Participatory governance: a strategy to promote ecotourism in El Kala Reserve
Analytical approach using the extended SWOT matrix

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Received: 07/11/2025 Accepted: 25/11/2025 Published: 01/12/2025

Abstract:
This study aims to provide an analytical approach to promoting ecotourism in the El Kala Reserve through the adoption of a participatory governance model. Using the **extended SWOT matrix**, the search uncovers the reserve's unique strengths and capabilities, while identifying internal weaknesses and external threats that hinder its development. The study emphasises that involving local communities and stakeholders in the planning and decision-making process is not just an administrative choice, but a strategic necessity to achieve sustainable development. This approach provides a practical framework that transforms challenges into opportunities and seeks to establish a leading ecotourism model in the region, where conservation efforts are integrated with the economic and social benefits of the residents
Keywords: Ecotourism- Participatory Governancee- Local Communities
Jel Classification Codes: Q57-O17-O12

1. INTRODUCTION

Protected areas represent a cornerstone in strategies aimed at conserving biodiversity and preserving natural and cultural heritage for future generations. In light of the mounting challenges facing conservation efforts—such as climate change and pollution— traditional management systems have become insufficient to achieve the required balance between development and conservation. Hence, the concept of **participatory**

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governance has emerged as an alternative management model, based on the involvement of all stakeholders, ranging from local authorities to communities residing at the heart of these areas. This model aims to enhance transparency and accountability, while ensuring a fair distribution of benefits, transforming local residents from mere viewers to active partners in the protection of their environment.

In this context, **ecotourism** seeks to achieve conservation goals by providing alternative sources of income to local communities and reducing pressure on natural resources. However, the effectiveness of this approach depends directly on the ability of reserves to apply the principles of participatory governance. Among the most famous nature reserves in Algeria, El Kala **Reserve**, which has unique natural components and a rich cultural heritage, represents an ideal model for studying the relationship between participatory governance and ecotourism. Through this study, we seek to provide an analytical approach to the protected area by employing the expanded **SWOT matrix** (**Strengths, Weaknesses, Opportunities, and Threats**). This tool will enable us to identify the opportunities and challenges it faces and to formulate practical strategies aimed at strengthening the role of the local community in its management and development, thereby ensuring its environmental and economic sustainability.

From the above, the following problem comes to our mind:

How can participatory governance support ecotourism in El Kala Reserve by enhancing strengths and capitalising on available opportunities to address vulnerabilities and face external threats?

This problem involves a set of sub-questions

- What is meant by participatory governance?
- How can external opportunities be utilised to capitalise on internal strengths?
- How can external threats be addressed by enhancing internal strengths?
- How can internal weaknesses be addressed by taking advantage of external opportunities?
- How can internal weaknesses be addressed to confront external threats?

Research Objectives: This study provides an integrated analytical framework for promoting ecotourism in protected areas, with a particular focus on El Kala Reserve as a case study. It aims to achieve the following objectives:

-Assessing the **current situation:** Analysing the internal strengths and weaknesses of the El Kala Reserve, as well as assessing the external opportunities and threats it faces in the context of ecotourism, using the **expanded SWOT** matrix.

-Highlighting the **role of participatory governance:** Exploring how participatory governance mechanisms can be employed as a strategic tool to connect strengths to opportunities, transform weaknesses into possibilities, and effectively counter threats.

Research significance: This study serves as a valuable resource for researchers and decision-makers, as it:

- Contributes to enriching the academic literature on participatory governance and ecotourism in protected areas by introducing a new analytical framework that combines the **SWOT** matrix with governance principles.
- Provides practical, directly applicable recommendations for El Kala Reserve, assisting management in developing effective strategies for achieving sustainable development, thus adding a new tourism destination for the sector

Research methodology: This study adopts a descriptive-analytical approach that integrates both qualitative and quantitative data analysis. The extended SWOT matrix was used as the main analytical tool to assess the strategic status of El Kala Reserve, where:

-Data collection**:** by reviewing academic literature, government reports, and international publications related to the reserve and ecotourism.

– Data analysis: The collected data were analysed using the SWOT matrix to identify internal strengths and weaknesses, as well as external opportunities and threats. Artificial intelligence tools—Perplexity Pro, Gemini, and ChatGPT—were employed to enrich the analysis and support the formulation of ideas.

2. The concept of participatory governance:

According to the FAO AGROVOC Dictionary, participatory governance is defined as:"Active involvement of citizens and stakeholders in decision-making processes, aimed at fostering cooperation and inclusiveness" (https://agrovoc.fao.org, 2024)

It has also been defined as including state-sanctioned institutional processes that allow citizens to express their opinions and vote on public policy decisions that lead to tangible changes in people's lives. These processes engage citizens in public forums throughout the year, allowing them to take part in the formulation and selection of policies, as well as in their follow-up and monitoring (wampler & L.Mcnulty, 2015, p. 2) Participatory governance refers to a form of governance in which citizens and other non-governmental individuals and institutions are empowered to utilise state resources to make decisions on matters that directly concern them (TIEMS, 2015, p. 10)

3-Establishment of El Kala Reserve, location and natural resources:

It is located on the eastern coast of Algeria in the Wilaya of El Tarf, with an estimated area of 80,000 hectares, established in 1983 by Decree No. 83-462 dated 23 July 1983 and classified as a biosphere reserve by UNESCO in 1990.

4- Elements of the SWOT matrix for El Kala Reserve:

4-1- Internal Strengths:

4-1-1-Tourism potential: The potential of tourism products in the El Kala region can be grouped into two main categories:

Table 1 : Attractions and leisure activities

Category	Tourist Activity Sites
Shopping and Trading Places	22 shopping malls, 19 supermarkets, 18 covered markets, and 14 weekly markets
Resources and Thermal Resorts	Meksna Thermal Site (Bougous), Sidi Trad Bani Salah, Sidi Zeid and Zatout (Bouhadjar), Sidi Jebla (Lac des Oiseaux)
Beaches and coasts	40 km of coastline with 15 beaches authorised for swimming)

El Kala Coastal City	An old fishing port with promenades and a new marina
Ecotourism Pathways	The Oum Tboul Bird Trail, Haddada Forest Circuit, horse riding or hiking around lakes, and the El Kala urban coastal trail.
Water sports	Swimming, snorkelling, boat trips across Lake Tonga, and excursion boats
Cultural services	Municipal Museum, Open Air Theatre in El Kala
Media and Information Resources	El Tarf Algerian Radio, local newspapers, video reports, social media influencers, the Algerian National Tourism Office (ONAT),

Source : (Chafia & Rouag-Saffidine , 2024, p. 11)

Table 2:Infrastructure & logistics

Category	**Infrastructure structures**
Accommodation Structures	19 hotels, Tropicana tourist village, 08 campsites, 07 vacation and leisure centres, private residences (for rent)
Energy & Telecom Networks	Electricity coverage 97.75%, gas connection 68.70%, 57 post offices and 119 telephone centres
Environmental Equipment	31 pumping stations, 04 wastewater treatment plants, 02 waste disposal centres, 03 public landfills, 34 green spaces.

Source : (Chafia & Rouag-Saffidine , 2024, p. 12)

4.1.2.Local knowledge: Asymmetric information is considered one of the greatest challenges in the decision-making process. While decision-makers are assumed to have complete information, in reality, knowledge is often unevenly distributed among various parties. Citizens, NGOs, or individuals outside government circles may possess vital information that officials do not have, and this lack of information may lead to ineffective or unsustainable decisions (Schneider, 1999, p. 7)

4.1.3 Natural Resources: The El Kala Reserve is rich in a wide range of natural resources, the most important of which are**:**

- **Diverse water resources:** Lake Oubeïra **(**2200 hectares), Lake Tonga (2600 hectares) - Mellah Lake (860 hectares) — the only lake in Algeria that is connected to the sea. - Bourdima Swamp (11 hectares - Al Zarka

Lake 3 hectares - Al Saoudaa Lake 6 hectares (Djamel, Djellouli , & Allatou , 2014, p. 527)

- **Diverse vegetation cover:** The El Kala National Park is home to more than 50,000 hectares of forests, including Algeria's only cork oak forest. The wetlands in the park are also of great value, both for local wildlife and for migratory birds. They host more than 1,400 species of plants, including many endemic and endangered species, which enhances their ecological value (https://www.globalnationalparks.com/fr/algerie/el-kala, 2025)

4.1.4.Environmental Supervision:

A sense of responsibility towards the conservation of natural habitats is entrenched through collaborative efforts, whereby community members become active guardians of their environment, taking pride in protecting biodiversity and restoring degraded ecosystems. This sense of collective responsibility fosters a culture of environmental awareness that extends beyond the project's boundaries and inspires broader societal changes towards sustainability.

This results in enhanced public trust in decision-makers, as citizens can clearly see in each case that all issues relevant to the environment have been fully and thoroughly considered (Plessis, 2008, p. 177)

4.1.5.Historical and cultural dimension and supporting the livelihoods of local communities:

The El Kala Reserve holds a significant historical and cultural dimension as the locals living in the buffer and transition zones of the park possess traditional knowledge and practices that enable them to develop agricultural and artisanal activities in harmony with their natural environment, reinforcing the importance of this park as a space for the conservation of both the natural and cultural environment (UNESCO, 2025)

4.2.Internal weaknesses:

4.2.1.Socio-economic disparities and lack of local empowerment

Socio-economic disparities can significantly limit the ability of individuals with lower-income backgrounds to participate in participatory activities. Differences in socioeconomic status between people significantly

affect their capacity to engage in participatory activities, such as community meetings, workshops or consultative campaigns. People from low-income classes face greater difficulties in participating due to their limited available resources, such as the money needed for transportation or childcare, as well as the time they must often devote to work as a means of earning a living. These constraints reduce their opportunities for effective engagement in such activities (Greenley, Noirhomme, Mélihan - Cheinin , & Dheepa , 2024, p. 40)

4.2.2.Conflict of interests:

This refers to the clash between the immediate needs of communities for survival and environmental conservation initiatives, for example**,** the conflict between agriculture and grazing practices (which represent the community's livelihoods) and environmental conservation efforts that may require protecting land and restricting its use. This conflict is exacerbated by a lack of adequate compensation or alternative opportunities for communities that may be negatively affected by the establishment of reserves or conservation policies (Muchapondwa & hebert , 2024, p. 147)

4.2.3.The absence or weakness of legislative and regulatory frameworks for participatory governance:

Participatory governance requires a set of formal laws and regulations that clearly and mandatorily regulate how citizens and stakeholders are to be involved in decision-making and public policy formulation. Without clear legislation that imposes a set of rights and duties, and that defines mechanisms for participation as well as standards of transparency and accountability, participatory governance remains only voluntary initiatives or individual effort by certain institutions or officials (faraj & hassan al-ghamidi, 2021, p. 20)

4.2.4.Lack of environmental awareness:

The lack of awareness of tourists regarding the importance of preserving the environment, along with their failure to appreciate the efforts made in this regard, often leads to inappropriate behaviours, whether from tourists or accommodation service providers, which results in the

degradation of the concerned tourist destination (Mazhenova, Jeong-gil, & Chung, 2016, p. 135)

4.2.5. Absence of a flexible and specialised banking finance system:

The lack of a flexible and specialised banking financing system that supports the long-term and high-risk nature of tourism investment hinders the growth of this vital sector (Sabri, 2025, p. 115)

4.3. External Opportunities:

4.3.1.Increasing international interest in ecotourism: The global ecotourism market reached a value of USD 172.4 billion in 2022, and it is expected to grow to USD 374.2 billion by 2028, registering a compound annual growth rate (CAGR) of 13.9% during the period 2023–2028 (IMARC, 2025)

4.3.2.Benefiting from local and international support programs:

International organisations:

Al-kala Reserve has been recognized as a biosphere reserve by UNESCO since 1990 (uncategorized, Rook16, http://how-to-do5.com, 2024, accessed on 13/08/2024), allowing it to benefit fro
m international support programs in the fields of science and conservation of biodiversity and ecosystem (Azoulay, 2023)

It is nominated to join the Green List of the International Union for Conservation of Nature (IUCN), where the Union focuses on assisting those responsible for protected area and natural site conservation projects in obtaining the necessary financial resources to take further action in protecting natural wealth and biodiversity (http://www.jawharafm.net, 2024)

With the possibility of benefiting from the support of the Medfund Trust Fund for Marine Protected Areas in the Mediterranean, the Fund finances projects for the protection of biodiversity in natural marine and coastal areas (MedFund, 2025)

The German Society for International Cooperation GIZ: The German Society for International Cooperation (GIZ) supports its Algerian partners in implementing an integrated environmental policy by strengthening

planning and coordination skills. In addition, GIZ is increasingly active in promoting sustainable energies and energy efficiency.

GIZ's projects in Algeria cover areas such as the sustainable management of natural resources, biodiversity conservation, climate policy, waste management, and the promotion of environmentally friendly technologies and innovations (http://www.giz.de, 2024)

-Local authorities: The reserve can benefit from the support of several local authorities, including:

-The Local Directorate of Tourism and Traditional Industry: It contributes to the development of ecotourism through the organisation of events and training courses, which reflects positively on the rational and sustainable use of the park's tourism potential (https//:el-tarf.mta.gov.dz, 2023)

-The National Observatory for Environmental Monitoring and Management: Its mission is to preserve the park's integrity and ensure balanced and harmonious environmental development within the El Tarf province along a stretch of 5.17 km (http://www.echoroukonline.com, 2008)

4.4.External Threats:

4.4.1.Intensification of Agriculture through Overgrazing of Pastures: Farmers often seek to increase production—perhaps by expanding livestock numbers to obtain more meat or milk—but this growth occurs unsustainably, exerting excessive pressure on natural pastures. This approach ultimately leads to the degradation of the natural environment in the long term, thereby undermining the pasture's ability to remain productive in the future. In other words, it is a short-term "intensification" that comes at the expense of the sustainability of natural resources.

In the context of resource management, "agricultural intensification through overgrazing" is viewed as an unsustainable model that prioritises short-term gains over the long-term health of the ecosystem (A.Radford, Catullo, & de montmouline, 2011, p. 14)

4.4.2.Climate Change :"Lands in general, and agricultural lands in particular, are severely and negatively affected by climate change, which

causes drought, desertification, and land degradation. This degradation, in turn, eliminates the vital characteristics of the wild environment, resulting in the loss of biodiversity.

Furthermore, rain-fed agriculture, which relies heavily on rainfall, is severely impacted by rising temperatures. This leads to an increase in non-arable lands and negatively affects ecosystems and insect populations. The decline in insect numbers-a critical food source for many animals (such as birds, bats, and reptiles)-causes the collapse of these ecosystems and contributes to animal extinction due to food scarcity (bakhta, 2025, pp. 26-27)

4.4.3.Invasive Species: The weak involvement of multiple stakeholders in monitoring the ecological and environmental boundaries of the reserve, along with the absence of local and national negotiation and coordination mechanisms, has led to the aggravation of the invasive species phenomenon, which exceeds the capacity of any single actor to combat effectively. These Invasive Alien Species **(IAS)** include animals, plants, fungi, and microorganisms that have entered and established themselves in environments outside their natural habitats. Invasive alien species have devastating effects on local flora and fauna, causing the decline or even extinction of local species and adversely impacting ecosystems (Pixabay & crystal, 2022)

4.4.4.Wildfires: About 13% of the park's total area, equivalent to 4,045 hectares out of more than 30,750 hectares, was burned after wildfires swept across the northern regions of the country in 2022 (MENA, 2022)

The forest wealth is increasingly affected by recurrent fires every year, especially in the absence of effective participation of various actors (local authorities, civil society, local residents) in the planning and implementation of collective prevention and monitoring programs. As a result, measures remain fragmented, and long-term participatory coordination is absent.

As a result of the impact of climate change, droughts and heatwaves increase and since the forest does not fully recover, it becomes less dense,

gradually turning into areas of scattered shrubs, eventually leading to barren soil doomed to erosion (Ahmed, 2022)

4.4.5.Pollution: In fact, the El Kala National Park is an area where water, animals, and plants come together to form a true natural mosaic. However, behind this rare beauty lies an ugly reality-a reflection of human unawarenes**s** regarding the sustainability of this area, despite the fact that water is the source of life (Saadali, El Fadel , Saboua, Remita , & Faouzi , 2015, p. 74)

4.4.6.Construction of a highway**:** This exceptional biological reserve is now threatened by the construction of a highway. The road will extend for 20 kilometres through the park, which is part of the largest infrastructure project in Algeria to date: a 1,200-kilometre highway that will cross the country from Tunisia to Morocco, connecting the major Algerian cities (A.Tazir, 2008)

5. How to use participatory governance as a mechanism to link the elements of the SWOT matrix

5.1.Leveraging Strengths to Capitalise on Opportunities:

5.1.1.Utilising Tourism Resources to Enable the Community to Benefit from the Increasing International Interest in Ecotourism

The El Kala Reserve has a strong tourism infrastructure and diverse natural resources, ranging from beaches and thermal resorts to ecotourism trails and a unique biodiversity. Rather than just attracting tourists, participatory governance can turn them into engines of local development by:

-Development of local projects: Local people can be involved in specialised committees to develop and manage small tourism projects, such as organising boat trips in Tonga lake or hiking in Haddada forest. This ensures that tourism activities are environmentally friendly and directly benefit the community.

-Training of environmental guides: The reserve, in cooperation with the local directorate of tourism and travel agencies, can leverage local human resources and train residents to become environmental guides. This gives them a greater role than just a "promotion tool", and turns them into

"ambassadors of the reserve**"** who share their traditional knowledge about paths and types of flora and fauna.

5.1.2.Integrating local knowledge with international support programs:

Local knowledge in the El Kala Reserve is a key strength, serving as an informal yet rich database about their environment. In parallel, support programs from organisations such as UNESCO, the International Union for Conservation of Nature (IUCN), and the German Society for International Cooperation (GIZ) represent invaluable opportunities to fund and develop projects. The integration of these two elements is the essence of effective participatory governance. Instead of support programs serving merely as funding directed to central authorities, they can be transformed into a mechanism to empower local communities, for example, the reserve could request these organisations to fund programs aimed at documenting the traditional knowledge of the residents. These programs can include:

- **Creating a digital record of traditional environmental knowledge:** Research teams can be engaged to document local knowledge related to plant species, their medicinal and industrial uses, animal breeding seasons, and water resource management methods. This record will not only serve the purposes of scientific research but will also enhance the role of society as a knowledge partner.
- **Participatory monitoring programs:** Support programs can fund the training of local people on the use of simple tools (smartphone applications, cameras) to monitor environmental changes or animal species. This data, supported by local knowledge, will be more accurate and useful for management and protection decisions.
- **Knowledge-based economic initiatives:** These organisations can provide small grants for projects that draw on traditional knowledge, such as the production of handmade products from local plants, the pharmaceutical industry, or the development of tourist trails led by local guides who share stories about their ancestors' relationship with the environment.

5.1.3.Sustainability of natural resources and biodiversity:

The diverse vegetation cover, abundant water resources, and fishery products in the El Kala Reserve represent a critical strength, which can be sustainably leveraged to improve people's livelihoods through:

- **Product-based projects:** Community projects focusing on the rational use of plants for food or pharmaceutical purposes can be launched, involving local researchers in identifying the most valuable species and determining their sustainable methods of harvesting. This ensures that economic activities do not threaten biodiversity.
- **Environmental awareness:** In collaboration with El Tarf Radio and local influencers, awareness campaigns can be launched focusing on the importance of preserving water resources, such as Tonga and Mellah Lake, as they serve as vital habitats for migratory birds. This instils a sense of responsibility in the community and strengthens their protection of these resources.

5.2. Using Strengths to Address Threats : The El Kala reserve faces environmental and economic threats, which participatory governance can provide innovative solutions to address them, by integrating internal strengths with a participatory approach, so that the local community becomes both a protector and a key partner in ensuring the sustainability of the reserve:

-Economic threat: The tourism infrastructure is an economic strength for the reserve, but it becomes threatened when major decisions are made centrally without consulting the concerned parties. To address this threat, the reserve's management can employ participatory planning by involving local residents and tourism investors in drafting alternative plans or submitting proposals to government authorities. This ensures that the community's voice is heard and strengthens the position of the reserve's residents in confronting actions that could harm their environment.

-Environmental Threats: Natural resources are the heart of the reserve, yet they are most vulnerable to environmental threats such as wildfires and the impacts of climate change. To address these challenges, participatory governance can establish community-based fire response teams, where local residents are trained in firefighting techniques and early warning systems.

Additionally, participatory initiatives can be launched to manage water resources or reforestation, which enhances the reserve's ability to adapt to climate change and transforms the local residents into active guardians of their environment.

-Biological threat: Invasive species pose a silent threat and are often detected late**.** Although proximity to airports and ports is an economic strength, it also serves as a potential gateway to enter these species. To address this threat, the media resources of the reserve can be leveraged as a strength through participatory awareness campaigns where local residents are involved in creating video reports or short stories on how to identify and report invasive species. This approach not only mitigates the threat but also raises environmental awareness within the community and turns them into "biological monitors" of the reserve.

-Social threat: The traditional knowledge of the local residents is a valuable asset, but irresponsible practices such as overgrazing may threaten the reserve, and instead of treating these practices solely as negative actions, the management of the reserve can use participatory dialogue with pastoralists to develop rangeland management plans that incorporate traditional sustainable grazing practices and raise awareness about the environmental damage caused by overgrazing. This reinforces the role of pastoralists as sources of knowledge rather than as a problem, and transforms pastoralism from a threat to a sustainable and managed economic activity.

-Environmental threat: Pollution threatens nearly all of the reserve's resources, such as water, vegetation and beaches, and in the long term leads to the loss of ecotourism revenues due to a decrease in the number of visitors to the reserve, which in turn results in the degradation of the reserve's aesthetic appeal. To address this threat, the management of the reserve can establish community monitoring committees consisting of local residents, whose role is to monitor the sources of pollution, report them, and participate in regular cleaning campaigns. This approach not only reduces pollution but also strengthens the sense of shared responsibility towards the

preservation of vital resources, reinforcing that participatory governance is the most effective way to protect the environment.

5.3.Leveraging opportunities to address weaknesses: To address the challenges facing the El Kala Reserve, participatory governance can be operationalised through a set of mechanisms that transform weaknesses into opportunities for development and growth. These mechanisms are based on transparency, cooperation, and financial empowerment of the local community.

5.3.1.Managing conflicts of interest through open dialogue: Effective management of the reserve requires establishing open communication channels to address conflicts of interest among stakeholders. This can be achieved through the establishment of **community coordination committees** that include representatives of local residents, experts and government authorities. The task of these committees will be to organise regular meetings to discuss the challenges openly and transparently. This approach allows for the establishment of a "charter" that defines the rights and duties of each party, achieving a balance between the livelihoods of the residents (such as agriculture, livestock or harvesting) and the requirements of environmental conservation. This solution not only reduces conflicts but also promotes a culture of cooperation and mutual respect.

5.3.2.Building the legal and financial framework for participation:

To ensure the continuity of participatory governance, a legal and financial framework must be established to support it. This can be achieved through:

- **Forming joint working committees:** These committees, composed of the administration, the local community and lawyers, would be responsible for drafting legal proposals to be submitted to the legislative bodies with the aim of formally regulating participatory governance. This legal framework strengthens the legitimacy of community participation and guarantees its rights.
- **Establishing a community development fund:** A percentage of tourism revenues would be allocated to this fund, which is supervised by representatives from the administration and the community. This fund

would finance small projects that directly benefit the community, such as the development of traditional crafts or environmental awareness programs. This approach not only solves the problem of funding but also promotes transparency and fairness in the distribution of benefits, thereby reinforcing the community's trust in the administration.

- **Establishing participatory financial committees:** These committees, composed of representatives from both the administration and the community, are responsible for supervising fund management to ensure that resources are used for their intended purposes and distributed fairly. This model strengthens the **confidence of donors and** makes them more willing to support the reserve.

5.3.3.Investing in income-generating projects:

The reserve and the local community can work together to develop small income-generating projects that achieve financial independence. For example, local communities can produce artisanal crafts or ecotourism products to be sold to tourists, with a portion of the profits allocated to the reserve's fund. Additionally, symbolic fees can be introduced for certain tourist activities, such as guided tours, with the proceeds used to maintain eco-trails or finance awareness programs. This approach enhances the financial independence of the reserve and gives the community an active role in its management, thereby reducing internal conflicts over the distribution of gains.

Investment planning :

the principle of participatory investment planning can be adopted by organising workshops with local residents, hotel owners and travel agencies to identify project priorities. Is the development of access roads a priority Or the construction of environmental shelters Or improving basic service networks, This joint planning will ensure that the projects meet the needs of both the community and tourists and reduce resource waste. These participatory plans can also be used to attract funding from international organisations such as GIZ, which are interested in cooperation-based projects.

5.4.Addressing Weaknesses to Confront Threats:

El Kala Reserve faces a range of threats, the most important of which are:

-Social threat: The lack of coordination between the administration and the local community represents a fundamental weakness that generates conflicts of interest. When administrative decisions are made unilaterally, they often fail to consider the needs of local pastoralists, which may lead them to practice overgrazing as a form of resistance or as a result of a lack of awareness of the damage to the reserve

This threat can be addressed by involving pastoralists in the development of sustainable rangeland management plans, through participatory dialogue, they can be made aware of the risks of overgrazing on the reserve's lands, turning them from a source of threat into conservation partners. Environmental awareness strategies can also be developed in cooperation with the local community, turning them into the first line of defence against threats such as wildfires and the effects of drought.

-Legal Threat: The absence of an official legal framework granting the local community a role in monitoring and management represents a serious weakness. This deprives the administration of a vital source of field information, as local communities are often the first to notice the appearance of invasive species. However, the lack of reporting and accountability channels weakens control efforts and threatens biodiversity.

To address this threat, it is essential to enact legislation that grants the community legal authority to participate in monitoring and early warning programs. This legal framework enhances the reserve's ability to respond quickly to threats and ensures that local knowledge is translated into effective protection measures.

-The economic threat: A participatory dialogue approach can be adopted with stakeholders involved in major projects to ensure that both the community and environmental concerns are taken into account. It also becomes crucial to establish participatory and transparent mechanisms for revenue distribution, such as a community development fund. This fund

enhances trust, increases the community's sense of ownership, and turns them into protectors of the reserve.

-Financial threat: Poor funding is a major challenge that makes it difficult to address threats. Without sufficient funding, the reserve cannot implement any plan to address overgrazing, wildfires or pollution

Participatory governance can address this issue by involving the community in drafting funding project proposals. This increases the attractiveness of these projects to international donors, who highly value community participation. Additionally, a special fund can be established to address such threats, or a portion of the ecotourism revenues can be allocated for that purpose.

6.Conclusion:

This study confirms that the El Kala Reserve possesses immense potential to become a leading destination for sustainable ecotourism in Algeria and the Maghreb region. However, the achievement of this potential depends crucially on its ability to overcome existing challenges. The expanded SWOT analysis revealed a significant gap between natural potential and infrastructure on the one hand, and institutional weakness and external threats on the other. The solution does not lie merely in increasing investment, but rather in redefining the reserve's administrative framework.

Based on the results of the SWOT analysis and the participatory governance approach, the study makes the following recommendations**:**

- ✓ Establishing a "Local Development Fund" financed by a percentage of ecotourism revenues, managed under joint supervision to ensure fairness and transparency in the distribution of profits.
- ✓ Providing training programs on handicrafts and tourism services (such as tourist guides), which create alternative job opportunities and support sustainable livelihoods.
- ✓ Using traditional local knowledge in environmental monitoring and biodiversity observation programs, in collaboration with researchers.
- ✓ Launching a digita-l platform or mobile application that allows visitors and residents to report any harmful practices or environmental issues, thereby strengthening their role as guardians of the reserve.

- ✓ Establishing strong partnerships with international bodies such as UNESCO and non-governmental organisations **(**NGOs) to benefit from funding and technical expertise in the fields of conservation and protected area management.

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