



# Business Opportunity Mapping for Luxor Governorate



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# Study Background and Purpose

One of Egypt's South Valley governorates, Luxor has an abundance of mineral wealth, agricultural reclaimable lands, historic monuments, labour, as well as an industrial zone—the New Thebes industrial zone. Luxor's resources grant it great potential for economic and social development and competitiveness; however, the governorate faces systemic challenges and inefficiencies along its value chains that hinder its ability to do so, which is reflected in the governorate's low gross domestic product, low incomes, and a high poverty level.

With the aim of elucidating Luxor's business opportunities through identification of gaps within value chains, and the overarching objective of enhancing youth-led economic activities, this report will outline the structures of the agriculture, manufacturing, tourism, and handicrafts industries along with their sub-sectors, using the Rapid Market Assessment (RMA) approach. The sectors selected were determined to be the most suitable through preliminary desk research on the economic context of the governorate, as well as interviews with experts in the region.

The business opportunity mapping, upon which this report is based, is prepared with a research-inclusive techniques and a methodology that combined both quantitative and qualitative data and analyses. The analysis minimized bias and inferred information by utilizing different sources for data collection. The methodology also considered Enroot's ethical considerations, ensuring all participants were informed in their participation in the study and were aware of the study's objectives and scope. In cases of audio or video recording, respondents' verbal or written consent was obtained.

Primary resources were obtained through qualitative data collection using in-depth interviews (IDIs) and focus groups (FGDs) with producers, input suppliers, and traders involved across markets of sugarcane, fennel, pumpkin, tomatoes, dairy, compost, biogas, clay crafts, and loom. Secondary resources, particularly the Central Agency for Public Mobilization and Statistics (CAPMAS) annual bulletins and governorate and sectoral reports, were the primary source of quantitative data and governorate profiling.

Through Enroot's primary research, and according to regional experts' opinions, the agriculture and tourism sectors—where the tourism sector is closely linked with the creative sector—were identified to be the primary and most engaged with sectors in Luxor; however, as the sectors are characterized by informality, official data is either unavailable or not representative. As such, existent value chains within the prominent agriculture and tourism sectors were selected then assessed through a RMA approach to identify current gaps and opportunities, which could later be translated into business and self-employment opportunities across the value chain stages. Note that as the tourism sector has been greatly affected by the COVID pandemic on a global level, the sector was not considered in this analysis.

# Agribusiness opportunities

Assessment of the agricultural sector indicated that the sugarcane, tomato, banana, cantaloupe, and grape crops hold great potential for job creation as they have high untapped potential for value addition as they would feed into the leading industries in the governorate and hold a competitive edge to other Egyptian governorates. The below table summarizes the abovementioned features across the four identified crops, in addition to Luxor’s untapped export potential for each crop, according to the data available through the International Trade Centre (ITC).

Cultivated area	Quantity produced	Potential for value addition	Untapped export potential of by-products	Highest potential markets
<b>Sugarcane</b>				
65,297 feddan (2018)	2.5 million tons (2018), amounting to 19.6 percent of total national production.	Waste-management and recycling related, including: animal feed, compost, ethanol, bagasse, biogas, and vinegar and yeast.	Molasses: 1,274,000	UK: \$209,000 Ireland: \$183,319 France: \$175,028
<b>Tomato</b>				
11,053 feddans (2019)	232,922 tons (2019), amounting to 3 percent of national production of tomato.	Greenhouses, post-harvest centers, collection hubs; processing, storage, and refrigerating units.	Prepared: \$1,377,000	Libya: \$537,000 Saudi Arabia: \$99,000 Iraq: \$87,000
			Fresh: \$1,035,000	Saudi: \$120,000 Russia: \$102,000 UAE: \$78,000
			Ketchup and sauce: \$831,000	UAE, Iraq, and the UK
<b>Banana</b>				
6,819 feddans (2017/2018)	79,012 tons (2017/2018), estimated at 6 percent of total national production.	Greenhouses, post-harvest centers, and collection and processing hubs for banana harvest waste.	Fresh or dried: \$516,000	Germany: \$52,662 Belgium: \$43,266 France: \$43,116

Cultivated area	Quantity produced	Potential for value addition	Untapped export potential of by-products	Highest potential markets
<b>Grapes</b>				
938 feddans (2019)	6,260 tons (2019)	Greenhouses, post-harvest centers, pre-cooling facilities, and cooling facilities.	Fresh: \$830,610	USA: \$171,930 Russia: \$71,940 Spain: \$50,490
			Dried: \$3,009	UK: \$517 Turkey: \$339 Germany: \$233
<b>Cantaloupe</b>				
N/A	N/A	Greenhouses, post-harvest centers, pre-cooling facilities, and cooling facilities.	Fresh melons, excluding watermelon (national export potential): 5M	UK: 1.1M Spain: 528.4K Netherlands: 463.3K
			Melon or citrus fruit peel (national export potential): 187.5K	Italy: 47.9K Spain: 24.5K France: 23.8K

As official figures for governorates' export potential for crops aren't available, an approximate of was calculated based on the national export potential for the target crops and the governorate contribution to national production of the target crops.

### Sugarcane-based opportunities

Sugarcane cultivation is concentrated in Esna and Armant. Sugarcane has two main, by-products: de-sugared molasses—of which vinegar, yeast, and ethanol are produced—and sugar. Like other governorates, Luxor doesn't capitalize on recycling and waste-management activities to producing bagasse, compost, and animal feed from sugarcane factories' waste, and animal feed from sugarcane farmers' sugarcane stubble—the stamps of grain and other stalks fallen in the processes of cutting the sugarcane crop.

Although composting is undertaken in Luxor, there is still a lack in the number of collection hubs and standard-meeting compost processing facilities. This creates a waste-management sector-based opportunity for the establishment of collection and processing hubs that can service the livestock sub-sector. That said, current laws and regulations governing the industrial sector in Egypt prohibit individuals and private businesses to sell and transport biofuel, and legal procedures to issue permits for factories are lengthy, costly, and deeply perturb industries in the region. Accordingly, the main suggested business opportunities and development interventions in the sugarcane-based productions are to initiate bagasse processing, while accounting for the needed policy-level changes for such production to come about, initiate the processing of juicery's waste into compost and animal feed, and to produce units to produce ethyl and methyl alcohol and yeast in proximate areas to sugarcane cultivated areas, while accounting for the needed policy-level interventions to stimulate the business environment to be suitable for such businesses to emerge.

## Tomato-based opportunities

Tomato production in Luxor is clustered in Esna, although clusters are slowly transitioning to new and more productive lands. Varieties 86, 014, 010, and "brivio" are the main cultivated varieties. Tomatoes are either fresh locally or dried internationally; however, although there are some drying facilities in Luxor, they are very few and reject much of the tomatoes supplied to them due to a very strict policy—if more than 5 percent of the inspected sample crate is rejected, then the shipment is entirely rejected. Additionally, the only tomato processing undertaken is the production of sun-dried tomatoes, with no processing of tomatoes into tomato-based products such as tomato paste, juice, sauce, and ketchup. It's important to note that much of the cultivated tomato is lost (an estimated 40 to 50 percent) in the process of transportation to processing facilities, which necessitates the creation of agro-industrial zones wherein collection and processing facilities can be established in close proximity to cultivation areas.

Given the over-supply of fresh tomatoes to the local market, the unfulfilled export potential, the undertaking of development interventions to increase the quality of cultivated tomatoes, and the application of policy-level intervention to create agro-industrial zones, there is a significant and largely untapped opportunity in the collection, processing, and storage and refrigeration of tomatoes; as well as the establishment of greenhouses and post-harvest centers.

## Banana-based opportunities

Luxor has a large production cluster of bananas, mostly concentrated in Esna—one of the largest banana farming centers in Egypt. Bananas are almost entirely sold locally as fresh produce. As such, the recycling of banana waste and its incorporation into products, such as handicrafts, is neglected. This is an especially large opportunity considering the high costs of handicrafts' input materials and the high demand, especially by tourists, for such traditional and culturally unique handmade products, as well as environmentally friendly products. Business opportunities lie in the establishment of greenhouses, post-harvest centers, and collection and processing hubs for banana harvest waste.

## Grape-based and cantaloupe-based opportunities

Luxor has a large production cluster of bananas, mostly concentrated in Esna—one of the largest banana farming centers in Egypt. Bananas are almost entirely sold locally as fresh produce. As such, the recycling of banana waste and its incorporation into products, such as handicrafts, is neglected. This is an especially large opportunity considering the high costs of handicrafts' input materials and the high demand, especially by tourists, for such traditional and culturally unique handmade products, as well as environmentally friendly products. Business opportunities lie in the establishment of greenhouses, post-harvest centers, and collection and processing hubs for banana harvest waste.

Luxor produces approximately 0.33 percent of the national grape production, and exports about 60 percent of cultivated grapes. As Luxor is capable of producing grapes at a time of the year wherein other countries do not, and as returns from exports are higher than those of the national market, farmers target the international market and are therefore highly aware of the required export standards. Accordingly, the business opportunities within the industry are primarily in the establishment of cooling and pre-cooling facilities, post-harvest harvest facilities, and in by-products of grapes, such as vine leaves.

In the same line, Cantaloupe is a highly strategic crop in Luxor as it is mostly exported. The crop has an advantage of being cultivated year-round and in new lands.

As with other fresh exported crops, both grapes and cantaloupes require pre-cooling and cooling facilities, which are in scarce supply in Luxor. This presents a business opportunity in a high-return sector, which is minimally capitalized upon. Other opportunities lie in the establishment of greenhouses and post-harvest centers.

## Key general take-aways for agribusinesses

In Luxor—and in Upper Egypt more generally—many policies, that can often be difficult to navigate, heavily regulate and impede the ability of waste-management businesses to establish factories and processing facilities,

Accordingly, policy level interventions must be undertaken to address such restrictions and, in tandem, facilitate the creation of agro-industrial zones near cultivation areas and collection hubs to minimize crop loss and increase efficiency.

Additionally, development interventions must be undertaken to address the common bad farming and post-harvesting practices and modernize both processes to improve efficiency, productivity, quality, and hygiene.

## Creative opportunities

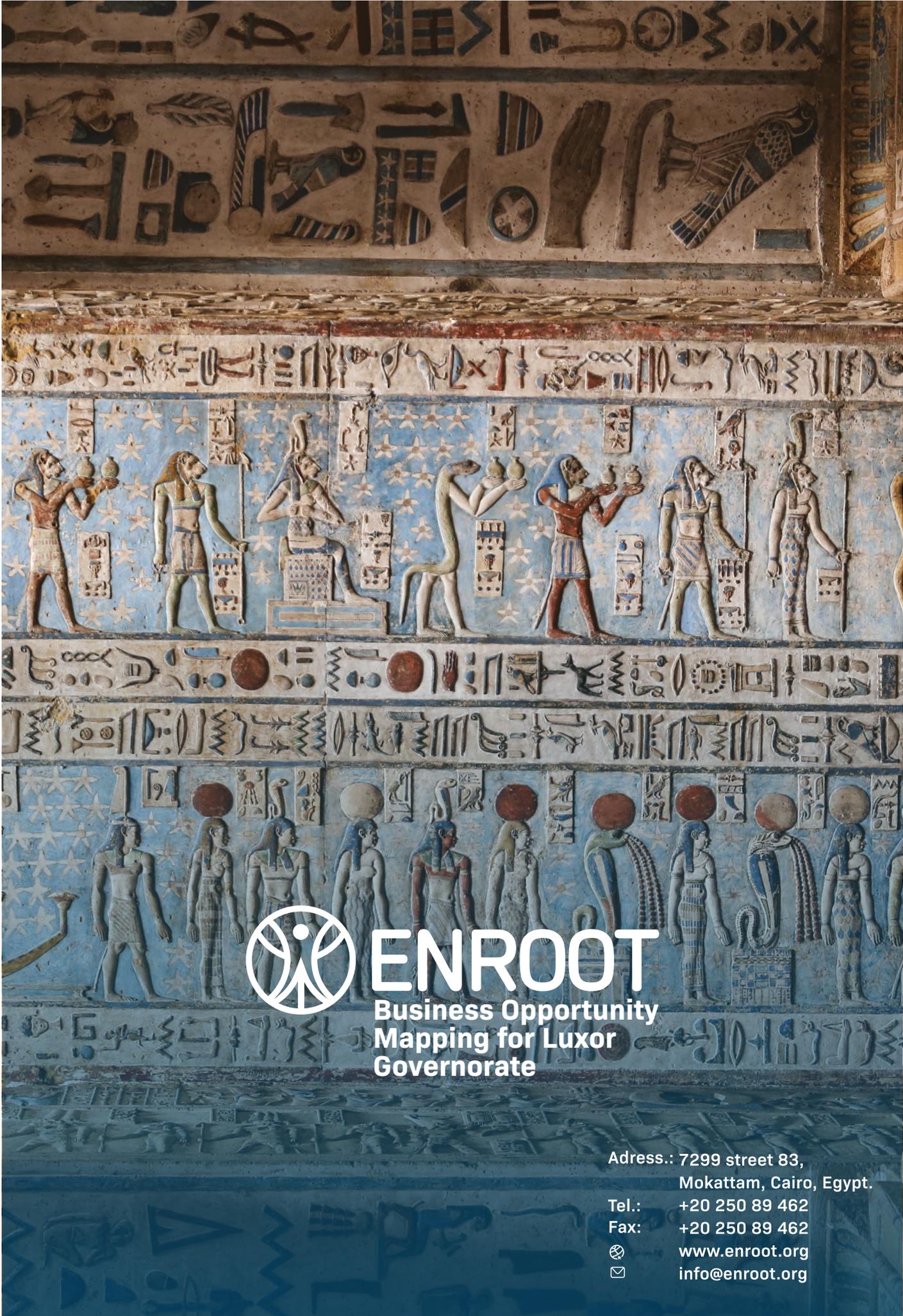
### Wicker (Khoos)

Due to the abundance of palm trees and the long history of wicker weaving in Luxor, tracing back to ancient Egyptians, palm waste is fully utilized—palm trunks are used in building materials and in the crafting of chairs of tables, and palm leaves are used to make a wide variety of wicker products, such as chairs, bags, and baskets. The craft; however, isn't marketed or branded. Consequently, artisans have low access to markets and the unique and rich characteristic of their products aren't communicated to both local and foreign consumers. Suggested opportunities are; therefore, in the marketing and branding of wicker products.

The following table underlines the available business opportunities available within the sector, while also noting relevant and enabling development and policy interventions. Note that agro-waste related opportunities are also presented separately, as well as where they exist within the agribusiness sector, for clarity.

Sub-sector	Business Opportunity	Development Intervention	Policy Intervention
<b>Agribusiness</b>			
Sugarcane	<ul style="list-style-type: none"> <li>- Waste collection hubs.</li> <li>- Processing facilities that would process waste into compost, ethanol, biogas, vinegar, yeast, furniture, and paper.</li> </ul>	<ul style="list-style-type: none"> <li>-Educating farmers about the composting, recycling, and animal feed potential for their crops' waste.</li> <li>-Advocacy of forward and backward linkages through measures such as contract farming.</li> <li>-Improving bad farming and post-harvesting practices and modernizing both processes to improve efficiency, productivity, quality, and hygiene.</li> </ul>	<ul style="list-style-type: none"> <li>-Lobbying for the improvement of agro-waste and biogas regulations.</li> <li>-Facilitating the establishment of agro-industrial zones.</li> <li>-Addressing the difficulties in acquiring permits, licenses, and registration papers; as well as the high costs of land rental and buying.</li> </ul>
Tomato	<ul style="list-style-type: none"> <li>-Greenhouses, post-harvest centers, collection hubs, and refrigerating and storage facilities.</li> <li>-Processing facilities and factories to process tomatoes into tomato sauce, paste, and juice; as well as ketchup</li> </ul>		
Banana	<ul style="list-style-type: none"> <li>-Greenhouses, post-harvest centers, and collection and processing hubs for banana harvest waste.</li> </ul>		
Grape and cantaloupe	<ul style="list-style-type: none"> <li>-Greenhouses, post-harvest centers, collection hubs; as well as pre-cooling and cooling facilities, and storage facilities.</li> <li>-Production and processing of by-products, such as grape vines and cantaloupe peel.</li> </ul>		

Sub-sector	Business Opportunity	Development Intervention	Policy Intervention
<b>Agro-waste</b>			
Compost	<ul style="list-style-type: none"> <li>- Waste collection hubs.</li> <li>-Processing facilities that would processes sugarcane, and other agriculture waste into compost.</li> </ul>	<ul style="list-style-type: none"> <li>-Advocacy of forward and backward linkages through measures such as market linkages and contract farming.</li> </ul>	<ul style="list-style-type: none"> <li>-Lobbying for the improvement of agro-waste and biogas regulations.</li> <li>-Facilitating the establishment of agro-industrial zones.</li> <li>-Addressing the difficulties in acquiring permits, licenses, and registration papers; as well as the high costs of land rental and buying.</li> </ul>
Biogas	<ul style="list-style-type: none"> <li>- Initiate the production of biogas as a cheaper and environmentally friendly alternative to electricity, which can be linked to all other sub-sectors, and would necessitate policy interventions.</li> <li>-Waste collection hubs and processing facilities.</li> </ul>		
<b>Creative Industries</b>			
Wicker	<ul style="list-style-type: none"> <li>-Marketing and branding companies or freelancers.</li> <li>-Wicker products businesses.</li> </ul>	<ul style="list-style-type: none"> <li>-Branding emphasizing Luxor's wicker and its products as culturally significant and environmentally friendly.</li> <li>-Investing in design and R&amp;D to improve upon the quality and characteristics of Luxor's wicker and its products.</li> </ul>	



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