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		Social Development in Extreme Environments: Structural Challenges, Cultural Resilience, and Sustainable Prospects for Human Settlement in the Algerian Desert	
Maksouda Mohammed		University of Béchar Algeria E-mail: mohammed.maksouda@univ-bechar.dz	
Kedrouci Sabah		University of Béchar Algeria E-mail: kedrouci.sabah@univ-bechar.dz	
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Abstract This study investigates the structural, cultural, and environmental dimensions shaping social development in the Algerian desert, a region that simultaneously embodies historical continuity and contemporary developmental fragility. Characterized by expansive territory, extreme climatic variations, resource scarcity, and a distinctive sociocultural heritage, the Algerian desert provides a valuable context for analyzing how human societies adapt to harsh ecological conditions. The research traces the conceptual history of social development in marginal geographical zones, exploring how desert communities have preserved adaptive traditions, community solidarity mechanisms, and local knowledge systems regarding mobility, resource allocation, and land use. By applying a multidisciplinary analytical methodology—drawing on historical sociology, environmental studies, and regional development theory—the article outlines both enabling factors (such as state-led investment programs, indigenous resilience mechanisms, cultural capital, and local entrepreneurship) and inhibiting forces (including infrastructure deficits, limited state institutional reach, demographic disparities, lack of development incentives, and climatic volatility). Findings indicate that sustainable development in the Algerian desert will depend on policies that integrate local participation, respect cultural autonomy, encourage decentralized governance, and strengthen water security technologies and ecological management strategies. The study advocates for a development paradigm rooted not only in economic optimization but also in socio-environmental harmony, cultural continuity, and human dignity, enabling desert inhabitants to serve as active agents rather than passive recipients of development initiatives.			
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I – Introduction

Humans have inhabited the desert since ancient times, establishing functional and environmental settlements adapted to its climate and creating a system of exchange, thus achieving harmony in social and economic functions that ensured their survival and adaptation to their environment. Caravans, trade routes, and water sources played a major role in the founding and flourishing of many desert cities and settlements, which were, on one hand, subject

to an arid climate and, on the other hand, located in open spaces—circumstances that gave them great uniqueness. Desert cities emerged from the function of caravan stations along major trade routes in past eras, taking the form of oasis towns. Spontaneously, the inhabitants laid down the foundations and methods to develop a lifestyle in the desert, as true development begins in the minds of people who organize themselves to achieve it.

Desert and arid regions cover more than 40% of the Earth's land area and are home to billions of individuals who settled there and adapted to its environment. However, they face specific social development challenges due to harsh environmental conditions, scarce resources, and social and economic constraints (Li et al., 2021; Liu et al., 2020; Reynolds et al., 2007; Safriel & Adeel, 2008). Social development in Algeria's desert regions faces even greater challenges, as the desert constitutes 80% of the total land area of Algeria and encounters major obstacles, including environmental degradation, water scarcity, and social and economic transformation.

Achieving social development in desert areas requires balancing existing incentives and promoting them while addressing and overcoming obstacles. Government policies, technological innovations, and community initiatives are all incentives contributing to social development, whereas water scarcity, land degradation, poverty, and institutional barriers constitute significant obstacles to social development in desert environments (Requier-Desjardins, D., Adhikari, B., & Sperling, L. 2009).

Study Problem

The issue of social development in the Algerian desert presents a recurring challenge, as it seeks ways to preserve what the local population has accumulated and the skills they have acquired in managing environmental constraints and challenges. This study explores the context in which the concept of social development has emerged, its role in the desert environment in terms of importance and the necessary incentives to encourage greater community participation in improving their reality, while also identifying the problems and obstacles that hinder it. Thus, the central research question is:

What are the challenges facing social development in Algeria's desert regions in terms of incentives and obstacles?

Research Methodology

The nature of the study required employing the historical method with all its tools, including description, analysis, and discussion of propositions. Additionally, we tracked terms related to the desert to highlight their meaning, historical evolution, and link to environmental, social, and cultural contexts.

Through this historical approach, the paper investigates one of the most important aspects of development: social development, whose historical trajectory has undergone several transformations, similar to most social phenomena, as it represents a multidimensional challenge with variable characteristics. This depends on the environment in which development occurs and its relation to other development obstacles.

Importance and Objectives of the Study

The topic of development and its challenges is inherently vital and dynamic, as it concerns the present and future of humans. Attention to this topic is increasingly necessary, as its evaluation and study now rely on specific indicators and criteria that allow analysis of all related data and the formulation of strategies that encourage incentives and address obstacles. Accordingly, the study aims to achieve the following objectives:

- Draw attention to the importance of social development and the necessity of considering it in any development policies, especially in desert areas due to their environmental and human specificities.
- Reveal the nature of incentives and obstacles that need to be identified and studied according to scientific principles.
- Examine the reality of social development in the desert in all its dimensions and the role of humans in this complex process, to understand the performance of society through its traditional and modern institutions, thus aiding the guidance and evaluation of development policies.

The main ideas and research axes can be structured as follows:

I – Introduction

II – Social development: its concept, elements, and characteristics

III – Aspects of the characteristics of the Algerian desert environment

IV – Social development in the desert: its nature and components

V – Incentives for social development in the desert

VI – Obstacles to social development in the desert

VII – Conclusion and findings

VIII – Recommendations

IX – References

Before delving into the topic, it is worth noting that the geographical scope of the desert environment in this study covers the Algerian desert, east and west. The desert is primarily a geographical term characterized by climatic, natural, and human features that have interacted to produce a lifestyle and culture that continue to accumulate strategic heritage wealth at all levels. Here, the concept of spatial development, recently developed within the context of development policy, can be introduced. Spatial development emerged as an outcome of considering alternative strategies based on utilizing local material and human production capacities without always relying on the central producer of concepts, ideas, and material and moral values. Desert environments, from a development perspective, strive to improve their reality and keep pace with progress while integrating into comprehensive development processes.

It is also essential to clarify that this paper adopts the concept of social development from its human and social dimension—that is, the role of individuals and desert communities in terms of behavior, relationships, customs, and participation in the development process—without addressing the state’s role. Social development is often considered a government function, as many researchers limit it to social welfare through various services and care provided by the state. For a long time, it was believed that developing a region meant equipping it with factories, infrastructure, equipment, drilling wells, and establishing universities. These actions, however, only represent manifestations of development (Benali, R., & Berrim, A, 2025) rather than development itself. Government intervention is part of implementing this process, aimed at establishing certain patterns of social organization.

II – Social Development: Concept, Elements, and Characteristics

1. Evolution of the Concept of Development

The term “development” is inherently evolving and carries multiple meanings depending on the perspective and challenges of each era. Over recent decades, the concept has evolved rapidly, moving from the traditional notion—optimal investment of natural resources—to modified concepts emphasizing optimal use of available resources, human development, and the qualitative improvement of life (Human Quality Development) by focusing primarily on the human element as the decisive factor in development (Saad, 2006, p.26).

Thus, studying this topic reveals the multiplicity of development concepts, to the extent that it has become a problematic term. Numerous theories and studies have addressed this concept and related concepts, especially in the sociology of development, which has become an established discipline taught in economics and social sciences faculties. In this paper, development is defined as:

Development is a comprehensive societal process aimed at transitioning to a dynamic state characterized by sustainable economic growth, social, cultural, and political transformation that improves the quality of life for all members of society (Rabie, 2016, p.8).

Historically, the concept of development clearly emerged only in the mid-20th century, after World War II and the advent of development economics. However, its roots date back further, to Adam Smith and his book *The Wealth of Nations* (1776) (Meier & Seers, 1998, p.3), being the first to use development in the context of the civilizational construction of states and societies.

The post-WWII international focus on development, particularly in developing countries seeking to strengthen their newly acquired independence through economic autonomy, led to the adoption of the Western model of development (El-Bebrawi, 1990, p.19). During the 1950s and 1960s, development was initially defined purely in economic terms, focusing on material aspects. Economic development dominated the economic literature and was often synonymous with economic growth, measured through indicators like national income (GDP), gross national product (GNP), and per capita income.

By the late 1960s and mid-1970s, criticism of the applied development model and the nature of achieved development increased. Dudley Seers (1969) criticized the growth achieved, linking development to the magnitude of poverty, unemployment, and inequality, arguing that development should focus on social objectives rather than only economic ones. This was followed by the Club of Rome report *Limits to Growth* (1972), alongside theoretical works on redistribution and the environment (Kouzmine, Y. 2007). These works agreed that the applied development model severely harmed the natural environment, causing significant environmental pollution. It relied on depleting finite natural resources, resulting in fragile, socially unjust, and environmentally damaging development, increasing social disparities within Western countries and between them and developing nations.

In the 1980s, the focus shifted to sustainable development, gaining prominence with the *Our Common Future* (Brundtland Report, 1987), defining sustainable development as:

"Development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Abrahams, 2017).

Development thus evolved from an economic issue to one encompassing economic, social, and environmental dimensions simultaneously.

In the early 1990s, the concept of human development emerged with the first UNDP report *Human Development* (1990), defining it as the expansion of people's choices, including living a long and healthy life, acquiring knowledge, and accessing resources necessary for a decent standard of living.

In summary, development is a continuous process aimed at elevating society from a static state to a higher, better one, encompassing all aspects of life. It is not merely material economic achievements but a necessary social process ensuring human stability and progress, representing intentional, planned social change primarily targeting cultural and behavioral improvements (Asadov, K., & Karimli, T. 2025).

2. Nature of Social Development, Its Goals, and Indicators

One of the key concepts derived from the broader, complex notion of development is *social development*. To date, development has largely focused on the economic dimension through economic growth, neglecting social aspects. It has not achieved social justice, eliminated poverty and unemployment, and has exacerbated social inequalities. Economic growth is necessary for development but insufficient for improving quality of life and achieving societal welfare.

Social development, closely linked to economic development (Temple & Johnson, 1998; Birdsall, 1993), aims to improve quality of life, enhance social inclusion and cohesion, ensure equitable access to resources, promote social justice, advance education and health, improve living standards, and empower individuals to participate in society (Colchester, M. 2000).

Despite the multiple objectives of social development, its common goal revolves around satisfying material and immaterial needs to ensure social stability and cohesion. A comprehensive view of the development process positions every member of society within a network of human relations, enabling them to undertake collective social actions based on trust and voluntary contribution, without expecting reward (Ben Hamza, 2022, p.7).

The primary goals and outcomes of social development, under which other objectives fall, include:

- Addressing and managing social issues arising from continuous changes in behavior, relationships, and roles due to shifting customs and values.
- Meeting individuals' material and immaterial social needs by providing social services organized by the state and framed by the community.

While material social services can be provided by government intervention, immaterial social needs, due to their human nature, require the combined efforts of all social actors, particularly needs related to stability, trust, security, social protection, and adherence to societal norms and values as inherited tangible and intangible capital, which guarantee the stability necessary for development (Khouzam, 2012, p.49).

The availability of these social needs serves to stimulate initiative and cooperation, and to involve a larger number of community members in implementing development projects in a manner consistent with their perception of the philosophy of life and in harmony with social and cultural values, especially in desert areas characterized by conservatism within what is known as cultural self-centeredness. Therefore, the success of social development is considered both an entry point and a fundamental condition for the success of any other form of development due to its capacity to mobilize local efforts and achieve positive popular participation that accommodates various segments of society (Al-Jawahiri, 1984, p.160).

Regarding social development indicators, and given the criticisms directed at quantitative indicators (Gross National Income (GNI), Gross Domestic Product (GDP)), which do not necessarily reflect the level of societal welfare or the true development of a country (e.g., oil-producing countries), and may include goods and services harmful to welfare accompanied by increased social disparities, as well as failing to measure access to natural resources or environmental degradation (Azoulay, 2002, pp. 56–58), new qualitative indicators emerged to measure social development, the most important being the Human Development Index (HDI) introduced by the United Nations Development Programme (UNDP), which combines life expectancy, education, and per capita income; and the Social Development Index (SDI), which includes measures of social inclusion, health, gender equality, environmental sustainability, and empowerment (Oza, 2024; Matiuk & Poluiaktova, 2021; Prada-Blanco & Sánchez-Fernández, 2017).

The UNDP also issues two other indicators: the Gender Development Index (GDI), which adjusts the HDI based on gender disparities, and the Women's Participation Index, which shows the degree of women's involvement in political and economic life.

For social development, there are a set of agreed-upon indicators recognized by international organizations, most of which fall under the Human Development Index (HDI) adopted by the United Nations and UNESCO, which is concerned with education worldwide. These indicators can be specified as follows:

- Education (availability, quality, school dropout rates, education levels...)
- Health care (nature of health care, quality, number of doctors, health coverage...)
- Social relations (communication and social connectivity, media services, internet...)
- Participation in development, which includes several sub-indicators such as participation in social activities, political life (organization and voting), civil society activities, and involvement in private sector and artisanal activities.
- Average individual income
- Demography and population density and distribution (Ali Omar, 1996, p.89).

Because social development is an essential and integral component of sustainable development, the United Nations and the Arab Initiative for Development proposed a set of indicators including: peace, security, institutional framework, poverty reduction, health, population, education, awareness, scientific research, resource management, consumption, and production index, ensuring these indicators cover various social, economic, environmental, and institutional aspects (Abu Al-Nasr, 2017, pp. 128-129).

Third - Elements and Characteristics of Social Development

Social development constitutes one of the most important concerns of social research, aiming to solve the problems of desert and rural communities and elevate them. Social development is closely linked to economic development and vice versa; any economic reform is fundamentally based on social factors. One of the main conditions for successful development, particularly social development, is the prevalence of a culture of fulfilling duties before claiming rights, for nations progress by performing small duties. Thinker Malik Bennabi formulated an important equation through which different development approaches in any society can be analyzed. He argues that if duties and rights are equal (in terms of citizens' claims and performance), the society is stagnant. If the society demands more rights than it performs in duties, it is backward, as consumption will exceed production. Conversely, if the society has a culture of performing duties before claiming rights, individuals and institutions fulfill their duties before demanding rights, the society produces more than it consumes, thus positioning itself on the path of growth and development (Bennabi, 1986, pp. 142-143).

Similarly, most researchers and experts in social development view it as imbued with a human purpose influenced and shaped by social values, particularly values of work, rights, and duties. Therefore, the development process cannot justify itself; what justifies it are its objectives. Social values that define development goals can be viewed from three perspectives:

- Increasing human capacity to manage and regulate living conditions in their desert and social environment.
- Enhancing human attitudes and capacity for internal and external social cooperation.
- Fostering free cooperative relationships based on trust and solidarity among natural and institutional community elements (Husseini et al., 1987, pp. 187).

Social development relies on certain elements and is characterized by essential features that are unique or shared with other forms of development. The most important include:

- Social participation, which forms the foundation of social development alongside government efforts to improve general conditions. Social participation cannot exist without social cohesion, which establishes balanced relations within the triad of work, ownership, and consumption (Sarouji, 2001, p.35), organizing relationships among community members living under similar conditions and striving to improve their situation. Social development is a conscious and guided social process in which all segments of society participate, and any weakness or deficiency in social participation negatively affects development programs.

- The need to raise awareness and cultivate the desire of community members to engage in development processes, based on a sense of belonging and responsibility, expressed in the equation:

Social Development = Will + Desire for Change

- Reliance on local resources, by focusing on utilizing both material and immaterial local wealth, which reduces development program costs. Social development is, in essence, self-development, arising from the community itself, serving as an effective tool to solve people's problems, providing tangible and direct benefits, while revealing the capacity of the local community to solve its problems independently of the center.

III – Aspects of the Characteristics of the Algerian Desert Environment

The Algerian Desert represents a large part of the Greater African Desert, located south of the Saharan Atlas Mountains, covering the southern portion of Algeria. Its area is estimated at about 4 million km², over 80% of the country's total area. Over successive eras, like other areas of the African Sahara, it played a significant role in civilizational communication and the transmission of ideas, customs, traditions, and architectural forms, spanning from the Atlantic Ocean in the west to the Red Sea in the east. It also served as a bridge between the northern countries bordering the Mediterranean and the lands of gold, ivory, and slaves south of the desert (Abu Rahab, 2018, p.12).

Our focus will be on aspects of the Algerian Desert as addressed by some scholars, through observations and direct fieldwork, which provide relatively objective but significant insights for understanding desert life rules.

The triad of water, trade, and camels has formed the backbone of life and civilization in the desert, a crucial determinant of individual and community social behavior, given the harshness of the land, water scarcity, and the roles and benefits of camels. Desert inhabitants have adapted over centuries, enabling them to not only endure these hardships but also build civilizations whose traces remain.

One key feature of the desert environment is the architectural pattern known as the "Qasr" (footnote 1), referring to settlements in contrast to northern cities. Variants include "Aklnit" in eastern Algeria, "Ighrem" in the Kabylie region, and "Agadir" or "Tqelaït" in the Moroccan Sahara. Despite differing terms, they all denote desert settlements. Western, particularly French, studies on Algerian desert inhabitants identify three major approaches:

- The first, represented by orientalist Paul Martin, identifies three types of populations: the Gétoulian, the Berber, and the Arab (Martin, Georges, 1923, pp. 7–27). Regardless of variations over time and space, desert Qasrs have functioned architecturally as social life centers, serving as vital repositories for basic living needs, surrounded by walls and gates within vast open spaces.
- The second approach, advocated by French military expedition leaders such as Colonels Konnar and Crouzet, within the so-called divisive theory (footnote 2), argues that desert architecture reflects the region's historical ethnic and political presence (Boubrek, 2010, p.69), with Berber, Arab, Roman, Byzantine, and even Jewish Qasrs (Grouzet, 1893, pp. 11–26). This view conflicts with historical and material evidence, as desert Qasrs primarily serve social functions rather than ethnic segregation.
- The third approach attributes differences in Qasr architecture to ethnic variation, asserting rectangular Qasrs are Berber and square Qasrs are Arab (Daumas, 1845, pp. 52–65). Historical evidence contradicts this; desert Qasrs historically hosted multiple ethnicities according to a social hierarchy determined by status and function. The shape of Qasrs is governed by the nature of the land, geography, and local toponymy, not ethnic distinction. Construction must primarily adapt to the land and satisfy two key conditions: water and transport routes.

Many researchers link Algerian desert Qasrs and cities with Sudanese Qasrs in West and East Africa. For example, historian Marcel Emerit notes that southern Algerian Qasrs were built along lines of connection with neighboring African countries in all directions (Emerit, 2015, pp. 26–39). This indicates that desert inhabitants historically focused on building settlements that ensure a dignified life within the geographical space, regardless of ethnic diversity; Qasrs were never tools of racial segregation but means to secure decent living by adapting to the climate and land.

The architectural patterns and lifestyle in the desert reflect human adaptation to the land, which is first secured for settlement and subsequently as a life capital. Consequently, desert lifestyles align with housing and construction methods, considering climate, humidity, wind, water availability, trade routes, agricultural products, and pastoral activity. Thus, desert Qasrs are more than alleys, walls, and gates—they are dynamic spaces containing essential institutions such as homes, mosques, markets, hospitals, and orchards.

The desert's linguistic lexicon reflects life and nature, with expressions and terms accumulated over time, enabling inhabitants to make the desert a space comparable in beauty and richness to other regions. Importantly, the desert is among the least polluted environments due to traditional practices of managing waste and residues, reinforcing the saying, "God's waste is useful for His creation, man's waste harms humans." Traditional desert lifestyles include recycling organic and non-organic waste within Qasrs for animal feed or fertilizer (footnote 3). Desert temperature and humidity further reduce pollutants, and wastewater is managed to evaporate rather than accumulate in pools.

These factors indicate the desert is a healthy, vibrant, and environmentally friendly space. However, violations of traditional living practices in many cities and Qasrs have negatively impacted the environment and human health, requiring awareness through education, media, and associations. Desert cities still demonstrate that humans have inhabited these areas since ancient times, striving to make the environment conducive to a sustainable local development foundation.

Another key feature of the desert environment is the presence of trails and paths controlling population movement and trade. Life in the desert relies on two basic elements:

- Availability of groundwater, springs, and wadis, around which Qasrs are built.
- Construction of desert cities and Qasrs is closely tied to trade routes that ensure caravan movement and economic activity. In some regions, Qasrs were called "Makhazin" (plural of "Makhzan") because of their connection to trade and caravan activity, storing surplus goods beyond the Qasr's capacity.

Additionally, desert tribes have historically facilitated integration and interaction among Algeria's various inhabitants. Historical geography cannot exist without social geography, as they form interconnected cycles (Pfiefer, 1973, p.128). Over time, the Algerian desert has been a geographically vital space, witnessing rapid urban transformations and deep social changes affecting traditional structures, converting Qasrs into major urban centers attracting development and new phenomena that require study (Khalifa, 2018, p.8).

IV – Social Development in the Desert: Nature and Components

Social development in desert areas is an integral part of local development, crucial in developing societies, as it aims to introduce deliberate changes for material improvement (health, living standards, education) and immaterial enhancement (developing community capacities, relying on heritage and collective resources to solve problems).

Social development in the desert focuses on methods used in some parts of the world to improve social performance by mobilizing human, material, and natural resources in desert communities, maximizing community participation through collective initiatives.

Due to transformation and change affecting desert settlements, many traditional customs, norms, and social behaviors have diminished, particularly after northern populations settled in the desert. This led to new behavior patterns, cultural and urban revitalization, integrating desert areas into modernization processes. Urban growth accelerated due to state policies stabilizing populations in these regions (Abu Rahab, 2018, p.159).

When discussing social development in the desert, it is essential to consider changing attitudes among desert populations, as this is the first step in modifying behavior and social relationships. According to sociologist George Herbert Mead, attitude is latent action or the beginning of visible action. To create behavior supporting social development in desert or rural areas, there must be an initial framework or orientation adopting social, developmental, and awareness-driven communal work (Jamei, 2011, p.4).

While social development consists of unchanging rules, it also considers the nature of the environment to be developed. Compared to northern city inhabitants, desert and rural populations focus significantly on environmental issues (representing 20% of concerns in a UNDP study), which affect economic opportunities, followed by concerns regarding waste management impacting public service quality. Some desert residents (according to a UNDP survey within and outside Algeria) report improved living conditions over recent decades, while others attribute development obstacles to a lack of service and economic projects, increasing vulnerability in certain areas (UNDP, 2019, pp.16–17).

Unlike traditional desert cities (Qasrs), which successfully adapted to the environment and land, new desert cities, with modern urban planning, often fail to harmonize with environmental and social variables due to:

- Lack of services, urban structures, and economic projects to retain residents, attract newcomers, and secure investment.
- Ignoring desert environmental specificities in designing housing or urban projects, making them vulnerable to sandstorms and solar radiation.

- Absence of clear policies for production and rational use of vital resources, especially water and energy.
- Lack of scientific, forward-looking studies addressing rapid and complex changes (Hamza & Halimi, 2021, p.158; Kouzmine, 2007, pp.17-18).

These points lead to the important conclusion that social development is primarily a societal issue, targeting the community in terms of cultural structure and interpersonal relations, as well as individuals, who are both tools and the ultimate goal of development. This has led development scholars to emphasize focusing on the cultural dimension of development, especially since many traditional development theories failed due to neglecting the community's culture, which is crucial for success. Without conscious thought, development remains material appearances, potentially causing social fragmentation if coupled with unequal wealth distribution due to imbalance in justice, equality, and solidarity.

Thus, identifying, understanding, and analyzing cultural elements (footnote 4) becomes essential for advancing social development. Awareness of these cultural elements guides the search for effective ways to integrate the new values required for development (Abdel-Mawgod, 2013, pp. 55-57; Al-Abed et al., n.d., pp. 57-58). Numerous experiences in desert and local community development in the developing world have shown that cultural factors—customs, traditions, practices, and social beliefs—play a significant role. If positively reformed, they ensure acceptance and dissemination of development programs, as resistance to change often hinders development.

Cultural challenges are among the greatest obstacles to social development, with their impact strongest in subcultures, such as desert communities (footnote 5). While these communities' cultural traits may slow the pace of change, they also possess qualities that facilitate comprehensive social development if properly leveraged, including social solidarity practices embodied in local communal institutions and collective participation in religious and social events. Therefore, understanding, analyzing, and planning around cultural content requires concentrated effort.

V – Drivers of Social Development in the Desert

Based on the foregoing, desert communities possess numerous means, mechanisms, and frameworks for initiating social development, many of which fall within the realm of intangible heritage that historically supported and enabled these communities to overcome difficult phases in their history, particularly the colonial era, while preserving the components of identity. Therefore, it is crucial to study and understand the factors that helped maintain many ksars and desert towns and preserve their tangible and intangible heritage. Development scholars believe these factors integrated the three dimensions of development, even indirectly and spontaneously: the social, economic, and environmental dimensions, thus aligning closely with the contemporary concepts of sustainable development (Lamoudi, 2015, pp. 242-246).

Since social development is primarily a human and social process, we believe its success depends on the extent to which what is known as “social capital” is valued and utilized. Social capital encompasses inherited practices, perceptions, expressions, knowledge, and skills passed down from generation to generation, which communities continuously renew and develop in alignment with their environment and values.

The importance of nurturing social capital lies in it being the most crucial means of maintaining cohesion and trust among citizens, community sectors, institutions, and officials. Trust is essential as it motivates citizens to participate freely in development programs since these programs are grounded in their convictions and produce tangible results in their lives.

The concept of social trust, which forms the foundation of any social solidarity, directly reflects the connection to heritage and cultural legacy, leading to the creation of social relationships within the community or social group that are harmonious and integrated. It also indicates the existence of social bonds founded on shared values and perspectives on life, which unify the meaning and purpose of that group's existence.

The foundations of social solidarity stem from several factors, the most important being:

- A certain level of social consensus regarding goals, strategies, social processes, values, symbols, hierarchy, system, and social functions, which fosters a sense of social belonging among individuals.
- This social consensus is transmitted through the process of socialization, in which the family institution and the educational system play a primary role as primary groups (Bouda, 2013, p. 66).

In the framework of supporting social development and providing important incentives, Algeria has implemented programs for rural development, agricultural expansion, and desertification control. These programs have indeed contributed to expanding agricultural areas and improving infrastructure, but their impact has been limited due to environmental, technical, and social constraints (Bencherif et al., 2021; Zegait et al., 2023; Imene, 2024). Farmers and herders face obstacles due to limited resources and education, despite their adaptive attempts through

diversifying agricultural practices, using technical knowledge, and spontaneously adopting new technologies (e.g., drip irrigation) (Bencherif et al., 2021; Zegait et al., 2023; Djoudi et al., 2024; Khelifi, 2024). Finally, although the efforts provided substantial potential in developing desert tourism and promoting sustainable agriculture, they require better infrastructure, investment, and community participation to be effective (Mokhtari & Hattab, 2025; Benaissa et al., 2022).

Development scholar Karl Taylor emphasized that most failures of social development in the desert and local regions are due to the population's failure to realize that they are the ones most capable of carrying out development projects (Jame, 2011, pp. 4–5), due to socialization and social relationships, while outsiders are often assumed to be more capable of analyzing and designing development programs, as reflected in the popular saying: "The shame of the country is upon its own people."

Through direct observation and related studies, we identified key incentives and reasons for the success of social development in the desert, summarized as follows:

- Attention to socialization institutions and those responsible for them (family, school, clubs, civil and sports associations, scouts, local media, mosques, Quranic schools, zawiyas, peer groups, etc.) (Motawri, 2016, p. 73), for their significant role in raising an aware generation capable of understanding development concepts and societal service, including voluntary and charitable work.
- Financial and economic incentives play a major role in supporting social development by funding small and emerging enterprises.
- Reviving the culture of endowment (waqf) in society, especially since the desert environment still preserves many endowments untouched by colonial policies. The desert community is also more inclined to revive this virtuous practice, which historically proved effective in combating poverty and unemployment and strengthening social trust and cohesion.
- Developing participatory and inclusive development policies and procedures by removing cultural, social, and economic barriers between the desert and other regions of the country, thereby enabling the transfer of successful experiences and fostering a shared national consciousness, elevating it toward productive positive competition.
- Ensuring that local elites and notable figures, including officials, tribal sheikhs, religious leaders, and experienced individuals, possess sufficient awareness to confront social obstacles, such as tribal competition and the role of women.
- Increasing reliance on women and youth in social development programs enhances effectiveness by involving a broader segment, preparing it for long-term expansion and development.
- Drawing inspiration and benefiting from the experiences of other countries and societies in desert area development, particularly those with shared characteristics, such as Arab, African, and Asian countries.

VI – Obstacles to Social Development in the Desert

Sociologist Robert Merton was among the first to use the concept of "disruption" in studies on community development, considering it a type of functional dysfunction resulting from an aspect of the social system perceived as threatening or hindering its integration, cohesion, or stability (Ghaith, 1997, p. 124). The social system comprises the units forming community identity—culture, social personality components, and relationships—which unite within the social system to perform functions in a complex network, through which actors consciously or unconsciously seek solidarity and stability

(www.google.com/search?sca_esv=568251480&sxsrf).

Thus, if the social system is the true driver of development, any dysfunction within it will inevitably affect both development processes and society itself. This confirms that the problems and obstacles facing development paths in desert communities, and most communities in general, are primarily internal to the social system, whereas external obstacles find their way through gaps and weaknesses within the social structure.

Obstacles facing desert area development are numerous and persistent, such as water scarcity, land degradation, limited infrastructure, poverty, and social inequalities. However, the most significant obstacles are deficits in material and social capital, particularly inadequate education, weak institutions, and limited access to resources (Li et al., 2021; Wang et al., 2023; Rao et al., 2019; Karimi et al., 2024; Sathler, 2021; Briassoulis, 2019; Zuo et al., 2022; Jellason et al., 2021; Ahmed et al., 2024; Yan et al., 2024; Safriel & Adeel, 2008).

The main obstacles to social development in the Algerian desert include:

- Environmental degradation and desertification: Rural systems in Algeria have become less resilient to climate fluctuations, and traditional livelihoods have deteriorated due to severe land degradation and increasing desertification caused by overgrazing and changes in land ownership (Bencherif et al., 2021; Boussaid & Schmitz, 2022; Zaidi et al., 2025; Bouzekri et al., 2023).
- Water scarcity and agricultural constraints: Water management is a critical challenge, with reduced arable land and technical limitations (irrigation, labor shortages) threatening sustainability in oases and steppe regions (Zegait et al., 2023; Djoudi et al., 2024; Zaidi et al., 2025).
- Socioeconomic transformations: Rural life has become less attractive, and social structures weakened due to declining traditional herding, low education levels, and youth migration from agriculture (Bencherif et al., 2021; Zegait et al., 2023; Djoudi et al., 2024).
- Policy and governance issues: State interventions often lack coordination and fail to respect customary land rights, generating negative perceptions among local communities and limited effectiveness (Bencherif et al., 2021; Boussaid & Schmitz, 2022; Mourad & Avery, 2019).

Social values forming the reference framework for individual and collective behavior also face major disruptions in the context of social development, including:

- Disrespect for work or mastery of it, and lack of respect for time and discipline.
 - Underestimation of manual, craft, or professional work.
 - Isolation and withdrawal from social responsibility, relying on others.
 - Fear of change, especially if conflicting with personal interests.
 - Negative, subjective criticism of conditions and others, with reluctance to take initiative (Sarouji, 2001, p. 467).
2. Many desert towns lack experience in organizing and consolidating development efforts, causing many achievements to be lost—a phenomenon sociologists call “shortsightedness,” meaning that once a task is completed, it is perceived as finished, while in reality, the project should be ongoing (Abdelmouhsine, 2013, pp. 67-69).
 3. Weak popular participation in social and associative activities due to indifference, contentment with the status quo, widespread pessimism, and dissatisfaction leads to psychological defeat among citizens, particularly the weak and low-income, resulting in lost trust and hope in change or development efforts. Studies show that three-quarters of volunteers in social care come from professional and upper classes because low-income groups (the poor) cannot keep up, resulting in isolation (Rashad, 2011, pp. 185-186).
 4. Misdiagnosis of community problems and priorities is a major obstacle, as it negatively affects the trajectory of social development programs, especially when problems are purely human and social, such as family issues, prevalence of social vices (drugs, crime, adolescent delinquency), and social disparities. Youth may avoid participating in social activities due to misplaced priorities or lack of confidence in development programs. Setting unrealistic development goals or promoting destructive values, such as excessive individualism and selfish consumption, also impedes progress (Abou Al-Nasr, Medhat, 2017, pp. 151-154).
 5. Disparities in living standards between ksars, oases, and desert towns can create dissatisfaction, loss of trust, and reluctance to participate in community projects.
 6. Corruption in social development programs or among their administrators undermines public trust, requiring a long time to restore confidence.
 7. Insufficient funding and support for local associations and clubs working in community service or development, or focusing only on specific groups (women, youth, students, housewives, literacy, school dropout, juvenile delinquency), hinders integrated development and negatively affects local development initiatives.
 8. Despite the desert’s rich tangible and intangible heritage forming real social capital, poor investment in it for development has noticeably affected social action in communities, shifting relationships toward transactional interests rather than the compassionate bonds of ancestors, negatively impacting social cohesion, solidarity, participation culture, and volunteering.

9. Administrative obstacles include lack of human expertise and skills to plan and implement social development, and insufficient awareness among local decision-makers regarding social development and its success factors, which adversely affects citizen mobilization and participation in local improvement.
10. The harsh desert environment often complicates the execution of development projects, weakens social activities, and limits civil society associations due to communication challenges and resource scarcity, requiring state intervention to overcome these difficulties through capacity building, connecting ksars and towns, and organizing community awareness meetings, especially for youth and students.
11. Lack of clear vision and precise understanding of deficiencies and requirements, reflected in a structured action plan with specific timelines for desert communities, represents the main obstacle to successful development, particularly social development.

Finally, to summarize and diagnose the obstacles and difficulties confronting social development in the desert, they can be classified under two main factors: human and environmental. Any development approach that neglects these two elements in understanding, analysis, and care is inevitably destined to fail (Comment 6).

VII – Conclusion and Findings

In summary, the study concludes that development in all its forms, particularly social development, is primarily a human endeavor. If separated from its human and cultural context, it becomes a soulless or purposeless process. Social development is an integral part of development, rooted in community culture and identity.

Since social development is a fundamental form of development, aiming to improve human living conditions, it focuses on human formation and preparation within society to achieve comprehensive development.

Observing social life in the southwestern desert, social development has achieved modest to acceptable levels, but much remains to reach desired goals.

The study found that prioritizing human development is essential, as humans are the cornerstone of society. Subsequently, attention must extend to all social frameworks, starting with the family. This entails the development of human resources in desert communities to increase efficiency in social service and community development.

The desert environment poses significant challenges, potentially becoming hostile if humans fail to manage it scientifically and socially through proven measures, such as combating desertification, increasing afforestation, rationalizing water consumption, creating and maintaining green spaces, preserving desert urban patterns, and providing essential infrastructure to reduce migration.

The study also concludes that youth bear the greatest responsibility for advancing social development, requiring proper socialization, guidance, and support from associations and clubs, as well as training in volunteering, collective work, management, and leadership skills.

Social development needs in the desert often exceed individual and local community capacities, requiring central government support through infrastructure, healthcare, population incentives, local staff training, and media engagement.

Finally, this study highlights the significant gap in specialized research addressing desert development issues based on empirical reality and scientific indicators, along with methodological problems stemming from the absence of a coherent scientific framework for related concepts. Consequently, the question of development in the Algerian desert remains crucial and recurrent, focusing on improving life quality in all its dimensions.

VIII – Recommendations

Given the desert's cultural heritage as strategic social capital, it is essential to approach it scientifically and seriously.

- Religion and religiosity are central features of desert communities and form the spiritual and social core of social capital. Religious institutions and discourse must fulfill their role in community knowledge, spiritual development, awareness, and guidance.
- Youth should be structured and organized within associations, whether political or civil.
- Reviving and promoting the culture of endowment (waqf) among individuals and institutions can significantly contribute to social and economic development, as historical experiences have shown.
- Media, administration, educational, and socialization institutions, particularly universities and research centers, must assume responsibility in designing development plans, understanding the philosophy of life in ksars and desert towns, which enabled past generations to endure historical challenges.

- Charitable and service associations are the real agents of social development, and thus require attention in establishment, task assignment, funding, and support. Success stories in Western communities demonstrate the importance of civil associations in mobilizing, guiding, structuring, and changing societal attitudes toward collective, voluntary, and charitable work.

Comments:

1. The term “ksar” or “kasbah” generally refers to desert urban settlements. A ksar may contain multiple kasbahs, which are typically square or rectangular, with guarded doors and defensive openings. The kasbah is usually led by the tribal sheikh (political/military authority) or the main mosque imam (religious/judicial authority).
2. The segmentation theory in French colonial geography, social studies, and anthropology served as an important colonial policy tool in Algeria, dividing populations and tribes into functional units to serve colonial objectives. Key theorists include George Paul Martin, Colonel Connaire, O’Challier, Marcel Emerit, Eugene Dumas, among others.
3. An example in the southwestern ksars and Tuat region is the “transferral” process (moving decomposed organic waste locally known as ghabar, using donkeys through narrow ksar alleys to gardens) during plowing and sowing season (October, locally “Tober”). This transfers waste from traditional toilet cycles (knif) to farms as natural fertilizer, achieving dual goals: addressing sanitation without pollution and recycling waste as agricultural fertilizer.
4. Social development aims to elevate humans, who are shaped primarily by culture. Culture is human-centered, fulfills human needs, is acquired, and evolves. It profoundly influences individual and community behavior through education, experience, customs, and traditions, making cultural attention essential for successful development (Ben Nabi, 2013, p. 107).
5. The characteristics of desert communities include preservation of heritage, resistance to changing traditions, women’s social role, social networks, tribal social structure, education, social solidarity, and extended family roles.
6. These obstacles and constraints were observed through studying development realities in southwestern Algeria and the broader desert

Ethical Considerations

This research adheres to accepted standards of academic integrity and responsible research conduct. All data used are derived from scholarly literature, governmental statistics, and publicly available sources. No human participant data or personal identifying information were collected. Interpretations respect cultural contexts and avoid deterministic, discriminatory, or culturally reductive perspectives concerning desert populations. Citations have been provided for all referenced materials, and no manipulation or falsification of historical or demographic data occurred.

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Conflict of Interest

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