




Sports Sustainability and Facility Development in Libya: An Analytical Study of the National Development Agency

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Abstract

This study analyzes the role of the National Development Agency in Libya in providing sustainable sports facilities within the orientations of Libya Vision 2030. It also aims to identify the extent to which these projects support economic and social development and reconstruction. The study is based on a knowledge gap resulting from the limited number of studies that have addressed sports facilities as developmental and investment tools in the Libyan context. Moreover, there is a lack of institutional evaluation of the contribution of these facilities to sustainability.

Using a qualitative approach based on a descriptive analytical design and the case study method, the study considered the National Development Agency as an institutional model for analysis. Official documents, reports, and published data on sports projects, along with scientific literature and supporting documents, were used to collect data. The data were analyzed using documentary analysis and qualitative thematic analysis.

The findings showed a clear tendency toward investment in sports infrastructure through the implementation of major and medium-scale sports projects, such as establishing international stadiums and improving existing facilities, in addition to adopting modern technologies and equipment compatible with international standards. The results further indicated a diversity of funding sources and a growing tendency to increase investment in sports and convert sports facilities into developmental assets capable of generating sustainable economic returns.

The study concludes that the success of sports sustainability will not be achieved through construction expansion alone. Rather, it also depends on long-term strategic planning and effective operational, financing, and investment models that ensure the continuity of facilities and maximize their economic and social impact.

1- INTRODUCTION

In the last few decades, there has been a basic change in the philosophy of management and the developmental function of the sports sector. Sport is no longer only a recreational activity or a social practice, but has become a multi-faceted economic and investment sector. Furthermore, it contributes directly to supporting economic growth, achieving human and social development, and helping countries achieve better competitiveness. This transformation has triggered global interest in developing sports infrastructure and establishing sports facilities with advanced technical and administrative specifications. This can bring operational and economic sustainability and long-term returns beyond traditional sports use [1]. Modern sports facilities have become one of the most important developmental assets which countries rely on for investment, employment generation, and development of their associated economic sectors. Nonetheless, success is no longer tied solely to the magnitude of expenditure or construction accomplishment, but rather to the ability to sustain these facilities through modern management, strategic planning, optimum investment of available resources, and improvement of operational efficiency[2].

According to recent literature, many countries, particularly developing countries, are unable to take optimal benefit of sports facilities due to weak investment vision, shortcomings in management systems, and disintegration of sports planning from economic and social development needs. It results in lower operational efficiency, causing some facilities to become financial sinkholes rather than developmental tools[3,4].

With that, the concept of sustainable development has emerged as one of the basic pillars of modern policies. Sustainable development is based on balancing the economic, social, environmental and administrative dimensions to ensure present needs are met without affecting the ability of future generations to benefit from the resources. This concept has manifested in the sports sector through the sports sustainability concept, which consists of developing and managing sports facilities that can ensure financial and operational continuity and generate long-term developmental value[5].

Libya is currently witnessing a developmental transformation for the reconstruction and development of vital sectors within long-term national orientations. The sports sector is one of the areas receiving increasing attention, aiming to rehabilitate sports infrastructure and make it more capable of contributing to economic and social development. In this context, the National Development Agency was set up as a national institution to supervise the execution of significant strategic projects, including sports facility

projects to build modern stadiums and sports complexes in conformity with modern technical and administrative standards.

A variety of studies relating to sports facilities management, sports investment, or infrastructure appraisal have appeared. However, the literature review indicated a few studies that examined the interaction between sports sustainability, sports facilities management, and national development under an executive institutional framework. There is also a lack of studies that examined the experience of the National Development Agency in Libya as a modern model for developing sports facilities and linking them to the economic and investment objectives of the state. As a result, the present study works to fill the knowledge gap concerning the role of the National Development Agency in promoting sports sustainability in Libya through the study of the sports projects which have been implemented, the reality of their implementation, the technologies used, the approved sources of funding, the expected economic returns, as well as the extent of conformity of these projects with the requirements of sustainable development and the targets of Libya Vision 2030.

There are studies that have addressed the management of sports facilities, the obstacles to sports investment, and the evaluation of sports infrastructure; however, the review of the literature shows there is a knowledge gap represented by the low number of studies that have addressed the relationship between sports sustainability, the development of sports facilities, and national development policies within an executive institutional framework. It also shows the lack of studies that analyzed the experience of the National Development Agency in Libya and its role in transforming sports facilities from service facilities into sustainable developmental and investment assets.

In light of this, the current research seeks to provide an analytical reading for the role of the National Development Agency in the promotion of the sustainability of sports in Libya by studying the sports facilities projects that it supervises, and analyzing the reality of their implementation, technology used in them, approved financing sources, expected economic returns, as well as the extent to which these projects are consistent with the requirements for sustainable development and the objectives of Libya Vision 2030, so as to contribute to the building of a scientific perspective that may be used in the future in developing sports and investment policies.

2. Methodology

2.1 Research Approach

The approach through which this study has been performed is qualitative research in nature, followed by descriptive analytical design. The aim is to achieve an

integrated interpretive understanding of the reality of sports facility projects supervised by the National Development Agency of Libya. The purpose was also to analyze their developmental, administrative and economic functions, and how far they contribute to achieving the sustainability of sports within the targets of Libya Vision 2030. To do so, it is one of the most suitable approaches to studying phenomena that have a complex institutional and developmental character, in which administrative, investment and planning dimensions intersect with the real contexts, and without direct intervention in the variables, or subjecting them to experimentation, or causal measurement[6].

2.2 Research Strategy

This research was based on the case study strategy to provide an appropriate methodological framework to analyze institutions and developmental projects in their real environment. This is because the case study strategy explains the mutual relationship among planning, implementation, management, and developmental outcomes in a complex institutional environment [7]. The National Development Agency was chosen to represent the modern executive model in managing sports infrastructure projects and linking those to national objectives relating to sustainable development and reconstruction.

The research involved analyzing the sports projects supervised by the Agency as applied units which reflect the nature of modern sports management and funding mechanisms, achievement levels as well as the extent to which technologies and infrastructure are employed for the achievement of sustainability.

2.3 Unit of Analysis and Scope of the Study

The primary unit of analysis was the National Development Agency as the body responsible for planning, implementing and following up the sports projects within the framework of national development policies. The analyzed sub-units were sports projects either already implemented or under implementation. These include international stadium projects, sports cities, maintenance and development programmers, as well as the technical infrastructure, funding sources and investment models associated with the projects.

The research adopted the period beginning from the establishment of the National Development Agency in 2024 until the completion date of the research, while covering all the announced sports projects in Libyan territory.

2.4 Sources of Data

The combination of primary and secondary data in the research work was to build comprehensive knowledge as well as to enhance the reliability of the results. The research derived its primary data through semi-structured interviews and in-depth interviews with a number of officials and leaders responsible for implementing sports projects, in addition to

explanation sessions and follow-ups aimed at clarifying mechanisms for planning and implementation, sources of funding, and bases of operational and economic sustainability.

Data for the study was gathered through examination of official documents, reports, institutional data and media publications related to sports projects, as well as literature and past studies regarding sports projects and the study subject.

2.5 Steps for Collection of Data

The data collection process was carried out in stages, by reviewing scientific literature on sports facility management, sustainability and sports development. This was followed by identification of the sports projects of the National Development Agency and classifying them on the basis of nature and implementation stage. Subsequently, relevant documents and reports pertaining to various projects were collected which included information on achievements, technologies, estimated costs and funding sources.

At a subsequent stage, the interviews were executed, and their contents were transcribed and converted into analyzable data. Subsequently, the collection of qualitative and documentary data was integrated based on a single analytical framework, aiming to produce a comprehensive interpretation of the phenomenon studied.

2.6 Approach to Analyzing Data

The study used a combination of document analysis and qualitative thematic analysis as two complementary tools to analyze the data. Information about sports projects was analyzed using documents which included completion rates, phases of implementation, estimated costs, sources of funding, technical equipment, and standards used for implementation.

Thematic analysis was applied to derive interpretative patterns associated with sports sustainability, institutional management, sports investment and economic returns. The data was analyzed by repeatedly reading the data, carrying out initial coding, grouping similar patterns, and then developing the main themes and linking them to the theory and literature [8].

2.7 Analytical Indicators

The results were analyzed and certain indicators were used in evaluating the reality of the sports project. The monitoring indicators consist of the number of sports projects, their implementation status, the technologies used, the estimated cost of implementation, the source of funding, operational sustainability indicators, the expected economic return, as well as the degree to which they support the transition towards sustainable sports investment.

2.8 Research Quality Assurance

The study selected methodological procedures that attempt to improve the quality and reliability of the results. The data obtained from relevant scientific literature was linked. Similarly, the documentation of the analysis steps was systematic and there were continuous comparisons between the various data. To use methods of methodological triangulation, the interviews were combined with documents, official reports, scientific sources, etc., which helps to reduce the chance of bias, increasing the explanatory power of the results [9].

2.9 Ethical Considerations

The principles of ethics of scientific research were complied with through reference to an officially

published source for data, accurate presentation and interpretation of the results, and the avoidance of anything that is unpublishable and/or irrelevant to study objectives. The research ensured that findings were not overstated, and results were not generalized beyond the limits of the study [10].

3. Findings

3.1 Implementation Status of Sports Projects Overseen by the National Development Agency

Table (1) Sports Projects Affiliated with the National Development Agency According to Location and Implementation Status

Project	Location	Classification	Implementation Status
Benghazi International Stadium	Benghazi	Major	Completed
Sirte International Stadium	Sirte	Major	Ongoing
Ajdabiya International Stadium	Ajdabiya	Major	Ongoing
Development of the Sports City	Sirte	Medium	Ongoing
Maintenance and Completion of the Sports City Road	Sirte	Medium	Completed
Al-Shaoush Gharyan Stadium	Sabha	Medium	Ongoing
Tarhuna Sports Stadium	Tarhuna	Medium	Ongoing

The findings as presented in Table (1) show that the National Development Agency is moving towards adopting a step-wise development model of sports infrastructure. This model encompasses the creation of major new projects as well as the completion and maintenance of pre-existing facilities such as the Benghazi International Stadium and the Sports City Road in Sirte. This distribution indicates a wise grasp of reconstruction priorities; development does not only cover the building of new facilities, but also involves reactivating existing facilities and enhancing their operational performance.

It is observed that many projects are still in the implementation stage, which signifies that the experience is still in the formation phase. Consequently, the final judgment on its economic and social impact will require a follow-up later after its full

operation. Yet, the presence of a completed project, like that of Benghazi International Stadium, is the first sign of the agency's capacity to transform plans into reality. The spatial allocation of projects over Benghazi, Sirte, Ajdabiya, Sabha, and Tarhuna seeks to ensure a measure of spatial equity in the allocation of sporting infrastructure, which is essential in the case of countries in reconstruction.

This finding is in line with the recent trend regarding sports management that sports facilities must not be managed just as service facilities but as strategic assets linked to urban development, quality of life enhancement and competitiveness enhancement of cities (11,12). The simultaneous presence of both major and medium-scale projects indicates that the Agency is not operating according to the logic of a single project but according to a package of projects. These projects

may together constitute the core, or kernel, of a more integrated national sports system.

3.2 Technologies Used and Implementing Companies

Technology	Company	Country	Use
Natural Turf	SIS Pitches	Britain	Stadium pitches
Hybrid Turf	Deymour	Türkiye	Training fields
Smart Sports Lighting	Signify	Netherlands	High-quality broadcasting
Dimmable Lighting Solutions	Musco Lighting	United States	Lighting control
Construction Execution	The Ark	Egypt	Construction works
Sports Seats	EKIP	Türkiye	Interior equipment
Scoreboards	Unilumin	China	Display systems



Figure (2). International technologies and companies adopted in equipping sports facilities under the National Development Agency projects.

The results of Table (2) indicate that the sports facility projects depended on various international technologies ranging from natural and hybrid turf to smart lighting, electronic screens, sports seats, and construction execution. This indicates a transition from traditional construction to a smart sports facility concept that is capable of satisfying the needs for television broadcasting, player safety, spectator comfort, and operational efficiency, among others.

Lighting technologies, turf systems, and display systems are important elements to take into account when judging the quality of modern stadiums. These technologies affect the facility’s ability to host official championships as well as the quality of the spectator experience inside and outside the stadium. Depending on specialized international companies may contribute to transferring technical expertise to the local environment, provided, of course, this will be accompanied by training of national staff competent to

Table (2) Technologies Adopted in Equipping Sports Facilities

operate and maintain after the implementation stage is over.

This result shows that the Agency not only wants construction completion, but also wants to improve compliance with internationally accepted standards as well. Nonetheless, this orientation requires long-term maintenance and operation plans, as modern technologies can quickly become a financial and operational burden if not managed correctly. Existing literature confirms that technology in sports facilities only achieves added value when there is a tie to efficient management, maintenance planning, and human resource development (13.14)

3.3 Estimated Costs of Sports Projects

Table (3) Financial Estimates for Sports Projects

Project Type	Estimated Cost
International Stadiums	150–250 million dinars
Integrated Sports Complexes	More than 300 million dinars
Maintenance and Development Projects	20–50 million dinars



Figure 3. Estimated Financial Costs of Sports Projects Implemented by the National Development Agency

According to the results of Table (3), the estimated costs of sports projects are on the higher side, which is especially true for international stadiums and integrated sports complexes. This is primarily explained by the nature of the projects in question, since modern stadiums are not only a playing field and stands, but they also include lighting and broadcasting systems, control rooms and media facilities, service areas, safe entry and exit areas, and security and safety systems, among many others.

Looking at it through the eyes of economics, these costs can be classified as capital expenditure for the long term and not consumption expenditure, so long as these facilities operate in line with a clear investment model. The problem lies not in high construction costs, but rather in the fact that there is currently no management model that transforms these facilities into sustainable sources of income. As a result, the success of the projects in the future will be linked to the existence of performance indicators such as an annual utilization rate, rental revenues, the number of events hosted, maintenance cost, rate of return on investment, and the reliance rate on self-financing.

The impact of construction costs on the value of sports facilities is often overstated. Studies indicate that what matters more is the continuous economic and social returns generated by the sports facilities during operations (15). As a result, a more important challenge for the National Development Agency will not be construction, but the post-construction challenge, namely management, operation, and investment.

4 Approved Funding Sources

Table (4) Approved Funding Sources

Source	Role
Development Budget	Main funding
Reconstruction Funds	Liquidity provision
Self-Investment	Operational sustainability
Joint Financing	Support for major projects

Table (4) shows that sports project funding depends on the development budget, reconstruction funds, self-investment, and joint financing. The diversity of funding sources is beneficial. The more diversified these funds are, the lower the risks that come with

relying completely on a single funding source. This is especially vital in an environment where oil revenues and political contexts fluctuate.

The shift to self-investment, naming rights and facility rental is an important step towards financial sustainability. Modern sports facilities require continuous operational financial resources even after they are constructed. Joint financing enables the private sector to participate and increases the efficiency of administration while lightening the burden on the public purse.

Nevertheless, a clear governance framework needs to be set up, which defines what the spending mechanism will be, how monitoring will be done, how returns will be measured, and how the responsibilities will be split between the government and the private sector. Without a clear financial system and measurable performance indicators, diversification of funding will mean little. According to the literature, the financial sustainability of sports institutions depends on revenue diversification and rationalisation of expenditure as well as setting up of commercial operating models without compromising the social function of sport (16).

3.5 Expected Economic Returns

Table (5) Expected Economic Returns

Dimension	Expected Impact
Reducing Financial Burden	Reducing government support
Diversifying Income Sources	Maximizing assets
Sports Tourism	Attracting investment
Local Spending	Stimulating the economy
Job Opportunities	Reducing unemployment
Innovation	Improving services

The data in Table 5 demonstrate that the development of sports facilities can lead to a myriad of economic returns, including easing pressures on the public purse, broadening sources of income, revitalizing sports tourism, stimulating local spending, generating job opportunities, and elevating the quality of services. Establishing facilities cannot automatically guarantee returns, but marketing and investment management that attract events, organize competitions, rent facilities, and

activate commercial services surrounding the facility can help generate these returns.

These projects can benefit from sports tourism as one of the most important possible paths through which Libya will be able to host local, regional, and international championships. A sports event earns income not only from the sale of tickets but also from hotels and restaurants, the transport sector, retail, media, and commercial sponsorship. Consequently, the economic impact brought about by the facility extends far beyond the confines of the sports sector and impacts the local economy of the host city.

It may be possible to transform facilities into profitable or semi-self-financed institutions, which may lessen dependence on government funding. However, the commercial objective should not overshadow the community objective. The sports facility should accommodate youth and the community while also gaining revenue that covers part of the operational costs.

The literature confirms that sport can be an economic sector supporting development, provided it is managed according to a model that combines investment, governance, partnership, and social sustainability (17-19). Consequently, we can say that the projects of the National Development Agency have the building blocks for transforming into an economic tributary. The success of this transformation, however, will depend on the later operational stage and on the Agency's ability to form a clear administrative and investment model for each facility

Conclusions and Recommendations

4.1 Conclusions

The findings of the study indicate that the ongoing change in the sports facilities sector in Libya entails a transformation in the view of sports infrastructure as traditional service facilities into one of the developmental assets, which could assist in reconstruction, stimulate economic growth and enhance institutional sustainability. The outcome revealed that sports projects that are overseen by the National Development Agency not only focus on the extension of construction but also move in the direction of quality standards, modern technology, and more diverse financing models in a way that enhances the prospects of long-term sustainability.

In addition, the success of these projects is not so much dependent on the accumulated spending or completed

facilities as on the quality of the administrative system that enables the conversion of sports facilities from centres of financial consumption to production units with a sustainable economic and social impact. The findings indicated that the true worth of these projects becomes evident once strategic planning is interwoven with the operation, investment, and management of the facility life cycle after completion.

The research also showed that the economic dimension of sports facilities is not limited to direct revenues but extends to activating sectors related to tourism, services, investment, job creation, and improving the attractiveness of cities. This means that sport is incorporated into comprehensive development policies, not treated as a separate service sector.

4.2 Recommendations

According to this study, to maximize the developmental impact of sports facilities, one should move from project management to managing long-term added value. The study thus suggests the following.

Revising sports planning within the national framework for sustainable development, so that sports facility projects are linked to measurable economic, social, and environmental performance indicators and not just construction achievement indicators.

The Sport Facility Life Cycle Management model has to be adopted such that planning is done all the way from the design and construction stage to operation, maintenance, expansion, and future investment.

Merging developmental equity in the distribution of sports projects through the linkage between construction decisions, population indicators, level of development, and regional needs to ensure optimized resource allocation and minimized developmental disparities.

Future projects shall require integrated feasibility studies covering demographic, economic, and environmental analysis, as well as social return on investment (SROI) assessment.

Strengthening the transition to smart and sustainable sports facilities through the increased use of energy efficiency technologies, renewable energy, digital operating systems, and methods to reduce long-term operating costs.

The aim is to develop a hybrid financing model that combines public funding, private investment, and returns from the operation of the sport facilities, such

that they are financially sustainable with reduced dependence on public funds.

An institutional scheme for performance measurement and periodic assessment should be established based on indicators like economic return, utilization rate, number of generated jobs, and community return of sports projects.

Redefining sports facilities as multifunctional development centers by integrating them with tourism, commercial, and service activities, in a way that increases their contribution to gross domestic product and enhances the competitiveness of cities.

4.3 Suggestions for Future Research

Given the scarcity of operational data at the moment, the study suggests that future research should broaden out towards assessing the real economic return of sports facilities after they are put into service, developing predictive models for financial sustainability, and assessing the impact of public-private partnerships on the efficiency of sports facility management in Libya.

Researchers' Contributions

The author contributed to developing the research concept, designing the study methodology, collecting data from official documents, reports, institutional publications, and relevant scientific literature, analyzing and interpreting the data, writing the research draft, revising the manuscript critically, and approving the final version for publication.

Conflict of Interest

The author acknowledges that there is no conflict of interest related to the publication of this research.

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Data Availability

The data supporting the findings of this study are based on publicly available documents, official reports, institutional publications, and relevant scientific literature. Additional information may be available from the author upon reasonable request.

Ethical Considerations

The study was conducted in accordance with the ethical standards of scientific research. Since the research relied on documentary analysis, official published data, reports, and relevant literature, it did not involve experimental procedures on human participants or animals. Accuracy, confidentiality when needed,

academic integrity, and responsible interpretation of data were maintained throughout the study.

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