Planning for Peace; Introduction of Transboundary Conservation Areas

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Abstract

The idea of conserving borderlands has been founded to mitigate the issues around the political borders. Similarly, “Transboundary Conserved Area” or “Peace Park” has been created to protect the environmental resources and precious biodiversity over the political borders as well as enhancing international cooperation through harmonizing resource management approaches. There are various forms of the peace parks created all around the world especially in Africa. Even though various kinds of these parks are created, the subject seems interesting and new in Asian and Middle East countries. Thus, this research aims to provide a comprehensive view of the subject that can be practical for the urban and environmental planners. Trying to determine their functions; this research explains seven operated projects as examples of Transboundary Conserved Area. To gain information, desk research is used, which collects secondary data from the available sources. Regarding data analysis, it shows how these parks contribute to the ecological improvement and other political, economic, and cultural benefits. The results of the cases’ surveys demonstrate a tangible consideration on ecosystem conservation, while other functions defined to the peace parks and peacemaking have been underestimated and partially ignored.

1. Introduction

Ecological areas are not in coordination with the international borders and they create a series of disjunction and environmental problems among political borders. Most of the geopolitical boundaries cut the natural habitats (both marine and terrestrial) and in some cases, it extends thousands of kilometers in fish, birds, and insect habitats. It is noticeable that many political boundaries are crossed by animals to access their needs and sources for survival. However, there are some human borders that completely block the way of species by the physical obstacles like fences. These obstacles make fragmentation in the natural landscape and ecosystems [1].

These markers of the human borders may cause an impervious road to the plants and animal species and limit their populations’ access and migration through a landscape [2].

As a result, the political borders are associated with various environmental issues including the biodiversity reduction, the ecosystem fragmentation, the habitat destruction through human construction, road services, and other military operations over the border areas [3]. In these situations, a good solution can be to remove the limitation and obstacles in order to create a corridor for facilitating the species interaction and animal movements.

However, borderland conservation solutions have been used more extensively. According to Griffiths and Westing [4], the international borders contain biologically intact ecosystems that are mostly placed in distant and unkind regions. Therefore, environmental conservation of the border regions has been developed as an idea and later it was called Transboundary Conservation Areas (TBCA’s) or/and Transboundary Peace Parks. Two other categories of transboundary areas have been also introduced besides TBCA’s. Table 1 quantifies all three typologies. TBCA’s and Peace parks address various ecological deterioration and contribute with national and international cooperation across geopolitical boundaries [2]. These types

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of cross-border actions can be practical in uniting artificially-separated ecosystems and lead to conservation achievements.

Other benefits of creating a peace park over borders include increased economic and tourism opportunities, better political relationships among countries, and the cooperation of local communities in the border areas conservation resulting in local benefits [2].

### 2. Materials and Methods

In this research, in order to get information about TBCAs projects executed in various countries (especially in African countries), desk method is used to collect secondary data from internal sources, the internet (project websites), libraries, government documents and published reports and documents.

Examples of transboundary protected areas are numerous and include international conserved areas, international marine protected areas, and the interstate parks mainly in the United States. In this research, some of best-known transboundary conserved areas have been selected and explained in order to determine their roles in protecting ecologically important border-lands all around the world. Although peace parks can be found in various ecoregions of the world, in this research they are categorized in two groups based on their location; terrestrial and marine conserved areas [1]. In this essay, Waterton-Glacier International Peace Park, the Great Limpopo Transfrontier Park, “W” Transborder Parks, Kavango-Zambezi Transfrontier Conservation Area have been chosen as the terrestrial cases; Binational Red Sea Marine Peace Park, Mnazi Bay-Ruvuma Estuary Marine Park, and Iona-Skeleton Coast Transfrontier Conservation Area have been studied as the Marine cases.

### 2.1. Waterton-Glacier International Peace Park (Between America and Canada)

**Major features:** Waterton-Glacier International Peace Park is the first International Peace Park in the world considered as a World Heritage Site established in 1995 (Fig. 1). It is a combination of two individual parks including Glacier National Park in Montana Waterton and Waterton Lakes National Park in Alberta. Each park is responsible for their own management and protection strategies. They manage their administrations and budgets separately. However, these two parks make attempt to cooperate on common projects that affect the whole area such as research projects, park publications, and interpretive activities. Unlike many peace parks of the world, the Waterton-Glacier is located between two countries that have experienced a long history of cooperation before the idea of park formation was mentioned [5].

![Conservation Plan of Waterton-Glacier International Peace Park](image)

**Figure 1.** Conservation Plan of Waterton-Glacier International Peace Park [6].
Ecological Functions: The park is composed of forest, prairie, glacial and alpine attributes as well as mammals and plant species [7]. It is placed on the western part of the Interior Great Plains of North America and includes precious elements of Great Plain’s plants. The park combines forest belts, great glacial lakes, huge mountains, deep canyons, and prairie grasslands, and rivers in the vast protected region. Therefore, by conserving the nature, the park consolidates the relationships between peace and nature.

2.2. The Great Limpopo Transfrontier Park (Among Mozambique, South Africa, and Zimbabwe)

Major features: The huge park consists of national reserves and parks, sanctuaries, private and communal land considered among three countries of Mozambique, Zimbabwe, and South Africa [8]. South Africa’s Kruger National Park, Mozambique’s Gaza Province, and Zimbabwe’s Gonarezhou National Park are the main and largest parts of combination. The Great Limpopo as the largest cross-border park in Africa aims to facilitate the elephant’s migration in particular to huge ecological zones as well as improving tourism opportunity through removing the borders between Mozambique and South Africa [9] (Fig. 2).

Ecological Features: The Great Limpopo Transfrontier Park includes four main landscape categories of river valleys, granite plateau, lowland plain, and mountain range in a generally dry landscape. There are five major rivers flowing from west to east in this region. In general, the park has an ecosystem of lowland savannah divided by the Lebombo Mountains extending along the border between Mozambique and South Africa, with mild temperatures and minimal rainfall over year [11].

The conflict salvation increases the wildlife health by enhancing genetic diversity within populations and a general improvement in food resources and ecological habitats [9].

2.3. “W” Transborder Parks (among Benin, Burkina Faso, and Niger)

Main features: The W Park is a huge international protected area, including 1 million hectares of a surface coverage shared among three countries of Burkina Faso and Niger, Benin. The park takes its name “W” from a geometrical figure made by the Niger River between the mouth of the Me’krou River in Benin and the Tapoa River in Burkina Faso.

The World Heritage Convention registered the park as UNESCO World Heritage area in 1996. Following year, in 2002, it was added as a Transboundary Biosphere Reserve by the Man and Biosphere Program [12].

Occurrence of human poverty in the area has required the W park periphery to have environmental and economic forces. Thus, transforming this natural reserve into a true peace park is a solution that could resolve conflicts engendered by prior management [5]. It would be regarded the park as a tool that belongs not only to the state and national officials, but to the border communities and populations regarding their rights and duties of the park management (Fig. 3).
Ecological Features: The park is famous for its large animals and mammals and provides an accommodate for some wild African elephants. The National Park is also one of the last habitats for the cheetah population of Northwest Africa. At least, 15-25 animals of this rare cat are estimated in the park whose populations is obviously increasing.

Around 350 bird species are identified in the “W” park that includes particularly transitory migrating species. It has been recognized as an important bird region by the International Bird Life.

2.4. Kavango - Zambezi Transfrontier Conservation Area (KAZA) (among Namibia, Angola, Zambia)

Main Features: KAZA is located in a site where the political borders of five countries meet. It is composed of a large part of the Okavango Basin and Delta and the Upper Zambezi basin. This ecological region consists of southwestern Zambia, the northern wildlands of Botswana, western Zimbabwe, the Caprivi Strip of Namibia, and the southeastern corner of Angola [14]. It aims to conserve and organize the biodiversity and the common cultural and natural resources of the KAZA Transfrontier Conserved Area to protect viable and healthy communities of wild species (Fig. 4).

Figure 4. Kavango - Zambezi Transfrontier Conservation Area [15].

Ecological Features: Hwange National Park, the Okavango Delta in Botswana, Chobe National Park and the Victoria Falls are the sites included in the park. The confluence of Zambezi River and the Chobe River are located in the center of the site where the borders of Zimbabwe, Botswana, Zambia, and Namibia meet.

Vulnerable population of cheetah, 250,000 of African elephant, African wild dog and Wattled Crane and Nile crocodile are the animal species of the area [16].

2.5. Binational Red Sea Marine Peace Park (between Israel and Jordan)

Main Features: The Red Sea Marine Peace Park belongs to Israel and Jordan. Israel and Jordan have round 41 kms of shared shoreline located along the northern Gulf of Aqaba. This park connects Israel’s Coral Reef Reserve in Eliot and Jordan’s Aqaba Marine Park (Fig. 5).

Figure 5. Locus map of the Red Sea Marine Peace Park [17].

Realization of the spectacular and unique nature of the Gulf has caused that each country takes steps for protecting the environment of coral reef [18]. Israel and Jordan have agreed to cooperate together unlike their political separation. The two countries clearly felt that the region will rapidly become a dead zone and a degraded area without correct management and pollution controls. The main objectives of the creation of this park are to protect the shared marine ecosystem and coastal resources and to foster coordination and peace between the two countries [19].

Ecological Function: The Gulf of Aqaba with 180 kms length and 20 kms width is a semi-enclosed sea enlarged in northern part of the Red Sea. In the past, the Red Sea was famous for its exceptional corals, varieties of fish and its marine life that many of them were unique in the area. However, now, the coral reefs in the region are depredating particularly because of their isolation from the oceanic process of flushing and circulation, and also
extensive pressure of fishing, tourism, and land use development. The proposed marine peace park has been considered between the shores and the surrounding towns of Eliot and Aqaba in the northernmost stretch of the Aqaba Gulf [20].

2.6. Iona - Skeleton Coast Transfrontier Conservation Area (shared in Angola, Namibia)

Main Features: There is an agreement between Namibia and Angola to cooperate together in order to develop a transfrontier park. Main components of these parks are four areas that include Namibia Partial Reserve in Angola, the Iona National Park in Angola, Erongo Region known as the North West People’s Conservation Area, The Skeleton Coast National Park (Namibia), and a suggested conservation zone in Namibia involving native communities in the Kunene. The youngest component was established more than 35 years ago, while the others show a longer history. After Angolan civil war, the park got damaged due to the infrastructure destruction and illegal poaching. So, some restorative activities were required to be implemented by the government over the park [20].

Ecological Feature: The Iona National Park and the Skeleton Coast National Park both emerge in a desert zone including the Namib Desert. The Iona National Park is known for its impressive rock structures and incredible mountains, however the Skeleton Coast National Park is rich in substances like diamonds and other gemstones.

The Atlantic Ocean in the western border of the Skeleton Coast National Park has brought much more diversity to the zone by the cold-oceanic current of Benguela (Fig. 6). The Namib Desert extending northwards of Iona has similar marine species to those which are found in Namibia Skeleton Coast Park and the adjacent areas. The black-faced impala and the Welwitschia mirabilis plant are the examples of the area species.

Figure 6. Otarie Del Capo, Skeleton Coast National Park /Namibia [21].

2.7. Mnazi Bay-Ruvuma Estuary Marine Park (in southern Tanzania, on the Mozambique border)

Main Features: The park is placed in the Mtwarra region of Southeast Tanzania and covers the whole district towards the border of Mozambique. The area has extensive biodiversity values covering 33% of the land’s biodiversity. The park enlarges from the northern part of the Ruvuma Estuary to Mnazi Bay which includes the headland of Ras Msangamkuu.

The park has embedded 11 villages and 8 small towns. Around 30,000 individuals whose livelihood depends on marine resources, live in the park. Poverty is one of the main challenges that limits the areas’ development [22].

Ecological Features: The main environmental features located in the park include salt pans, seagrass beds, rocky and sandy shoreline, mangroves, mudflats, fringing coral reefs, lagoonal patch reef, three islands of Namponda, Mongo, and Kisiwa Kidogo, and numerous small rocky islands.

In addition, the park is the home of various populations of dolphins, turtles, whales, birds specifically Crab-plovers which led to the area designation to a significant bird area in 2001.

To the marine protected park, various goals are associated as well as global biodiversity protection (Fig. 7).

Figure 7. Mnazi Bay-Ruvuma Estuary Marine Biodiversity [23].

Another important and rare component in the park is incredible sand dunes of Msimbati channel with more than 15 m height, and around 3 km length extending along the coast [22].

3. Results and Discussion

Peace Park is a classification that integrates peace and cooperative management of ecosystems and cultural
resources across jurisdictional boundaries. Transboundary protected areas (TBPAs) seem that they can handle and mitigate the critical ecological issues associated with borderlands, while there are lots of complex issues such as international cooperation, ecological management, security and budget challenges which should be addressed and studied.

According to Anne Hammill and Besanc, transboundary conservation areas and peace parks have been contributed to peace and cooperation between countries and nations by:

- Building discussions among neighboring countries that have environmental, social, and economic interests in the zones over the political boundaries.
- Providing control and security over sources in the border land in benefitting of the real owners.
- Generating common opportunities for sustainable development, ecotourism, and so on.
- Creating a sustainable net of relationships between protected area’s managers of the involved countries, government and local actors such as international NGOs [24].

However, in these regions with history and experience of conflict, the proposed peace parks can inadvertently exacerbate the condition. So, at first steps, it is essential to analyze the relation between conflict and protected areas.

Transboundary peace parks offer different benefits and results for different groups. For environmental conservationists, they are tools for improving and protecting biodiversity; for mining and oil companies, a source of income and revenue; for tourism actors, a potential for ecotourism development; for military, a place of refuge in period violent and war; and for neighboring local communities, the peace parks can limit accessibility to the natural sources [24].

The main assumption of environmental peacemaking is that how protecting environment can lead to cooperation among the countries. TBCAs deal with different social, cultural and economic forces and interaction at work. They may lead to unexpected results such as destitution, social discrimination, dispute over resource rights, or ethnic contention.

Therefore, a series of approaches were established to integrate the dispute perspective into management and planning of the development projects. The Peace and Conflict Impact Assessment (PCIA), occurred in the mid-1990s by the work by Ken Bush and Luc Reychler is one of the approaches for assessing the effect of those projects and parks [25-26].

The Peace and Conflict Impact Assessment contains the following features and steps:

1. Mapping of conflicts which analyze the dynamics and causes of a dispute on a specific development program.
2. Mapping of the project that reviews the initial objectives, sub-structural purposes, location, stakeholders, timing, personnel, beneficiaries, operational partners, financial and physical needs.
3. Determining the effect of conflict on the program to examine how the conflict has impacted on intervention management.
4. Defining the effect of program on the conflict to examine how various aspects of the interference have contributed to make peace in the area.
5. Recommending according to the all done above to modify the intervention so that it meets the goals.

To create a transboundary protected area, 5 main steps are suggested: The first step is to analyze natural environment; cultural heritage; socio-cultural economic environment; agriculture systems; and environmental quality problems. The second step is to determine the

Table 2. Summary of four cases characteristics as Terrestrial Transboundary Conservation Areas.

| Name                        | Location | Year | Area     | Included Sites                                                                 | Main Objective                                                                 |
|-----------------------------|----------|------|----------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| W Transborder Parks         |          | 1954 | 10,000 km²| W National Parks, Arly Reserves, Pendjari national Park                        | Resolve of conflicts engendered by prior management approach; Increase of the wildlife number; Control of the poaching and divagation of the cattle, bush fires, ecotourism and tourism hunting |
| Kavango - Zambezi Transfronter Conservation Area (KAZA) |          | 2011 | 444,000 km²| the Captivi Strip of Namibia; the southeastern corner of Angola; southwestern Zambia; the northern wildlands of Botswana and western Zimbabwe | Maintenance of the shared natural and cultural heritage resources and biodiversity |
Table 2. (Cont.) Summary of four cases characteristics as Terrestrial Transboundary Conservation Areas.

| Name                                      | Location | Year | Area     | Included Sites                                                                 | Main Objective                                                                 |
|------------------------------------------|----------|------|----------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Waterton-Glacier International Peace Park |          | 1932 | 457,614 ha | Waterton Lakes National Park in Alberta and Glacier National Park in Montana | Management of the land, wildlife and resource uses, including riparian zone management, old-growth forest management areas, and wildlife connectivity. |
| The Great Limpopo Transfrontier Park     |          | 2000 | 37,572 km² | Kruger National Park in South Africa, Gonarezhou, National Park in Zimbabwe, Limpopo National Park in Mozambique | Facilitation of the wildlife migration; promotion of tourism activates through loosening of the borders; Development of the eco-tourism to the area |

Planning approaches such as environment-sustainable development approach, community participation approach. The third one is to produce plans and suggestions related to management plans including base maps for the selected site. The fourth is zoning the area that defines areas with special protection, areas with potential for tourism and recreation and so on. The last one is to integrated monitoring after plan prepared and observing the situation conflicting with the objective to do necessary arrangement and feedback [1].

Table 3. Summary of three cases characteristics as Coast Transboundary Conservation Areas.

| Name                                      | Location | Year | Area     | Included Sites                                                                 | Main Objective                                                                 |
|------------------------------------------|----------|------|----------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------|
| Binational Red Sea Marine Peace Park     |          | 1999 | 11 km of shoreline | Jordan's Aqaba Marine Park and Israel's Coral Reef Reserve in Eliot | Protection of the two countries' shared marine resources while fostering peace and coordination |
| Iona – Skeleton Coast Transfrontier      |          | 2003 | 19,600 Km² | the Iona National Park (Angola), Namibia Partial Reserve (Angola), the Skeleton Coast National Park (Namibia) and a proposed contractual conservation area (Namibia) | Restoration and control over parks against illegal poaching and destruction of infrastructure; Protection of the marine life |
| Mnazi Bay-Ruvuma Estuary Marine Park     |          | 2000 | 650 km² (220 km² is terrestrial and 430 km² is aquatic) | The northern portion of the Ruvuma Estuary to Mnazi Bay, including the headland of Ras Msangamuku | Protection of the wild life serving as reproductive and nursery grounds for many finfish and crustaceans |
4. Conclusion

According to the cases surveyed in this research, some important achievements of peace parks or TBPAs are summarized here are:
- improving natural processes and enhancing the ecosystem integrity through coordinating the management approaches of natural resources;
- consolidating the coordination of the biological and cultural resource management and reinforce economic, social and other cooperation between stakeholders and governments;
- encouraging international collaboration and partnership in establishing a common management of natural and cultural sources;
- generating plans and strategies so that the local communities can utilize and receive advantage from peace parks;
- developing tourism opportunities over borderland in order to generate economic and social development in the region.

With no doubt, ignoring borders and military infrastructures in the peace parks can act effectively in terms of biodiversity and migratory species. However, their functions in dealing with the various challenges to provide peace do not seem clear. Regarding IUCN definition, international peace parks possess great potential for sustainable development and livelihood creation, while it seems that the conversational plans have been considered more than other criteria.

Even though various projects were done in some African countries over the last decades, the issue of peacemaking by environmental planning is completely initial in some other countries such as Asian and Middle East which are suffering from environmental issues over their international borders and need more scientific studies that cover general and specific issues of the subject.

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