

INTRODUCTION

- Sudan boasts natural resources and raw materials that are important prerequisites for a good investment environment, yet, Sudanese society is generally considered to be a non-productive consumer society; therefore, it needs large-scale production projects to change the situation.
- Sudan, in the international trade, has been known for the export of good cotton and has a brilliant reputation in this field; it exports all types of cotton (short, medium and long staple).
- Based on this diversity of cotton types in Sudan, it is qualified to be self-sufficient and to export products of the spinning and weaving industry, providing job opportunities and helping development in general.
- The textile industry has been one of the strongest and most important industrial sectors supporting the economy since the 1950s, due to its significant contribution to the gross domestic product.
- According to a report issued by the Federation of Industrial Chambers, 13 out of 16 factories have stopped working. Production decreased from 168 million yards at the end of the last century to less than 8 million yards at the beginning of this decade. The country's consumption of textile products has increased from «50» million meters to more than «400» million meters in many estimates.
- The textile industry can be built and spread in different areas in Sudan, which helps to reduce the migration of the rural population to the cities by providing jobs in their areas.
- It serves as a vital investment for the overall improvement in a country's economy. It has the power to accelerate the food industry, service industries, the automobile industry and the health industry.

Project's Title:

- **TEXTILE FACTORY (AL JAZIRAH STATE)**

Project's Definition:

- It's a textile industrial building that produces yarn, woven and knitted fabric made of cotton for the civilian use, and provides all the services needed.

Project description:

- It's a design of a group of spaces that provides the appropriate environment and the operational factors for the production activities of the textile industry (spinning, weaving, knitting) with its various serialized stages and their supporting activities, considering the evolution of the sustainable architectural and industrial design.

Project level:

- National.

Beneficiaries:

- Consumers (Traders, distributors, Sudanese people as a whole), employees, owners.

Main components:-

- Production halls: -
 - Spinning hall: divided into four sections (blow room, carding zone, rotor spinning, and dye zone).
 - Knitting room.
 - The weaving lounge: It has four sections (warping zone, sizing zone, weaving zone, inspection zone).
 - Dyeing.
- Stores.
- Administrative building.
- Service Buildings.

The Purpose of the Project:

- Designing an industrial building that accommodates all the main and supporting textile production activities, which produces a low-cost yarn and fabric with good quality to supply Sudan's local market with $\frac{1}{4}$ of its needs of textile products, considering all the project's aspects.

The Objectives of the Project:

- **General objectives:-**
 - Fulfilling the local market textile needs.
 - Decrease Sudan's dependency on textile imports, while at the same time increasing cotton export rates.
 - Achieving sustainable development through the locating of industrial projects in rural communities, especially poor ones.
 - Creating diversity business opportunities away from the oil sector.
 - Provide managers and textile specialists with advanced training programs.
- **Specific objectives:**
 - Create the optimal environment for production.
 - Create a healthy environment and reduce negative industry impacts considering sustainability.
 - Use advanced methods of industry.
 - Choose a suitable location that expedites the raw material obtaining at the lowest possible cost.

Reasons of Choosing the Project:

- The country's need for productive projects to improve the national economy.
- The need for job opportunities in different fields.
- Investing the available local resources (raw materials (cotton), manpower, experiences ...)
- To encourage local products and reduce the full reliance on imports by providing a low-cost high quality local product that competes with the exported product.
- Reviving and developing the textile industry and improving its environment.

Aspects of the Project:

Functional:

- Training and developing employees to raise efficiency.
- Creating the optimal environment for production.

Structural:

- Raising the level of civilization in the architectural facilities and the use of modern construction methods taking into account the cost of construction.
- Design a landmark in the region

Economical:

- Creating an added value by manufacturing the Sudanese cotton.
- Increasing the local production, covering the local market needs.
- The development of the Sudanese textile industry will boost the production of one of Sudan's top export products; cotton.
- Reducing the unemployment rate.
- Establishing a large production project will draw the attention of other investments and will encourage the establishment and development of local productive projects.
- Brings back the textile industry to the centre of the industrial sector.

Social:

- The textile industry is the best cure for unemployment because not only does it require a significantly large manpower, but it also supports other sectors by creating new job opportunities.
- Minimizing internal immigration by localizing industrial projects in rural communities, specially the poor ones.

Cultural:

- Reflects Sudan's culture through the products.

Strategy and methodology:-

- Study the main and supporting activities and human components.
- Determine the spatial and environmental requirements to get the optimal and most appropriate spaces.
- Research for the globally advanced industry methods.
- Compare between them and choose the best one to be applied in Sudan in every aspect (economical, technical, environmental... etc.)
- Choose a suitable location that expedites the raw material obtaining at the lowest possible cost..