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1. BENCHMARK ANALYSIS

1.1. Lukula Agro-park (Congo)

Lukula Agricultural Park (Congo)		
Category	Description	
General data	area	9 ha (includes 1.2 ha of covered area and an external area dedicated to agriculture and distribution)
	Inauguration	2020
	Financing	World Bank grant of 11,500,000 dollars
Location	Geographical context	Located in the rural context of the Bas Fleuve district, in the town of Lukula, in the province of Central Congo, Democratic Republic of Congo.
	Nearby infrastructures	Agricultural fields, local markets, schools, health centers, simple residential areas with traditional houses and some modern buildings
	Main installations	Agricultural processing facilities with advanced packaging and refining structures
		Advanced irrigation systems to improve agricultural productivity and water use efficiency
		Energy infrastructure to support industrial and agricultural activities
		Support centers for agricultural cooperatives, offering logistical and technical assistance
(Functional Areas)	Reception and storage area	Collection of agricultural products and palm oil extraction line
	Processing and transformation area	Modern technologies for processing cassava, palm oil, cereals, fruit and drying fresh produce
	Storage area	Refrigeration units for fresh products and warehouses for non-perishable products, with packaging and bottling systems
	Distribution and retail spaces	Direct sales or shipping to other regional markets, including large urban centers such as Kinshasa
	Administrative and logistics units	Management and coordination of the complex's activities
Structures and Constructions	Type of construction	Steel structures, masonry walls, metal panels, concrete and bricks
	Service technologies	
	Electricity:	National power grid with two emergency generators

Lukula Agricultural Park (Congo)		
Category	Description	
	Water supply:	National hydraulic system and two artesian wells (160 meters deep)
	Waste management:	International environmental protection standards; reuse of waste as compost, without the use of chemical fertilizers or pesticides
Treated products	Main products processed and marketed:	Cassava: Processed into flour and other long-lasting products
		Fruit: Dried and processed to preserve its nutritional value
		Palm oil: Extracted from palm trees for culinary and industrial use.
		Local livestock and agricultural products: Vegetables, legumes and fresh foods
Management structure	This agri-food platform (agropôle/agro-hub), built in 2019 and fully completed and tested in October 2020, is designed to process and preserve products typical of the equatorial belt, guaranteeing high-quality production despite the extreme humidity of the region, which makes perishability a major challenge. -The platform specializes in the processing of products (e.g. cassava-based products, including cassava flour, starch, ready-to-eat cassava bread (chikwangue) and cassava flour enriched with proteins and minerals). - Strategically located in the center of an agricultural zone, it offers comprehensive support services to small farmers within a radius of 15 to 20 km, enabling them to process and deliver high-value finished products to Kinshasa, located 500 km away -The center was initially funded by the World Bank and, although it is already operating as an important center, it is currently in an expansion phase, with other private centers under development, supported by private sector investments.	
Implications of CAAM	Given Chimoio's geographical position at the center of the Beira corridor, this model could work with the aim of providing logistics services for modern distribution and HORECA in the wider urban area. Considering the production limits of the agricultural territory, the HABs, satellites of the CAAM, must function by providing complete services to small farmers, focusing not on a few products, but on the entire production rotation. Primary processing of non-F&V products, such as fortified flours, should be considered. So, on the CAAM side, the aim is to improve added value with logistics and transformation services. On the agricultural side, the aim is to improve the sustainability of agricultural production. This structure supports local production by providing advanced irrigation systems to producers and helping them to process their products so that they can be sold in the complex. It is not just an exchange platform, offering services to improve the entire agricultural sector. These services and the spirit of the whole complex are similar to what CAAM aims to offer.	

Table 1 : Lukula Agro-park data

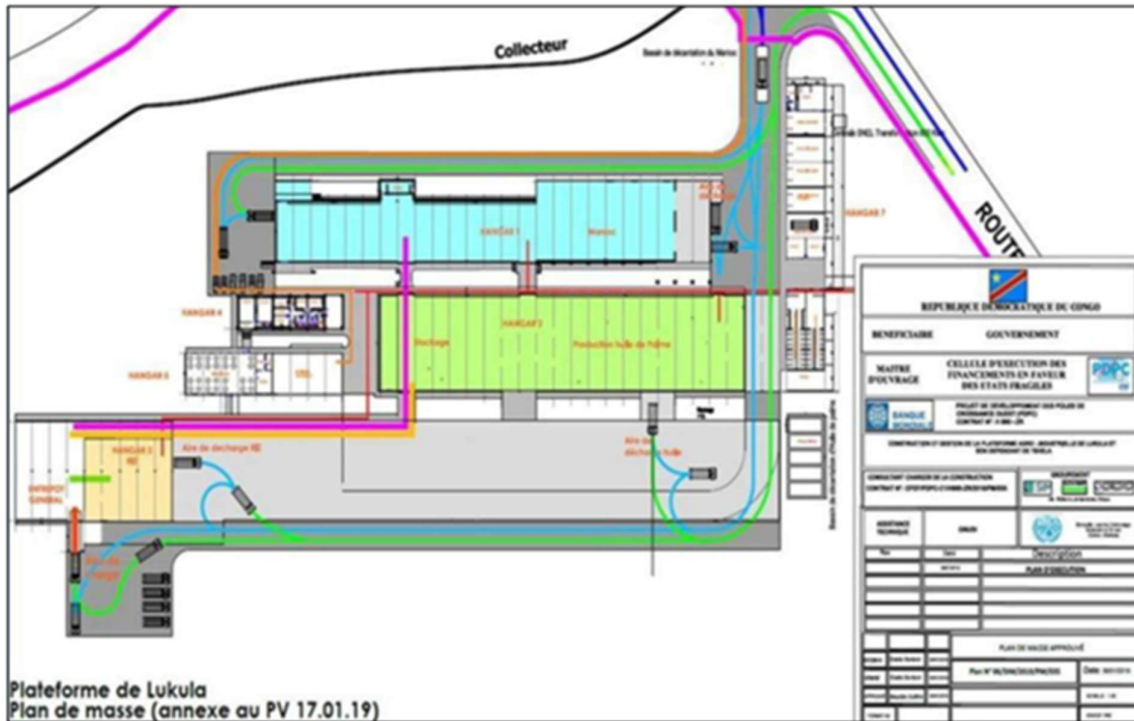


Figure 1 : Floor plan of functional areas



Figure 2 : Buildings of the complex



Figure 3 : Steel frame structure



Figure 4 : External view of a building in the complex

1.2. Rimini Agri-Food Center (Italy)

Rimini Agri-Food Center (Italy)		
Category	Description	
General data	area	17 ha (includes 4.5 ha of covered area and an open area designated for logistics, transport management and potential events)
	Inauguration	2005
	Financing	Financial support from public funds and private resources provided by the operators using the facilities, for a total amount of 30 million euros
Location	Geographical context	Located about 10 km from the center of Rimini, in Emilia-Romagna, a region in north-central Italy
	Nearby infrastructures	Large industrial area, home to various manufacturing activities and shopping centers such as Ikea and Metro
(Functional Areas)	Distribution and retail spaces	Direct sales or shipping to other regional markets
	Storage and warehouse area	Refrigerated rooms and specific warehouses
	Logistics and transportation	Loading and unloading docks, spaces for maneuvering vehicles, parking and maintenance of transport vehicles

Rimini Agri-Food Center (Italy)		
Category	Description	
	Events area	Temporary events and promotional activities by producers, distributors and operators in the agri-food sector
	Commercial and office areas	Administrative and commercial offices for transactions
	Waste and Sustainability Area	Waste management and disposal
Structures and Constructions	Type of construction	Industrial buildings designed to be modular and flexible, with a load-bearing structure
	Service technologies	
	Cooling system:	Preservation of fresh and perishable products, including cold rooms, cold stores and refrigeration units
	Ventilation and air treatment system:	Avoid mold or unpleasant odors and maintain product quality
	Fire protection:	Sprinkler systems, smoke detection systems, thermal sensors and automatic doors
	Energy-efficient LED lighting systems:	Adjust the light intensity according to the ambient conditions
	Security and surveillance systems:	Monitor outdoor areas to prevent theft and unauthorized access through security barriers
	Waste management facilities:	Ensure visibility of operations at night
	Waste management facilities:	Disposal of organic and inorganic waste
	Water purification systems:	Mechanical filters and plants to eliminate bacteria
Treated products	Main products processed and marketed:	Fruits and vegetables: apples, pears, bananas, citrus fruits, kiwis, tomatoes, peppers, zucchini, lettuce, cauliflower, carrots, onions and potatoes
		Meat and sausages: beef, pork, chicken, lamb and rabbit; as well as ham, mortadella, salami, pancetta and sausages
		Fish and seafood: cod, sea bream, sea bass, sardines and trout, as well as shellfish and crustaceans
		Dairy products: mozzarella, ricotta, stracchino, caciocavallo, parmesan, pecorino, grana padano and other typical cheeses
		Pulses and cereals: chickpeas, beans, lentils and various types of cereals
		Dried and frozen products: dried pasta, rice and frozen products

Rimini Agri-Food Center (Italy)	
Category	Description
Licensing structure	- Centro Agro Alimentare Riminese S.p.A. (CAAR) is a modern service platform for HORECA, bringing together all the fresh food chains (fruit and vegetables, fish, etc.) and the redistribution and logistics services for HORECA. -The complex consists of three main buildings rented out to commercial operators for the sale of fruit and vegetables, fish products and miscellaneous goods (cash & carry), a management building with over 3,000 m2 of offices and a series of service buildings for the main halls, which house some of the activities required for the market systems. -The market operates through several wholesalers, each with dedicated stands, cold storage facilities and office space, all working together with a large wholesaler and HORECA logistics provider to ensure perfect distribution. -Local farmers have established a separate farmers' market, closer to the city center, and away from CAAR have established a dedicated farmers' market, designed to serve the end consumer with a more targeted and efficient allocation of fresh produce.
Implications of CAAM	This center is a great example of what an exchange platform oriented towards large-scale distribution (such as HORECA) should look like. The study of this complex helps to design a structure for the Chimoio CAAM that can work for large distributors in order to improve the domestic market, making it competitive with imported products. The technological systems for security and the cold chain can serve as inspiration for the technologies to be introduced in the future CAAM.

Table 2 :Data from the Rimini Agri-Food Center



Figure 5 : Floor plan with functional area



Figure 6 : Inside the market



Figure 7 : Aerial view of the complex



Figure 8 : External view of the complex



Figure 9 : Satellite view of the complex



Figure 10 : Aerial view of the complex

1.3. Rabat Agri-Food Center (Morocco)

Rabat Agri-Food Center (Morocco)		
Category	Description	
General data	area	25 ha (includes 12 ha of covered area and an outdoor area for logistics and transport management)
	Inauguration	2019
	Financing	Financial support from public investments of up to 1.2 billion dirhams (around 110 million euros)
Location	Geographical context	Located in the Sidi Bouknadel area, in the Rabat-Salé-Kénitra region of Morocco.
	Nearby infrastructures	An important industrial area, a growing residential area, a nature park, the ring road linking Rabat, Salé and Kénitra and the N6 national road.
(Functional Areas)	Wholesale area	To each wholesaler for the sale of products
	Storage areas and warehouses	Areas for cold rooms and dry warehouses for storing non-perishable products
	Loading and unloading docks	Facilitate the rapid transfer of goods to and from transport vehicles and logistics platforms
	Processing and packaging service areas	Packaging, weighing and processing of products
	Market area and commercial spaces	For selling fresh produce in small quantities
	Administrative Spaces and Support Services	Offices for managing bureaucracy, toilets, parking and rest areas
	Recycling and Waste Management Zone	Collection and management of organic and non-organic waste
Structures and Constructions	Type of construction	Main structure in metal frame; foundations, floors and infill walls in reinforced concrete, cooled areas with XPS and EPS
	Service technologies	
	Cooling system:	For the preservation of products that require it
	Mechanical goods handling systems:	Conveyor belts and forklifts
	Ventilation and air conditioning systems:	To ensure optimum temperature and humidity conditions
	Security and video surveillance systems:	To protect goods and control market access

Rabat Agri-Food Center (Morocco)		
Category	Description	
	Exterior and interior LED lighting systems:	To ensure visibility during night operations
Treated products	Main products processed and marketed:	Fruit and vegetables: local seasonal produce and imported products
		Meat and poultry: beef, lamb, chicken and turkey
		Fish and shellfish: fresh fish such as sardines, tuna, mackerel and anchovies, as well as molluscs and crustaceans.
		Dairy products: fresh milk, various types of yogurt, local and imported cheeses
		Pulses and cereals: chickpeas, beans, lentils and various cereals, including wheat, barley and corn
		Herbs and spices: saffron, cumin, paprika, olives and olive oil
		Processed products: honey, nuts, preserves and fruit juices
Licensing structure	-The market is located south of the Al-Taquadum industrial zone and has been established on a total area of 25 hectares, including 15 covered hectares, with an estimated investment of around 600 million dirhams (around 58 million euros), almost 70% more than the funds available for CAAM - The Rabat Development Company, affiliated to the Community of Rabat, was responsible for carrying out this project, which was postponed for several months due to controversy over the choice of its location. -The new marketplace stands out for its modern design, following the standards of the latest generation marketplaces. It prevents intermediaries from entering to reduce sales prices and uses digital systems to efficiently manage its operations and services. - This market replaces the old Akkari market, whose revenues went to the collective fund of the Rabat community as compensation - the market is positioned in the center of a production area	
Implications of CAAM	In addition to being a platform for exchanging ready-to-use products, this complex also provides product handling, processing and packaging services. This helps to increase the quantity of products reaching the market and reduce waste. All of this is inspiring for what the new CAAM can and should offer in order to be sustainable, both in terms of ecology and the potential for transformation over time.	

Table3 : Data from the Rabat Agri-Food Center



Figure 11 : External view of the market



Figure 12 : Aerial view of the complex

1.4. El Obour Market (Egypt)

El Obour Market (Egypt)		
Category	Description	
General data	area	126 ha (includes 60 ha of covered area and an outdoor area for temporary storage, logistics activities, loading and unloading of goods)
	Inauguration	1994
	Financing	Financial support from the Egyptian government
Location	Geographical context	Located along the Cairo-Ismailia highway in the town of El Obour, approximately 25 km northeast of Cairo, in the province of Qalyubia, Egypt.
	Nearby infrastructures	Extensive residential and industrial areas, service stations and workshops. It is well connected to the national highway network
(Functional Areas)	Wholesale area	To each wholesaler for the sale of products
	Storage areas and warehouses	Loading and unloading, storage and goods deposit areas
	Support areas	Articulated truck parking and commercial vehicle maintenance
	Recycling area	For the disposal of organic and non-organic waste
	Temporary market areas	Open spaces for seasonal sales or for goods that do not require refrigeration or long-term storage
Structures and Constructions	Type of construction	Steel for the supporting structures and reinforced concrete for the foundations and floors. Modular warehouses, durable materials and drainage system of PVC pipes and concrete channels
	Service technologies	
	Cooling system:	For storing perishable products such as meat and fish
	Ventilation systems:	To ensure air circulation in closed areas
	Security and video surveillance systems:	With closed-circuit cameras to monitor activities inside the complex and prevent accidents or theft
	LED lighting systems:	To ensure optimum visibility
	Drainage systems:	To manage waste water, keeping it away from structures through pipes and pumps
Treated products	Main products processed and marketed:	Fruit and vegetables: a wide variety of fresh seasonal produce

El Obour Market (Egypt)		
Category	Description	
		Fish and seafood: tilapia, shellfish and Mediterranean mackerel and Aswan tilapia
		Meat: beef, buffalo, poultry, lamb, goat and offal
		Other products: cereals, poultry and other foodstuffs in small quantities

Table4 : Data from El Obour Market (Egypt)



Figure 13 : Satellite view of the complex



Figure 14 : Inside the market



Figure 15 : Inside the market

1.5. Bouakè Market (Ivory Coast)

Bouakè Market (Ivory Coast)		
Category	Description	
General data	area	20 ha (includes 3 ha of covered area, and an outdoor area designated to parking areas, logistics activities, loading and unloading areas for goods, road facilities and temporary markets)
	Inauguration	1997
	Financing	Financial support from the Ivorian government
Location	Geographical context	Located in the city of Bouaké, in the Gbêkê district of Côte d'Ivoire, on the city's first outskirts
	Nearby infrastructures	Banks, pharmacies, schools, numerous historical monuments in the city of Bouaké, small residential areas and rural areas, the region's road and highway network, service stations and train station
(Functional Areas)	Wholesale market area	For the sale of large quantities of products
	Storage and conservation area	For the sale of large quantities of products
	Agro-industrial processing zone	Processing and transformation of agricultural products
	Logistics and transport area	Handling, loading and unloading goods, truck parking lots and weigh stations
	Administrative and service area	Administrative offices for managing centers and services for operators and traders.
Structures and Constructions	Type of construction	Large steel and reinforced concrete buildings, clad in prefabricated panels with thermal insulation, translucent plastic materials for roofs, supported by light metal or wooden structures and reinforced concrete pillars on the front façade of the buildings. The curtain walls are built in masonry, taking advantage of the natural ventilation technique
	Service technologies	
	Outdoor lighting systems:	To ensure that operations can continue safely
	Refrigeration systems:	For storing easily perishable products
	Ventilation systems:	Take advantage of the large ventilation openings and air extractors to improve circulation in the warehouses and covered pavilions
	Water systems:	Cleaning merchandise and maintaining the freshness of the products on display

Bouaké Market (Ivory Coast)		
Category	Description	
	Drainage systems:	Rainwater drainage in areas subject to frequent washing
	Drying facilities:	Transformer rooms and switchboards connected to the national grid and using emergency generators
	Drying plants:	Post-harvest treatment of agricultural products
Treated products	Main products processed and marketed:	Fruit and vegetables: tomatoes, onions, potatoes, bananas and mangoes. Grains and legumes: corn, rice, millet and beans
		Grains and Legumes: corn, rice, millet and beans.
		Livestock products: beef, poultry and fish
		Processed products: flours, spices and vegetable oils
Licensing structure	The market emphasizes food products and the city of Bouaké, due to its central location, plays a key role in Côte d'Ivoire's domestic and sub-regional trade. The GROSSIST market in Bouaké is a 30,000 m² indoor space with 600 stores in 28 halls. The Ministry of Côte d'Ivoire has commissioned SETAO to create a GROSSISTA storage area for kola nuts and dried fruit. Warehouses, administrative buildings, a bank, a computerized truck weighing machine and staff accommodation complete the construction of this facility.	
Implications of CAAM	What is interesting about this example is the agro-industrial zone, where agricultural products are transformed into finished or semi-finished products, to minimize the waste of fresh produce in the market. CAAM intends to do the same, so it's important to study how this has been done in other markets.	

Table 5 : Bouaké market data



Figure 16 : Market perspective



Figure 17 : External view of the market



Figure 18 : Aerial view of the market

1.6. Tshwane Market (South Africa)

Tshwane Market (South Africa)		
Category	Description	
General data	area	110 ha (includes 65 ha of covered area, and an outside area for parking lots for trucks and light vehicles, green areas and drainage infrastructures, logistics parks and internal roads for transporting goods)
	Inauguration	/
	Financing	Financial support from the Tshwane municipal government
Location	Geographical context	Situated in the heart of Pretoria, South Africa's administrative capital, in the Tshwane Metropolitan Municipality in the Gauteng province.
	Nearby infrastructures	Warehouses, wholesale stores, supermarkets, but also small stores and a residential area. Everything is connected thanks to the main arterial roads (N1 and R101); there are service stations for refueling and servicing vehicles
(Functional Areas)	Sales area	Transactions between producers, wholesalers and buyers, both for wholesale and retail sales
	Warehouse and storage area	Temperature-controlled sorting and storage of products
	Logistics areas	Loading and unloading goods for transportation to and from the market
	Support services area	Banking and financial services, small kiosks and restaurants with attached toilets
	Administrative area	Offices for market management, administration and control of operations
Structures and Constructions	Type of construction	Prefabricated steel and reinforced concrete structures without the use of pillars. The roof is made of galvanized steel or corrugated sheet metal and has openings for natural ventilation. Cooling areas are designed with high-quality insulation materials. The floors and foundations are made of reinforced concrete and the roads are paved with exclusive lanes.
	Service technologies	
	Refrigeration systems:	Cold rooms of different sizes and centralized refrigeration systems
	Electrical systems:	Centralized power supply connected to the national grid with the help of emergency generators
	Plumbing systems:	Connection to a centralized water network, a system of specific facilities for cleaning goods and sanitizing surfaces and a drainage system that manages water disposal
	Waste management facilities:	Systems for compacting waste, reducing its volume, and a composting system
	Security installations:	Video surveillance to monitor activities, fire prevention systems with extinguishers, sprinklers and smoke detectors, and access control

Tshwane Market (South Africa)		
Category	Description	
Treated products	Main products processed and marketed:	Fruits and vegetables: citrus fruits, apples, pears, bananas, tropical fruits, seasonal fruits, tomatoes, potatoes, onions, cabbage, broccoli, peppers, carrots, zucchinis and other green leafy vegetables
		Fish and meat products: fresh fish, seafood, beef, chicken, pork and lamb
		Dairy products: fresh milk, cheese, yogurt and butter
		Bakery products: bread, croissants, pastries and other fresh bakery products
		Dried and packaged products: vegetables, cereals, nuts, seeds, pasta, spices and long-life products
		Processed products: fruit juices, jams, snacks, cookies and industrial sweets
Licensing structure	It has a ripening center with 6,377 m2 of floor space, 49 rooms and a capacity for 60,380 boxes a week. The cold rooms consist of lower cold rooms with 1,087.99 m2 of floor space and upper cold rooms with 2,115 m2 of floor space. -The double lane entrance to the facilities will also facilitate traffic flow for all the different participants who are expected to visit the market. -The new cafeteria will contribute to a pleasant shopping experience. -Cooling and ventilation systems to ensure a continuous supply of fresh produce	
Implications of CAAM	This market is clearly focused on large-scale distribution and retailers, and does not provide specific services to producers to help them improve their know-how. However, its building structure is interesting and can be inspiring: the internal division, which can be freely adapted to accommodate small and large producers, thanks to the division without internal walls; and the ventilated roof structure, which helps to improve internal conditions also in areas that are not directly refrigerated. das. Another interesting aspect is related to materials: lightweight materials reduce construction and maintenance costs, translucent panels maximize natural light by reducing lighting needs, and high-quality insulation materials minimize energy consumption.	

Table 6 : Tshwane market data



Figure 19 : Inside the market



Figure 20 : Inside view of the market



Figure 21 : Structure of the complex



Figure 22 : Internal view of the market

1.7. Joburg Market (South Africa)

Joburg Market (South Africa)		
Category	Description	
General data	area	65 ha (includes 30 ha of covered area and an outdoor area for logistics purposes, such as temporary storage, loading and unloading and parking lots for commercial vehicles)
	Inauguration	/
	Financing	Financial support from the City of Johannesburg Municipal Government
Location	Geographical context	Vegetables: green leafy vegetables, onions, tomatoes, peppers, zucchinis, fresh pulses and herbs.
	Nearby infrastructures	Warehouses, service stations, vehicle service centers, commercial suppliers and residential areas. There are national roads and highways, including the N12 and R59, and a train station
(Functional Areas)	Sales area	Transactions between producers, wholesalers and buyers
	Warehouse and storage area	Product flow and storage
	Loading and unloading area	Loading and unloading goods for transportation to and from the market
	services	Market administrative offices, banking and financial services and small kiosks and restaurants
	Laboratory area	Food safety compliance monitoring of agricultural pesticides
Structures and Constructions	Type of construction	Modular layout of the storage and distribution areas, built with high-performance insulation materials. The foundations are made of steel and reinforced concrete. Roofs made of sheet metal and supported by a structure of steel or aluminum beams.
	Service technologies	
	Refrigeration systems:	For preserving fresh produce
	Mechanical ventilation systems:	To maintain correct air exchange
	Handling systems:	Conveyor belts and goods elevators
	Hydro-sanitary installations:	Connection to the national drinking water supply and wastewater disposal network

Joburg Market (South Africa)		
Category	Description	
	Fire-fighting systems:	Sprinklers, internal and external fire hydrants and smoke detectors
	Energy installations:	Photovoltaic panels and energy storage systems
	Electrical installations:	Connection to the national network to allow mechanical installations to operate
	Maturation facilities:	Banana ripening facilities
Treated products	Main products processed and marketed:	Fruit: citrus fruits, tropical fruits, stone fruits, apples, pears and grapes
		Vegetables: green leafy vegetables, onions, tomatoes, peppers, zucchinis, fresh legumes and herbs
		Tubers: potatoes, cassava and yams (less common, but highly sought after in African communities)
Licensing structure	As value-added services, the market has 55 cold rooms that can accommodate 4,561 pallets of fresh produce and 50 banana ripening rooms that can handle 1,590 pallets of bananas at any one time. JM is the only national fresh produce market in the country that has an in-house chemical testing laboratory. JM monitors the food safety compliance of agricultural pesticides used in the production of food destined for the local market through regular product testing, evaluation of test results and subsequent interventions with producers and relevant government authorities.	
Implications of CAAM	This is a pure wholesale market, which does not provide direct services to improve local agricultural production, so not all the functions envisaged for the new CAAM are represented. However, it may be useful to take into account the way in which this structure has been built: high-performance insulation materials, such as sandwich panels, reduce energy consumption and ensure a stable environment for storing products, the roofs have natural ventilation systems, and the clear roofs have a high level of ventilation. Translucent roofs and photovoltaic panels reduce energy costs. Another interesting aspect is modularity: the storage and distribution areas are divided into modules that can be easily adapted to changes in the volume and type of goods. This design makes it possible to reorganize spaces according to seasonal demand or changes in the flow of goods.	

Table 7 : Joburg market data



Figure 23 : Inside the market



Figure 24 : Inside the market

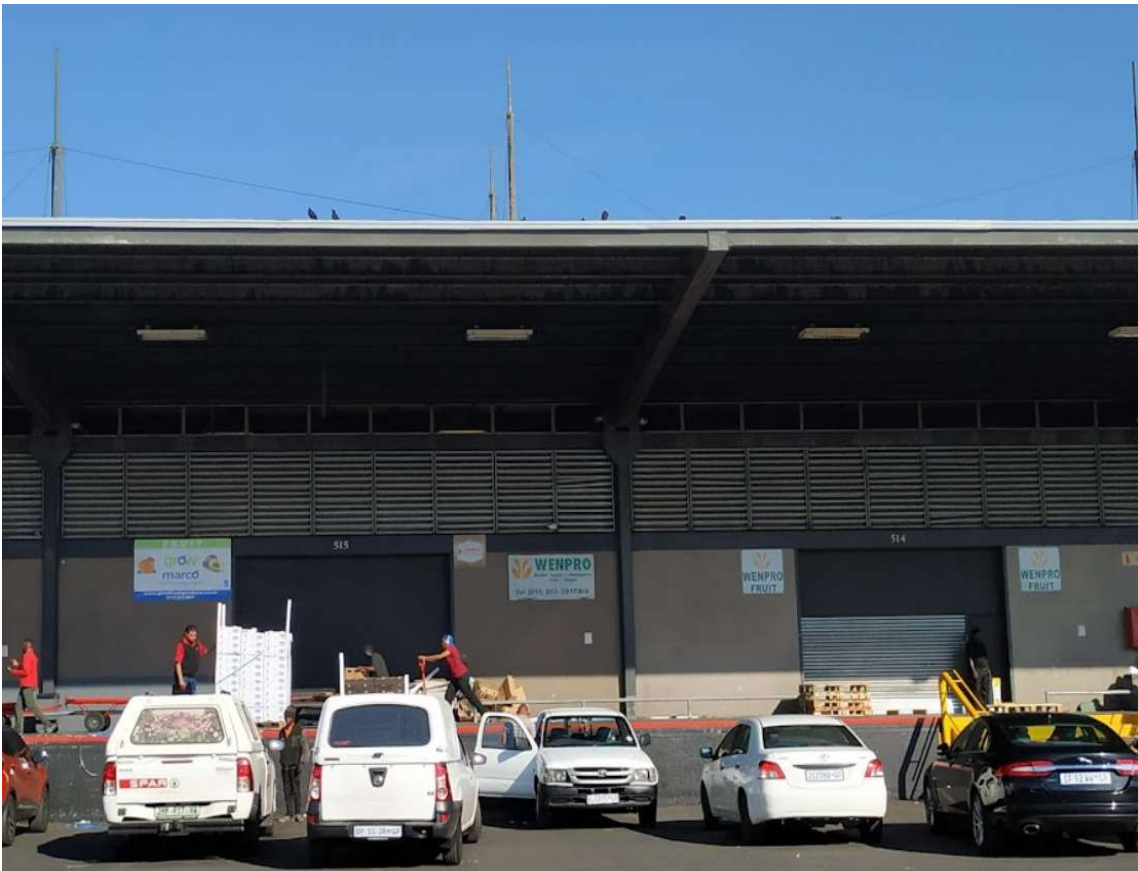


Figure 25 :Perspective of the complex



Figure 26 : Inside the market

1.8. CAAT-Food Center of Turin (Italy)

Turin Agri-Food Center (Italy)		
Category	Description	
General data	area	70 ha (includes 48 ha of covered area and an external area intended for logistical purposes, such as temporary storage, loading and unloading operations, commercial vehicle parking, waste disposal areas and internal road areas)
	Inauguration	1989
	Financing	Financial support from a combination of funds, including the Italian state and some private investors
Location	Geographical context	Located in the municipality of Grugliasco, in the province of Turin, Italy
	Nearby infrastructures	Warehouses, sorting centers, companies linked to large-scale distribution and the agri-food chain in various districts. There are service stations, national roads and two railroad stations
(Functional Areas)	Fruit and vegetable market area	Transactions between producers, wholesalers and buyers
	Producer area	170 farms are housed in these facilities
	Storage and deposit area	Flow and conservation of products through cold rooms and warehouses

Turin Agri-Food Center (Italy)		
Category	Description	
	Loading and unloading area	Dedicated to loading and unloading goods
	Outdoor canopy	Logistics operations, protection of goods and parking of temporary markets
	Support services	Managing and supporting market activities
	Transformation zone	Processing of agri-food products for sale in the center
Structures and Constructions	Type of construction	The supporting structure is made of a combination of structural steel and reinforced concrete. The foundations are made entirely of reinforced concrete. The roof is made of lightweight but resistant materials. Trapezoidal sheet panels or composite materials are used. The vertical fills are made of precast concrete panels. The interior and exterior floors are made of industrial concrete. The surfaces are treated with wear-resistant materials and have an anti-slip finish to ensure the safety of operators and vehicles. The exterior roofs are built with modular steel structures.
	Service technologies	
	Refrigeration systems:	Preserving fresh produce using cold rooms
	Mechanical ventilation systems:	Promote air circulation in work and storage areas and maintain optimum temperatures and environmental conditions for staff and products
	Handling systems:	Conveyor belts and goods elevators for the transportation and automatic handling of boxes and pallets
	Hydraulic systems:	Connected to the national drinking water supply and sewage drainage network
	Security installations:	Fire extinguishing systems with smoke detectors, sprinklers, hoses and extinguishers, video surveillance systems with cameras located in all interior and exterior areas and access control
	Electrical installations:	Connected to the national network to allow the mechanical installations to operate
Treated products	Main products processed and marketed:	Fruits and vegetables: apples, pears, citrus fruits, grapes, bananas, exotic fruits, small fruits, tomatoes, zucchinis, eggplants, peppers, salads, carrots, potatoes, onions, cabbages and other green leafy products
		Seasonal products: mushrooms, truffles and chestnuts

Turin Agri-Food Center (Italy)		
Category	Description	
		Processed fresh produce: packaged fruit and vegetables and pre-cut salads
		Dried products and herbs: chickpeas, lentils, beans, basil, parsley, rosemary and other spices
Licensing structure	The center now guarantees the best usability and purchasing opportunities for fruit and vegetables, acting as a link between the production areas and the places of final consumption. In fact, it houses important companies specializing in marketing and, in some cases, also in the processing of wholesale fruit and vegetable products. The AFCT connects a dense network of actors capable of completing the entire life cycle of a fruit and vegetable product: acquisition, storage, processing and marketing.	
Implications of CAAM	CAAT is an excellent demand-driven exchange platform; although there are no services directly aimed at producers, there is room for them to sell their production. Also very interesting are the technological systems and the structure of the buildings, which guarantee strong durability and low maintenance, while also having excellent environmental performance (both in terms of insulation and surface resistance).	

Table 8 : Data from the Turin Agri-Food Center



Figure 27 : Floor plan with functional area



Figure 28 : Internal view of the market



Figure 29 : Internal market structure



Figure 30 : Perspective of the complex