in property values, both for residential use but fundamentally for logistics uses. These improvements imply that an increase in the capture of taxation on homes may be observed in the medium term for the public sector.

- Improvements in urban planning. Many Central Markets are located in the heart of the city centre, affecting the day-to-day operations of those living in these districts. This leads to traffic congestion due to lorries, night-time disturbances and litter from the operations.

  The elimination of wholesale trade from city centres and the reconversion of the area would lead to an increase in local property values, which would eventually extend to current properties and also future properties located in this area. Thus, it is reasonable to infer (*ceteris paribus*) that there could be an increase in the medium term in the collection of home-related taxes by the public authorities.

  The removal of the Market to the periphery would resolve the problems it causes to local residents, and the public sector will recover a very considerable real estate asset in the city centre.

- Reduction in traffic. A reduction in heavy vehicle traffic can be seen as a possible impact of a project of this kind. The changes in heavy traffic are aligned and will contribute to strengthening the hierarchy of the action lines currently followed by public authorities with respect to managing urban traffic flows.

Moreover, and also to reinforce the decision-taking process, we believe it is very appropriate to conduct an analysis of the outcomes of similar projects and experiences in other countries, specifically in Spain, due to the specific know-how the consultant has acquired in this regard.

In the past, many cities in Spain dealt with a situation similar to that of many cities in Asia at present with respect to their wholesale markets. The Spanish Government created a trading company with the main role of developing a network of food supply centres, together with the municipal authorities in each city where these were located. In order to fund the development and construction of the 23 food supply centres built in Spain, mainly public funding was provided,

at both State and municipal level, supplemented, on a case by case basis, by bank finance and, in some cases, with contributions from the private sector resulting from the financing obtained through entry fees charged to the wholesale operators.

The 23 food supply centres are operated by publicly-owned companies, in the form of jointly-operated trading companies, applying criteria of financial sustainability, cost recovery and profit-earning, so as to enable further investments and services in the food supply centres, strengthening their social return and improving the whole cycle of food marketing.

Decisions on investment by the public sector are taken starting from a very extensive time horizon, 50 years, coinciding with the expected working life of the food supply centres. Each year, each food supply centre applies its result, partly in the form of dividends, part of which corresponds to the Government and to each municipality where the food supply centres are located. In this way, the public sector recovers the investment made and obtains a profit.

In the early years of the existence of hUB, the financial reality was very complicated and, generally speaking, it was not until many years had passed, as many as 15-20, that they embarked on a clear path of dividend earning. In many cases, the provision of public funds continued during the first 13-15 years of life of the Hub.

It is important to highlight the turnover of the almost 4,000 companies located at the 23 Hubs in Spain, almost 11 trillion euros, due to the tax contributions this figure represents for the public sector. It is also important to point out that approximately two thirds (6 million tonnes) of fruit and vegetable produce consumed annually in Spain, have passed through one of the 23 Hubs. Exports of fruit and vegetables last year reached almost 12 million tonnes, for a value of 11.6 trillion euros, in contrast with the very small figures in previous periods, prior to the sector's modernization.

In more general terms, the food and agriculture sector in Spain, over all its phases (growing, transforming, marketing and distribution), is responsible for 8.3% of the country's GDP and provides jobs for over 2 million people.

It is clear that the implementation of the 23 Hubs in Spain does not explain the whole growth and expansion of the sector, but it is possible to conclude that their existence has been a necessary pre-requisite. It is important to bear these effects in mind, in other countries and other contexts, before taking decisions based solely and exclusively on financial ratios.

2.10. Regarding legal aspects and organisation and management

The institutional and legal framework for the development of a Hub encompasses any and all regulations affecting all institutions that are directly and indirectly involved in the commercialization of foodstuffs from agriculture and fisheries, which must therefore have a permanent relationship with the new wholesale market / Hub.

In Spain, one of fundamental aspects of wholesale food markets is that they stand as providers of a public service, over all other economic considerations. We should highlight, briefly and without limitation, some factors that characterize public services, which must serve as a horizon for the competent public authorities:

- Continuity deriving from the essential nature of the service to be provided, which implies the ongoing provision of the service.
- Access for all who meet the requirements under the applicable rules and regulations.
- Neutrality and transparency, avoiding *de facto* monopolies or dominance situations based on circumstances other than merely business or commercial situations.
- Universality, that is, a minimum service guaranteed for all citizens, limiting social and geographical disparities. This is, in sum, a common effort to respond to social demands determining minimum service provision standards.

It should be noted that wholesale markets selling agricultural and fisheries products provide food staples, which also account for a large proportion of the expenses a family incurs in large sectors of the population.

In the Spanish case, the development of a regulation on wholesale food markets is based on the idea of a public service, generally of a municipal nature because under the Spanish laws, municipal authorities are required to provide this public service, i.e. markets. Because of that and because wholesale markets carry on an activity that exceeds municipal boundaries, the creation in Spain of a national and supra-municipal entity such as MERCASA was preceded by the enactment of a Decree that authorized its incorporation under “high national imperatives, such as an enhanced supply system and its distribution networks”.

Another factor that led to the creation of a public company to develop central wholesale markets in the 1960s and 1970s was the considerable investment that was necessary to set up such infrastructures and the long time it took to recoup the investment made. This discouraged the private sector from getting involved in the project back in those years.

Evidently, there are other legal options, such as through the private sector. However, we believe that this approach is deficient in that the wholesale market is here essentially considered as a profitable activity, a key element to get the private capital interested. While this goal is pursued, whatever the form it takes, in practice there are situations in which one must leave these profits aside and defend the general interest.

In other words, the basic goal of the Hub / wholesale market is to encourage food distribution in the best possible conditions of quality, hygiene and price, while a secondary goal would be to obtain a surplus from operating the market that serves to amortize the investment made, improve facilities and develop a national wholesale trade system. However, this priority also depends on the macroeconomic context, and on the policies of each country.

We believe and strongly recommend that the operation and management of a Hub must lie with a legal entity differentiated from the public administrations; for that, an autonomous entity or independent company must be created, the legal basis of which enables it to operate efficiently.

In any case and depending on the legal form adopted by such an entity, while observing the laws in force, our recommendation is that the Market Authority´s competencies include programming, coordinating and implementing all necessary actions for the design, execution, administration, operation and maintenance of the Hub.

We believe that it is necessary that the Management company has / reinforces the following competencies:

- It must have decision-making powers;
- It must be able to own goods and assets (markets);
- It must have decision-making capacity;
- It must have the capacity to have liabilities in its own name, accept future obligations and commitments and sign contracts;
- It must implement an appropriate account control mechanism, being required to submit its accounts to the national tax authorities;
- It must have a limited borrowing capacity;
- It is an instrument of the Government to arrange and modernize the commercial structures of the country, with the ultimate goal of bringing producers and particularly associations and cooperatives closer to consumers;

- It must be managed under efficiency and cost recovery criteria (at least partially)-- in spite of it not having a for-profit purpose, it should however pursue the generation of enough revenue to be able to keep the commercial structures it manages in good working order, combining social and economic profitability criteria;

- It must be responsible for defining and developing support policies and programs in relation to commercial structures and markets;

- It must be responsible for developing, organizing and managing a commercial (and logistics, processing, cold chain, etc.) equipment network for foodstuffs at national level, in accordance with the global interest of producers, retailers and the urban structure of cities;

- It must be responsible for developing and managing and controlling wholesale markets and food units (warehouses, cold stores, classification and standardization and manipulation of produce, packaging, distribution stations, exports, services, etc.) at destination or large consumption areas(assembly and terminal ones);

- It must be responsible for developing and managing and controlling wholesale markets at origin or production areas;

- It must be responsible for developing and managing and controlling retail or peripheral markets with competencies in the commercial urban area at country and municipal level;

- It must be responsible for proposing actions and channeling collaboration initiatives amongst authorities, retailers and users, taking account of the interests of country's agricultural, production, trade and consumption sectors;

- It must be responsible for preparing the relevant financial programs that serve to channel the necessary investments and execute them;

- It must be responsible for preparing economic and technical studies for planning and defining markets, with the support of international specialists, including to be able to control project execution;

- It must be responsible for guaranteeing that food traceability and safety in markets standards are fulfilled;

- It must be responsible for guaranteeing that safety and veterinarian inspections are carried out on the products sold at the markets;

- It must guarantee market competitiveness and transparency;
- It must ensure compliance with the regulations in force and the identification of those provisions that may prove necessary for development.

On a preliminary basis, a minimum organizational structure for the company managing and operating the Hub, in order to ensure the proper management and administration of the market, could include the following departments or areas of operation:

a) General Management: it will be responsible for the general management of the Hub. It is composed of at least one General Director, who must have political and technical skills, be knowledgeable about the project and committed with it, with full capacity and power to adopt any and all necessary decisions from the point of view of the implementation of retail modernization policies. The General Director will be responsible for organizing the transfer and installation of operators, arranging and maximizing market use, and marketing spaces.

b) General Administration Area: it will be in charge of conducting general and analytical accounting tasks, as well as the following activities: planning and budgets, recordings, economic and financial control and deviations, assets management, taxes, treasury and banking issues management, management of personnel, payrolls, training and salaries, hiring, insurance and general operating procedures, human resources, licenses, insurances and insurance plans, penalties and infractions, IT, office operation, etc. At least 2 positions should be created within the General Administration Area: a Coordinator or Financial Director, and an Administration, Human Resources and Legal Affairs Manager.

c) Markets Area: it will be in charge of organizational relations with the main operators and clients of the Hub / market, as well as of mobility control and safety in the market. It proposes and applies operation rules and internal procedures for purchases, warehouse, distribution, etc. This area should be made up of a Markets Director, who will be responsible for arranging spaces and uses, equipment needs, warehouse operation control, sales points inspections, timetables, and communications with users, regulation of traffic, both external and internal, parking and vehicles management, signalling, loading and unloading, etc.; and a Surveillance and Security Coordinator and a Cleaning Coordinator, although these services may be outsourced to specialized companies.

Technical Area: it will be in charge of managing the operation of the premises and maintaining premises and supplies. It is composed of a Maintenance and Supplies Coordinator, who will be

responsible for implementing the integral maintenance and upgrading plan of the overall premises; warehouses, cold stores, water supply network, fire systems, sanitation, sewage, lights, transformation stations, etc. It should also include a Food Inspection and Safety Coordinator to strengthen the food safety concept in the future market.

MERCASA strongly recommends that the managing authority be created before the new market starts its operations.

3. PERCEPTIONS ABOUT STUDY TOUR AND NEXT STEPS

3.1. Perceptions of participants

The last day of the program included a wrap-up meeting in which participants had the opportunity to make any further clarification or still pending questions to the MERCASA team. In addition, a "tour de table" at which a speaker of each of the four countries participating (Kazakhstan, Nepal Uzbekistan, Vietnam) had the opportunity to highlight their main conclusions, impressions and early thoughts regarding training session of Monday July 24th , site visits, meetings with managers of the markets, cooperatives, etc. that were held throughout the week. They had also the opportunity to talk about similarities and differences between Spain and their respective countries in the agriculture and marketing sector.

Spokesmen of the four countries expressed their satisfaction with the contents, inputs and information received during the week, both in theoretical sessions and in the visits to a wide range of wholesale and retail trade facilities, cooperatives and private companies and also offered their compliments and their sincere thanks to ADB for organising this study tour.

In the lines that follow we summarize the ideas expressed by country representatives during this session on Friday 28th July.

Uzbekistan.

Uzbek spokesman highlighted 3 main points:

- Uzbekistan and Spain have similar climate conditions and agriculture mix. It has been very useful to visit this country and learn about production, marketing and consumption of horticultural products as well as the linkages between theses stages.
- With the support of ADB, Uzbekistan will start working in the conceptualization of 3 wholesale markets. The support of ADB for the implementation of these wholesale market researches in Tashkent, Samarkand and Fergana Valley will surely be a very important milestone. After this study tour, they have become convinced that it is up to the State to lead this type of project. Of course, there is room for private initiative as well, but the State should leads this strategically significant project.
- Management of the markets in Uzbekistan is undertaken through the state. The implementation of a management model similar to the Spanish one by concession to a public company could be envisaged in Uzbekistan in order to achieve international standards in service and finance management of the markets.

Another point made by the Uzbek spokesman was that it is very important to know who buys and who sells in the markets. As an example, in the existing wholesale market in Tashkent which surely needs to be upgraded or to be moved to another location and that, in contrast to Spanish wholesale markets visited, there is a large share of sales to end consumers. It is important too to control the accesses – products, cars & trucks and people - that enter the markets.

Regarding current infrastructures, Uzbek markets are located in the city centers and this delegation has also learnt in this trip that it is very key to locate markets in the outskirts of the cities so that they can sustainable develop in the medium-long term.

Vietnam.

The Vietnam spokesman has make a point about the huge difference between Spain and Vietnam stage of development. He found also useful similarities as there are already in Vietnam urban food wholesale markets of state or municipal management facing some of the problems faced by Spanish food markets some decades ago.

First of all, Vietnamese delegates have been able to see with their own eyes the differentiation between producer-cooperative-wholesale market-retail market that exist in Spain. This separation between stages is no so clear in Vietnam.

A second point is that during the study tour delegates have visited large and modern infrastructures, very well managed and maintained, and also, delegates have noted top of the line equipment for logistics, storage and marketing of foodstuffs. The situation in Vietnam is completely different, the government is not investing in these kind of infrastructures, there is a lack of adequate infrastructures; cooperatives are not developed, size of producers is very small and more wholesale markets are required. Vietnam needs to add these elements to the system if the country wants to improve the value chain of fresh products.

Vietnamese spokesman also raised some questions: where to start? Which is the role of the government? How to organize producers? How to encourage the promotion of cooperatives? Vietnam representative also put some question about existing operational subsidies, if any, from the State to the wholesale market managing companies (which in fact do not exist in Spain).

In conclusion, initial steps should be taken, and having ADB support can be a very good start. It's not only a matter of size and infrastructures, Vietnam government must think about improving the quality and safety of foodstuffs and these wholesale markets can be useful tool combined with the modernizations of agriculture.

Kazakhstan.

Kazak spokesman started by highlighting that Kazakhstan has 18 million inhabitants and is the ninth country in the world by size. It has 25 million head of livestock and is the world's fourth largest grain exporter. So, this country has great potential for agricultural development. There is a government program to support agriculture, meaning that agriculture is a strategic sector for the country.

One problem in this country is that it's landlocked, and the government needs to develop very good logistics to assure procurement of foodstuffs efficiently and in the best conditions; the visit to TmZ (Zaragoza dry port located in Mercazaragoza) was very useful for this delegation in order to see one example of what can be done in landlocked areas to connect them to sea port with intermodal transport. Food wholesale markets as logistic platforms is a strong point due to the particular geographical characteristics of Kazakhstan. The Kazakh speaker also mentioned the desire to count with ADB support in the next future.

Kazakhstan is already working in the development of a Terminal in the Caspian Sea and in a free trade zone on the border with China. Regarding cooperatives, there is also a government program to develop these kind of organizations. These projects are aimed to create an effective marketing system.

In addition, Kazakhstan has to work on the regulation and control of food prices. The experience of Mercasa in this area is very useful. Speaker also asked about the legal possibility in Spain to develop wholesale markets of private ownership, different to the state-owned wholesale markets network of MERCASA, as in Kazakhstan there already exist private wholesale markets. It was pointed out that there is not in Spain legal (but almost *de facto*) state monopoly in this area as there are some few private wholesale markets in the country.

In conclusion, having watched during these days how Mercasa has been solving issues and challenges throughout its history it's a very good example for us of what's need to be done in our country to make an efficient system of food distribution, the Kazak spokesman said.

Nepal.

Nepal spokesman started by pointing out that Nepal is also a landlocked country, as Kazakhstan, and the main problem to solve in Nepal is the loss of agricultural product throughout the distribution chain. The percentage of food losses are from 20 to 40 %.

What the Nepalese delegates had learnt during this study tour is that the agriculture sector needs to have long-term vision and political determination. In addition, like Vietnam, the country needs big investments in many areas like transport, logistics and cold storage capacity. The deficit of cold

storage obliges the country to import many products from India, with the consequent prices increases.

The Nepalese delegation make some questions about cooperatives and the support offered by Spanish governmental authorities in the second half of the past Century. He mentioned that co-operatives are an underdeveloped player in Nepal that could, in the future, have a more important role in the food production and distribution chain.

In conclusion, Nepalese speaker mentioned that after these five days in Spain they have been able to see that Mercasa model is successful and as next steps for their country, they would like to work in what elements of Mercasa model can be replicated, what elements should be adapted to local reality and what things needs to be done in a different way to improve the distribution chain of foodstuffs in Nepal.

3.2. Way forward and next steps.

MERCASA considers that this Study Tour has a highly educational impact as it combines technical visits to wholesale markets, co-operatives, wholesale market companies on one side, and workshops and presentations on the other side. It allows governmental officials to have a realistic and omnicomprehensive view of the role of holistic wholesale markets and their linkages downstream and upstream in the food distribution chain.

For this reason, we consider that in the future ADB could use such Study Tours scheme as an effective tool for further technical missions with authorities of other countries.

However, we consider that a Study Tour like this has not to be considered in itself as a final stage but as a first milestone prior to further steps in order to:

i) disseminate the advantages and values of establishing or upgrading food wholesale markets and raise awareness among political decision-makers;

ii) identify target countries/cities likely to successfully develop wholesale market projects;

iii) assist to implement policies for improvement of food trade at affordable prices and with hygiene and safety standards.,

As expressed in previous pages, the model described in this report has proved its validity and has been critical for the successful development of the agricultural and food distribution sector in Spain. However, this does not mean that this model is directly replicable in Asia. Each country should look for its own model / concept.

The context for the successful development of the Spanish model was characterized by an uncompetitive, atomized and inefficient agricultural sector, economic underdevelopment, rural migration to the city, cities with a growing population (and consumption) and a lack of market infrastructure.

In this context, the role of wholesale markets and wholesale entrepreneurs was crucial to guarantee food supply in conditions of price, quality and variety to the population. Many countries in Asia face a similar situation and many lessons learned in Spain can be valid and useful.

There are also differences and new challenges; the role of supermarket chains and HORECA, export possibilities or the development of value-added activities; cold, processing, logistics, etc. These aspects should be addressed from the very beginning, in the case of promoting and supporting the development of agricultural wholesale markets.

We note that in some Asian countries the public sector is perceived as an inefficient public service manager and the private sector can better contribute to solve or mitigate some problems of farmers, distributors and consumers. Regardless of whether there may be successful private wholesale markets, we conclude that public sector support and leadership in these types of projects is imperative.

This intervention must be at the country level, long term it must be coordinated with other policies and sector support programs, and requires a public-public partnership framework (country government and municipal governments) and also a public-private partnership framework.

High levels of post-harvest losses, high food price fluctuations or food security are some of the reasons (analysed in this report) for public intervention. Likewise, we have learned that markets are financially profitable in the long run and this means that the private sector (more short term / high profits oriented) may not be interested in undertaking these projects.

We have the impression that to some extent, there is a lack of reliable information on the wholesale markets sector in the region. It would be interesting for market developers to have updated information on size, number of markets, cities in which they exist, jobs/ employment, or turnover and volume of sales.

In Spain, the economic activity generated by the wholesale markets represents around 1% of the country GDP. Neither are we are aware of its evolution nor is there a global research work on the opportunities and impact that the wholesale-retail market model can have in other areas, such as socio-economic development at the level of a territory.

An exercise in census and analyzing information regarding the markets that exist in the region could be of interest for their ADB financing.

In addition to the knowledge of the sector, it would be highly advisable to transfer this knowledge to all operators, authorities and practitioners in the region.

In this regard, to prepare a guide to good practices for the design, development and management of wholesale markets, support the holding of events or workshops at local level in the region, with for example the aim of disseminating the concept and the opportunities that modern wholesale markets offer are also recommended for ADB support, as well as assessment / awareness reising missions to cities/regions and training programs for public managers of markets, farmers and traders.

MERCASA offers to collaborate in these activities. Ideally it could be consolidated the celebration of a specific event on agricultural wholesale markets / hubs of the region, on an annual or biennial basis.

In the case of large cities, and in the region there are many of the largest in the world, and considering that they will continue to grow, an approach to promote the creation and strengthening of clusters of companies in the distribution of perishable products sector, including the perspective of transport, traffic or environmental problems and the technological solutions already in the market for the management of this global problem, may be in the interest of the ADB.

Of course, a topic of maximum interest will be the pilot experience (ADB financed) for the development of three modern wholesale markets in Uzbekistan and their potential for replication in the region. However, we believe that it will still be necessary to follow up and further support on its future implementation. This will require a specific program of financial and non-financial support to operators and technical assistance in the management of markets.

Finally, we believe that ADB should also support, financially and non-financially, other retail business initiatives, including the modernization and revitalization of food retail markets and traditional food trade.

4. APPENDIX

(See pdf attached).

I List of participants Study Tour.
II Agenda Study Tour.
III Presentation: *"ADB's Study Visit to Mercasa, SPAIN 24-28 July 2017".*
Mr. Akmal Siddiq, Director, Environment, Natural Resources, and Agriculture Division at Asian Development Bank.
IV Presentation: *"Training on Market Infrastructure and Agricultural Value Chains: Development, investment, financing, operation and linkage with the producers of the wholesale markets".*
Manuel Estrada-Nora, Head of the International Department at MERCASA.
V Presentation: *"MERCASA experience: The network of Wholesale Markets / Food Hubs in Spain".*
Antonio Sartorius, Consultant of the Directorate of Foreign Operations at MERCASA.
VI Presentation: *Technical aspects on design of Wholesale Markets / Food Hubs in Spain.*
Jose Ramón Espada, Head of the Technical Department at MERCASA.
VI Presentation: *"Mercamadrid".*
Deputy Manager Director Mercamadrid, D. Jose Ramón Sempere.
VII Workshop: *"Training on Market Infrastructure and Agricultural Value Chains: Development, investment, financing, operation and linkage with the producers of the wholesale markets".*
Manuel Estrada-Nora, Head of the International Department at MERCASA.
VIII Workshop: *"Overview of your country Food Value Chain & Review of the process of planning and development of a Wholesale Market".*
Antonio Sartorius, Consultant of the Directorate of Foreign Operations at MERCASA.
IX Note on Markets.