

Principles and Criteria for Evaluating the Sustainability of Leading Development Projects for Priority Definition

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Abstract

This research aims to develop a set of principles and standards that assist in the assessment process of leading development projects that assure the sustainability of such projects so that we can define the priorities and consequently kick-off a project that achieves the highest principles and standards from the environmental, economic, and/or social point of view in order to complete the sustainability system of this project through the recognition of the concepts of leading development projects and their different dimensions as well as explicitly studying and analyzing some of the global leading experiences to derive a set of sustainable principles and standards that can be implemented to a group of pioneering projects in Egypt to resolve which is better to start with.

Keywords: Leading Development Projects (LDP) - Evaluation Methodology – Sustainability (EMS) - Principles and Standards for Sustainability (PSS)

Problem statement: Assessment of leading development projects in order to identify their priorities.

The main challenge: How to develop an approach to evaluate the leading developmental projects to determine their priorities?

LEADING DEVELOPMENT PROJECTS (LDP)

The concept of leading development projects

The leading development project is the one characterized by its capability to develop and grow in order to meet both the domestic and international economic crises as well as seek to achieve comprehensive developments in all the State sectors and integrate them, too, which correct the existing acute imbalances within the investments distribution as well as the development revenue between different regions and provinces in order to reduce the economic and social disparities, exploiting the available tools to create new areas for businesses and people to achieve sustainable development.

Dimensions of leading projects[1]

The nature and dimensions of the leading projects are based on the application of several economic and social development goals in Egypt. This entails increasing employment opportunities, production, expansion of agricultural and industrial exports, and consequently increasing the national income per capita. This is linked to the consolidation of vertical and horizontal integrations, which

could be fulfilled through using the available water, energy and human resources in the vicinity of such projects areas.

The most important national dimensions of leading projects are defined as follows:

- Attracting human resources and supporting belonging and loyalty by making available a range of complementary social services such as education and healthcare, which coincides with the economic status of the projects.
- Achieving a qualitative leap in growth is doable through simultaneous contributions of industrial, agricultural, mining and service activities.
- The spatial dimension, which represents a balance of the distribution patterns of investments and the development revenues between the different regions and governorates of Egypt.
- The temporal dimension that meets a national production goal through balancing future investments and their sectorial and spatial distribution.
- The investment dimension that lies in the nature of the leading projects whose investments vary between infrastructure and urban development and their corresponding social services and human development as well as investing in agricultural, industrial, tourism and service development.
- The diversity of development areas, which could be met through achieving a comprehensive integrated development.
- Achieving vertical and horizontal development, where vertical development could be achieved by creating connected and integrated projects to the studied leading project. On the other hand, the horizontal development could be achieved through the horizontal expansion/sprawl of urban development to create a balance between different regions and governorates.

Objectives of the assessment process of the leading development projects[2]

- Optimize the use of available resources achievable through ensuring that the evaluation process account for the interrelationships between the proposed project and the existing projects.
- Risk-mitigating of the invested funds.

- Redirecting the invested funds to the areas that ensure the achievement of the predefined project goals.
- Rationalizing investment decisions.

Principles and criteria of the project evaluation process[2]

- The evaluation process aims to define a kind of compatibility between the considered criteria and the proposed project objectives.
- The project evaluation process ensures that there is a certain level of compatibility between the objective of any project and the objectives of the leading development project's plan and the predefined project objectives in terms of physical, human and technical resources availability.
- There must be consensus and compatibility between the objectives of the integrated and interrelated projects in order to eliminate any conflict between their objectives.
- Provide the necessary inputs to ensure the success of the evaluation process of the project, especially regarding the availability of accurate and comprehensive data.
- The project evaluation process belongs to the planning phase, that comes a prior to the feasibility studies phase and before to the implementation phase.
- The evaluating process must incubate the investment decisions related to implementing or abandoning the proposed project.
- The evaluating process is based on trades-off between several or alternatives projects until the selection of the appropriate alternative.

Phases of the evaluation process of leading projects[2]

- The stages of preparing and formulating the core idea of the proposed project and its alternatives.
- The project evaluation stage includes the following steps:
 - The establishment of the basic principles and criteria of the evaluation process.
 - Preliminary economic and technical feasibility studies.
 - Detailed economic and technical feasibility studies.
 - The evaluation of feasibility studies.
 - The selection of the appropriate criteria for such evaluation process.
- Project implementation phase.
- Project implementation follow-up phase.

Assessment stages of the economic impact of leading development projects[2]

Evaluation of the direct economic impacts of each of the economically prioritized leading projects individually, in order to explain the positive economic effects on the development in terms of following economic indices and indicators:

- Attracting direct local and foreign investment.
- Number of new and added job opportunities generated by the project, named as the basic labor.
- The added-value generated by the project on subject.
- The quantification of the project contribution to the GDP.
- Income of the new and added labor (increase in individual and household income).
- The impact of the economic growth of the sector, in which the project belongs to.
- The value of the purchases of the project products by other sectors, which represent the main operation stream, in terms of energy and infrastructure elements as well as other production inputs with a focus on the calculation of such a value in local units.
- The project Contribution to the reconstruction of new urban areas that have not been built before.

LEADING INTERNATIONAL EXPERIENCES

Leading Project - Jabal Ali Project [3]

Jabal Ali is located 30 km away from the center of The city of Dubai towards the West direction of the capital Abu Dhabi. UAE This area has been dedicated to the realization of the world's largest ports Port Jabal Ali It has one of the largest factories Aluminum in the Middle east Known as DUBAL It has a free industrial zone and injection plant as well as satellite reception station that belongs to the UAETelecom company .It has a five-star hotel with named Hotel Jabal Ali, where this area has expanded and connected with Dubai Also, it began to include important residential areas such as Green Ranches And a huge commercial center called the Ibn battouta It was decided to construct a large airport called Aal Maktoum International Airport As shown in Figure (1)



Figure 1: The detailed Location of Jabal Ali's Region

Project goals

- Providing the proper infrastructure for manufacturing and distribution activities supported by high-level expertise.
- Attracting foreign investments.
- Effective marketing coupled with incentives In order to attract reputable companies that in turn will contribute to the diversification and economic growth.
- Economic revival by dealing with banks and Roof movement.- Creation of job opportunities.

- Continuous development of services and utilities as bridges and highways etc., (the authority is constantly improving its performance in all related work areas by providing high quality services in order to meet individual and collective requirements of commercial, industrial and service companies in the region.
- In order to achieve all the goals, monitoring, evaluating and developing all aspects of governmental provided services through the participation in the quality improvement process supported by providing modern equipment and technology.

Benefits of the project

The establishment of the Jabal Ali project has generated many benefits to Dubai as follows :

- Strengthening the emirate's position as a commercial location in the Middle East through the presence of regional foreign offices of international companies.
- Attracting capital Funds as well as investors, which led to the revival of service sectors (banks- Insurance - contracting .. etc).
- The revitalization of the port movement supported by the presence of a number of shipping tracks as well as the availability of storage and re-export centers, resulting in increased import/export traffic.

Master plan - Jabal Ali Project [4]

Jabal Ali layout includes the following:

- Free zone.
- Industrial zone
- Tech Valley
- Airport
- Tourist areas and resorts
- Future expansion areas as shown in Figure (2)

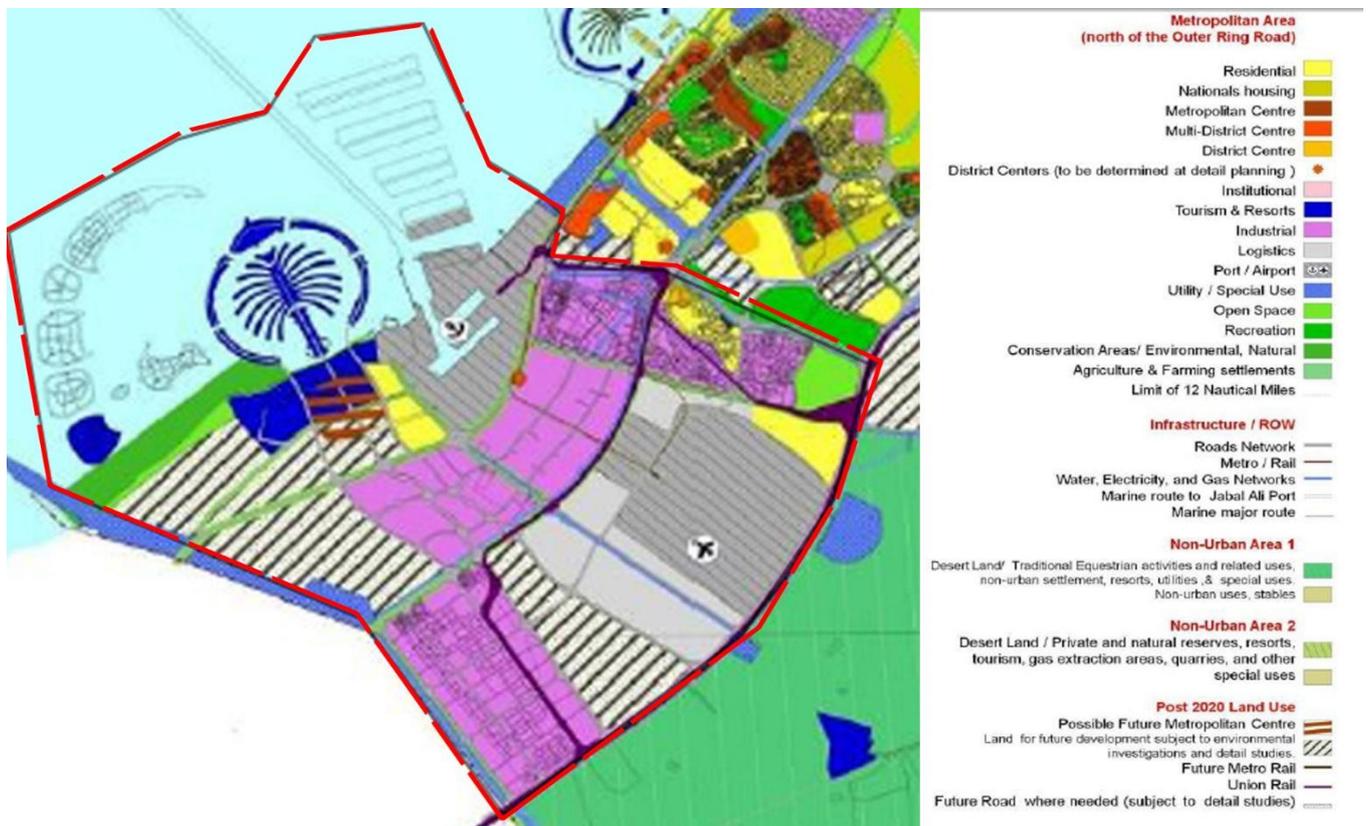


Figure 2: The detailed Location of Jabal Ali's Region



Figure 3: The high connectivity of Jebel Ali project

The strategic location of Jebel Ali [5]

The Jabal Ali is one of the world attractions because of its location between East and West, and being a transient harbor for the global shipping traffic as well as the strategic location of Dubai near the Strait of Hormuz (Gulf) in addition to the easy access to the Arabian Peninsula in turn, this made the multinational countries to use the free zone as a regional headquarters for the distribution of its products to 1.5 billion consumers of the adjacent markets, as shown in Figure (3)

The Challenges facing the Jebel Ali region [5]

- The Political situation in the region.
- The existence of other competitive free-zones.
- The non-recognition of some of the Gulf countries of the products manufactured in Jebel Ali as UAE products therefore impeding its export.
- The existence of some competitive facilities in the Neighboring free zones that may be tempted to the companies to relocate, as well as some adjusting customs duties in Other UAE states from 4% to 1% in order to attract companies to their free zones.
- The World Trade Organization.
- The numerous free zones available within Dubai.
- Attracting the technology offered by the developed countries.

Evaluation of Jabal Ali project [5]

- The free-zone has been a success as it achieved most of its objectives.
- It worked on the creation of a growing economic movement by increasing the number of companies as well as the investments and their growth levels.
- The government has benefited from the increase financial income via the collection of rents and fees.
- It contributed to the economic revival within the emirate of Dubai.

Success and Failures Factors for Jebel Ali Project - United Arab Emirates

- The availability of accessible market that targets more than 1.5 billion consumers, in which 18 million belong to the Gulf markets.
- 100% of foreign investment.
- Income and capital subjected to tax-free policies.
- Tax exemption for fifty years.
- Freedom of money/fund transfer to foreign banks up to 100%.
- No restrictions on currency.
- No restrictions on recruitment and use of staff and labor.
- availability of modern and effective communication devices (Fax - Telecom - Internet - Mail - Telephone)

- Availability of energy from oil and electricity, water and gas.
- The availability of world experienced advice that is administrative problem-free.
- An abundance of excellent transport services (Port Jebel Ali-Port Rashid-Dubai Airport-Cargo Village).
- Existence of healthy environment that attracts investors.
- The excellence of both the administrative and technical teams evident in the fast aerial and marine transportation of goods.

LEADING DEVELOPMENT PROJECTS IN EGYPT

The leading projects are defined as the development projects with economic revenue that are planned and implemented within the framework of the country's balanced temporal and spatial development strategy. based on the integration of all the development efforts, as the state provides the institutional and organizational frameworks for these projects, the infrastructure that supports investment activities, where on the other hand the private sector plays its developmental role as a developer or investor in various economic and social activities.

General objectives of leading projects in Egypt [6]

- Full mobilization of productive capacities and the optimal exploitation of national resources to achieve a comprehensive development (maximizing national product).
- Preserving rare renewable and non-renewable resources such as energy and water resources as well as preserving the agricultural land of the Nile Delta and the narrow strip of the Nile valley and directing the urban movement towards desert areas.
- Reducing the economic and social disparities between the regions and alleviating the urban attraction of Cairo and Alexandria and highly-focus on the economic activities.
- Development of desert areas for strategic and developmental considerations.
- Contribution to correcting the existing imbalance between population growth and inhibited lands.
- Strengthening the competitiveness of the national economy towards foreign markets by promoting productive and commercial centers with comparative and competitive advantages in various regions of the country.

Important leading projects in Egypt [6]

Some of the major operative leading projects that are already being realized or still in the study and/or planning stage include:

- **Development of the Suez Canal Hub As a world-class logistics and industrial center.**
 - The development of the east region of Port Said
 - The development of the tech valley and the new Ismailia as well as the Amal (Hope) suburb.
 - The development of the north-west area of the Suez bay.
- **The development north and the middle of upper Egypt**
 - The golden triangle, the Industrial and mining complex for Safaga-Qena-governorate, as an international mineralization site.
 - Development of transversal axes in upper Egypt and its supporting projects.
- **The development of the western north coast and its corresponding desert region**
 - The development of the western north coast and its corresponding desert region as a worldwide tourism destination.
 - The construction of an urban complex and a world-class tourism center within Al-Alameen region.
 - The development of the Qattarah depression.
- **The Sinai development**
 - Agricultural development project for the area of 400 thousand hectare in North Sinai dependent on El Salam Canal.
 - Industrial development within the center of Sinai.
 - Tourism development within South Sinai.
 - The supporting Projects of the development in North Sinai.
 - Development of upper Egypt through the reclamation and agricultural development projects in Toshka and Darb al-Arbaeen area.
 - The development of Lake Nasser area.
 - The development of the Mining Industries Project in Wadi Al - Alaqi, the South Valley.
- **Other projects**
 - The Development and reconstruction project in the western desert.
 - Wadi Al Natroun Development Project.
 - National Roads Project.

Table 1: Classification of the leading projects in Egypt according to the planning & development

The leading projects		Classification according to its intellectual considerations		
		pole	Hub	region
The development of the Suez Canal As an international Logistics And industrial center	the development of the east region of Port Said	•		
	the development of the tech valley and the new Ismailia as well as the Amal (Hope) suburb	•		
	the development of the north-west area of the Suez bay.	•		
the development north and the middle of Upper Egypt	The golden triangle (the industrial and mining complex for Safaga - Qena – governorate) as an international mineralization site			•
	Development of transversal axes in upper Egypt and its supporting projects		•	
The development of the western north coast and its corresponding desert area	the development of the western north coast and its corresponding desert areas as a global tourism destination			•
	The construction of urbanized communities as well as an international tourism center in Al-Alameen	•		
	the development of the Qattarah depression region			•
Sinai development	Agricultural development project for the area of 400 thousand hectare in North Sinai dependent on El Salam Canal			•
	Industrial development within the center of Sinai	•		
	Tourism development within South Sinai			•
	the supporting projects of the development in North Sinai		•	
the development of South Egypt	The reclamation and agricultural development projects in Toshka and Darb Al-Arbaeen area			•
	The development of Lake Nasser area.	•		
	the mining industries development project in the Alaaki valley in the South Valley			•
Other projects	The development and reconstruction project in the western desert.		•	
	Wadi Al Natroun Development Project.			•
	National Roads Project		•	

Table 2: Classification of the leading projects in Egypt according to the global competitiveness

The leading projects		Classification according to competitiveness	
		Global	regional
The development of the Suez Canal As an international logistics and industrial center	the development of the east region of Port Said	•	
	the development of the tech valley and the new Ismailia as well as the Amal (Hope) suburb		•
	the development of the north west area of the Suez bay		•
the development north and the middle of upper Egypt	The golden triangle (the industrial and mining complex of Safaga - Qena – governorate) as an international mineralization site	•	
	Development of transversal axes in upper Egypt and its supporting projects		•
The development of the western north coast and its corresponding desert area	the development of the western north coast and its corresponding desert areas as a global Tourism destination	•	
	The construction of urbanized communities as well as an international tourism center in Al-Alameen		•
	the development of the Qattarah depression region		•
Sinai development	Agricultural development project for the area of 400 thousand hectare in North Sinai dependent on El Salam Canal	•	
	Industrial development within the center of Sinai	•	
	Tourism development within South Sinai	•	

	the supporting projects of the development in North Sinai		•
the development of South Egypt	The reclamation and agricultural development projects in Toshka and Darb Al-Arbaeen area	•	
	The development of Lake Nasser area.	•	
	the mining industries development project in the Alaaki valley in the South Valley	•	
Other projects	The development and reconstruction project in the western desert.		•
	Wadi Al Natroun Development Project.		•
	National Roads Project		•

Table 3. Classification of the leading projects in Egypt according to (economic - social - urban)

The leading projects		Classification according to revenue		
		Economic	Urban	Social
The development of the Suez Canal as an international logistics and industrial center	the development of the east region of Port Said	•	•	
	the development of the tech valley and the new Ismailia as well as the Amal (Hope) suburb	•	•	
	the development of the north west area of the Suez bay	•	•	
the development north and the middle of upper Egypt	The golden triangle (the industrial and mining complex for Safaga - Qena – governorate) as an international mineralization site	•	•	
	Development of transversal axes in upper Egypt and its supporting projects		•	•
The development of the western north coast and its corresponding desert area	the development of the western north coast and its corresponding desert areas as a global tourism destination		•	•
	The construction of urbanized communities as well as an international tourism center in Al-Alameen	•	•	•
	the development of the Qattarah depression region		•	
Sinai development	Agricultural development project for the area of 400 thousand hectare in North Sinai dependent on El Salam Canal		•	•
	Industrial development within the center of Sinai	•	•	
	Tourism development within South Sinai	•	•	
	the supporting projects of the development in North Sinai		•	•
the development of South Egypt	The reclamation and agricultural development projects in Toshka and Darb Al-Arbaeen area	•	•	
	The development of Lake Nasser area.	•	•	
	the mining industries development project in the Alaaki valley in the South Valley	•	•	
Other projects	The development and reconstruction project in the western desert.		•	•
	Wadi Al Natroun Development Project.		•	•
	National Roads Project		•	•

PRINCIPLES AND CRITERIA FOR EVALUATION OF LEADING DEVELOPMENT PROJECTS TO ACHIEVE SUSTAINABILITY.

A set of principles and criteria has been identified, which represents the evaluation basis as well as prioritizing the leading projects in order to achieve their sustainability. They have been categorized into as (preparatory, environmental, economic, and social) that have been developed from previous studies (the definition and the extension of leading projects - the international leading projects example - the goals of the Leading projects in Egypt) as follows:

• The Basic and preparatory principles and criteria

The preliminary and preparatory principles and criteria that precede the execution of the project are the approval of the state and the government, the formation of the supervising and leadership entities that ensure the execution and implementation of the project as well as the follow-up and maintenance activities through an integrated environmental management system. Additionally, some alternative studies focused on the project goals, the main project streams/axes, and substitute ideas and alternatives based on international participation as well as the project feasibility studies and ensuring that the environment is not affected through a thorough environmental impact assessment.

• Environmental principles and standards

Environmental principles and criteria are the principles and criteria of a high global competitiveness. They are related to the principles and criteria for the environment and climate in order to determine the suitability of the project, the transport to measure its high communication, the infrastructure in terms of the infrastructure of the project itself, and those related to the sustainable urbanization to provide adaptive and convenient compatible with the existing standards and quality of life.

• Principles and economic standards

is considered as the milestone in which the success of any project depends on, which has a set of direct economic effects (resource operation - increased production - increased investment), indirect effects (low inflation - investment multiplier) that results in a series of consequent projects or income / revenue that help achieve the economic goals of the main project, the definition of the expected returns (investments - employment opportunities - signed architectural effects), and measuring the competitiveness of the project at the local, regional or world level.

• Social norms and standards

The social axis of any project represents the return achieved for the population or the society through the contribution of the project to reduce the unemployment, on one hand, and to stabilize the population growth and reduce the spread of crime and ignorance and disease, on the other hand, in order to form a free and prosper social environment.

Mandatory and preparatory principles and criteria

▪ Mandatory principles and criteria

- Provide national political support through a committee that belongs to the Council of Ministers
- Identify the different parties and entities to lead the city as well as the projects
- The application of the Integrated Environmental Management System

▪ Preparatory principles and criteria

- Set the building up and construction goals and identify the main axes Of the project
- The International participation in the idea development as well as alternatives planning
- Project feasibility studies
- Environmental impact assessment studies

Environmental principles and standards

▪ Environment and climate

- The compatibility with the environment and nature (adaptation to the climate):
- Confronting Climate Change (Greenhouse Gases Emissions)
- Mitigate environmental risks

▪ Transportation and communications

- High connectivity and accessibility
- The efficiency road networks.
- Availability of railway network.
- Accessibility to aerial and maritime ports
- Availability of sustainable transport systems:
- Electric railway network
- Metro networks
- Buses and mass transport networks
- Bicycle and pedestrian lanes
- Parking garages
- Sustainable transport of goods
- Clean fuels for vehicles

▪ Infrastructure

- Availability of water sources
- Availability of energy sources (fossil - renewable)
- Compatibility of utilities and services network (electricity, telephone, sewage, waste)

▪ Sustainable urbanization

- Linking the project to development milestones

- Project engagement with development poles and milestones
- Link the project to both existing and proposed urban communities
- Provide an appropriate and adequate urbanized environment:
 - A distinctive urban plan and architectural style
 - Local architectural character
 - Compatibility and integration of usage
 - Multifunction uses
 - The availability and compatibility of services:
- **Quality of life**
 - Nature and serenity
 - Recreation and entertainment
 - Sport activities
 - Taking into account the humanitarian aspects
 - Open areas and pedestrian lanes
- The expected urban effects and the impact on urban attraction
- The expected urban effects on the value of real estate and prices of properties
- **of competitiveness**
 - Customs exemptions on the project
 - The project's regional competitiveness
 - The project's global competitiveness

Social norms and standards Social

- Reducing unemployment
- Community/society participation and NGOs
- Population Attraction
- Stop the influx of migratory waves to cities
- Reduce the crime level
- Reduce the spread of ignorance, disease and poverty
- Creating a free and prosper social environment

Economic Principles and standards Economic

- Spatial components
 - The traffic within industrial areas.
 - Availability mining resources.
 - The closeness to agricultural lands and reclaimable areas and regions.
 - The vicinity to tourism and archaeological areas.
 - Technological industries and modern technologies.
- **Economic impacts**
 - Direct economic impacts
 - Indirect economic impacts
 - The resulting economic implications subsequent reverberations
 - Measuring the economic multiplier
- **Yield/Revenue**
 - Attracting local investments
 - Attracting foreign investments
 - New added-jobs in traditional market
 - New added-jobs to the green job market
 - Indirect employment opportunities produced by the project
 - Temporary employment opportunities
 - Materialization of the project contribution to GDP
 - The project Contribution to the reconstruction of new urban areas that have not been built before

CONCLUSIONS & RECOMMENDATIONS

- The concept of the project assessment is the process of defining the necessary criteria by which the authority can choose the appropriate alternative or project among several proposed alternatives, which ensures the achievement of the objectives, based on scientific grounds.
- The evaluation process aims to define a kind of compatibility between the considered criteria and the proposed project objectives.
- The project evaluation process ensures that there is a certain level of compatibility between the objective of any project and the objectives of the leading development project's plan and the predefined project objectives in terms of physical, human and technical resources availability.
- There must be consensus and compatibility between the objectives of the integrated and interrelated projects in order to eliminate any conflict between their objectives.
- Provide the necessary inputs to ensure the success of the evaluation process of the project, especially regarding the availability of accurate and comprehensive data.
- The project evaluation process belongs to the planning phase, that comes a prior to the feasibility studies phase and before to the implementation phase.
- The evaluating process must incubate the investment decisions related to implementing or abandoning the proposed project.

- The evaluating process is based on trades-off between several or alternatives projects until the selection of the appropriate alternative.
- The prioritizing process of leading projects must be based on precise scientific criteria as follows:
- The preliminary and preparatory principles and criteria that preceded the implementation of the project focus on the approval of the state and the government, the formation of the supervision and leadership entities that ensure the completion and implementation of the project as well as the follow-up and maintenance activities through an integrated environmental management system. Additionally, the preparation of alternative studies focused on the project goals, the main project streams/axes, and substitution ideas and alternatives based on international participation as well as the project feasibility studies and ensuring that the environment is not affected through a thorough environmental impact assessment.
- Environmental principles and criteria are the principles and criteria of global competitiveness. They are related to the principles and criteria for the environment and climate in order to determine the suitability of the project, the transportation to measure its high communication, the infrastructure in terms of the infrastructure of the project itself, and those related to the sustainable urbanization to provide Adaptive and convenient compatible with the existing standards and quality of life.
- Economic principles and standards, it is the milestone in which the success of any project depends on, which have a set of direct economic effects (resource operation - increased production - increased investment), indirect effects (low inflation - investment multiplier) that result in a series of subsequent projects or income/revenue that help achieve the economic goals of the main project, the definition of the expected returns (investments - employment opportunities - signed architectural effects), and measuring the competitiveness of the project at the local, regional or world level.
- Social norms and standards
- The social axis of any project represents the return achieved for the population or the society through the contribution of the project to reduce the unemployment, on one hand, and to stabilize the population growth and reduce the spread of crime and ignorance and disease, on the other hand, in order to form a free and prosper social environment.

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