



## **Evaluation of The Impact of Dinder National Park Project (DNPP) on the Local community in Dinder Area, Sudan**

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### **ABSTRACT**

This study was conducted in Dinder National Park to evaluate the impact of Dinder National Park Development Project (DNPDP). The project, benefiting from the Area Development Schemes (ADSs) experiences had established about 25 VDCs among the communities surrounding the Dinder Park. The DNPP main objectives were conservation of biodiversity of the park and interaction of the surrounding communities in the conservation and sustainable use of biodiversity in the Park through the application of concepts of Biosphere Reserve management. The questionnaires were distributed local communities to know their perceptions towards the DNPDP. Most of the Community members i.e. about 74.7% said that the project was successful whereas in the opinion of 25.3% respondents the project was not successful.

**Key words:** Dinder National Park Project (DNPP), Local community, Village

### **INTRODUCTION**

Dinder National Park (DNP) overlaps three different states. Administratively, DNP falls under the General administration for National Parks and Wildlife Conservation, which is part of the unified police force of Ministry of Interior. Consequently, national parks in Sudan have been managed with a strong emphasis on patrolling programs and enforcement. Poaching control has been the main objective, resulting in increased enmity between the park administration and local communities. DNP has staff of 280; 17 officers and the rest game scouts. The park administration is stationed in Dinder town, 150 km from the park, whereas the rest of the personnel including the game Scouts are stationed within DNP at the main camp and at 12 game posts along the boundaries.

A (GEF) Global Environment Facility project was implemented jointly through the Higher Council for Environment and Natural Resources (HCENR) and Wildlife Conservation General Administration (WCGA). HCENR housed the project implementation unit; an effective national NGO, the Sudanese Environment and Conservation Society (SECS); was involved as an interested stakeholder and service provider to undertake the environmental public awareness campaign and to assist in establishing and training the Village Development Committees (VDCs) [1].

#### **Project components:-**

**1-Core Zone:** Management plan, provides all basic information to help design an appropriate that assist in designing an appropriate scientific management program for park resources and the involvement of local communities in the management of the park. The Plan also gives the guidelines for training of officers in wildlife sciences and proper approaches towards involving the local communities. Development of infrastructure including the provision of drinking water, construction of permanent buildings, establishment of permanent camp sites, maintenance of the Mayas and provision of appropriate maps and fire breaks network. The project also encourages research, specifically in the ecological and biological fields, that could be supportive of the sustainable use of the biodiversity of the park [2].

**2-Buffer Zone:** This component aims to promote the local people's understanding of the park and its importance. The management prescriptions for this zone include: the enhancement of living standards of local communities, capacity building of the local communities in various related aspects, drawing of land use plans in

the buffer zone, establishment of revenue generating projects that assist the local communities, and rehabilitation of forests in areas that have been deforested/degraded [2].

**3-Transitional zone:** This zone extend along the western bank of the river Rahad(except Daleib Mugdi core area), including the 10 villages within existing boundaries of the park, areas along the river Rahad are treated in a two-dimensional perspective. The first dimension concerns the ten villages within the boundaries of the Park, the second dimension concerns the 28 or more villages on the Eastern bank of the river that depend partly for their livelihood on the resources of the Park for this reason five kilometers on each side of the boundary line are included in for this zone [2].

#### **Project Implementation:**

The project, implemented between 2000 -2004, adopted a two-pronged strategy to address the threats. One component focused on biodiversity conservation through the strengthening the Park management. The second targeted development assistance to the communities living within the park and in the buffer zone immediately adjacent to the park boundaries [1 and 3].

A key activity was preparation and implementation of a management plan, which entailed a large number of studies, including an assessment of the water resources in the Park, a census of wildlife populations, and vegetation surveys. Park infrastructure was improved, including improved water supply and sanitation at game posts and visitor accommodation at Galagu main camp; demarcation of Park boundaries; rehabilitation of roads and firebreaks; and rehabilitation of wetlands to reopen feeder streams and create prime wildlife habitat. Improved patrolling protocols, provision of vehicles and camels for patrol, training in wildlife census techniques, and scheduling home visits boosted the morale of the scouts after prolonged duty in remote locations. Training of game scouts in conflict management and awareness and outreach campaigns was designed to improve relations between the Park staff and the local communities. Research programmes were supported to conduct surveys and produce ecological base-line reports wild animals birds, habitat, rangeland forest and Mayas, and fire incidence. Fish and insects were also surveyed. A mini-museum was established to display key species. DNP was also declared as a Ramsar site [2].

#### **Villages Development Committees VDCs:**

Development activities were focused on promoting sustainable utilization and management of natural resources, and enhancing livelihoods through the community-focused project in selected target villages and communities inside and outside the Park. Socio-economic surveys were undertaken, environmental and health awareness campaigns implemented by Sudanese Environmental Conservation Society, which led to the election of Villages Development Committees (VDCs) in 25 villages in the three states. A central element of the strategy to support the VDCs was the establishment of revolving funds to provide credit to households to fund micro-projects such as alternative fuel sources (butane gas), and village water pumps. The project held training session to build the capacity of the members of the VDCs in areas such as bee-keeping, plant nursery design, agro-forestry techniques, credit procedures, and management [2].

## **MATERIALS AND METHODS**

#### **Questionnaires for the local community:**

**1-Villages inside the Park:** Villages selected inside the park included: Aen Algamel, Hilat Bilo(NoorElmadina), Umkakar, Umsalala, Elkhiraat, Umkora (Umalkhir), and Hilt Ramadan.

**2-Villages outside the Park:** Villages selected outside the park included: Bandighew, Afrush toobk, Aradibt Eltigani, Rogab, Elebeek, Daleeb, Khashm Elbatta, Karsh Elfeel,Elfzraa,Umbagraa, and Mangalagh,Menza, Gabel Elnoor. Three hundred (300) copies of the questionnaire were distributed to inhabitants of above villages. Permission was first obtained from the Chief (Sheikh or Sultan) and leader of youth of each village. Questionnaires aimed to derive information on the tribes, level of education, distance of the village from the park, Dinder National Park Project (DNPP), Villages Development Committees (VDCs), services provided by the wildlife conservation general administration for the local community and also the services not covered by the project. Details of the questionnaire are included in Appendix 1.

#### **Statistical analysis**

The questionnaire data were analyzed by frequency percentage as descriptive statistic were used to analyzes the questionnaires (Local community), inform of the percent frequency.

## **RESULTS AND DISCUSSION**

Dinder National Park Development Project (DNPP), a GEF (Global Environment Facility) funded project through the United Nations Development Programme (UNDP) and was implemented by the Higher Council for Environment and Natural Resources (HCENR), Wildlife Conservation General Administration (WCGA) and the Sudanese Environmental Conservation Society (SECS). The project, benefiting from the experiences gained by

implementing the Area Development Schemes (ADSs) established about 25 Village Development Committees (VDCs) among the communities surrounding the Dinder National Park. The main objectives of the DNPP are conservation of biodiversity of the Park and encouraging the positive interaction of the surrounding communities in the conservation and sustainable use of biodiversity in the Park through the application of Biosphere Reserve concepts.

The tribal structure shows a multiplicity of tribes and groups. The most dominant groups are the tribes of western Sudan, constituting 43% of the village's populations, followed by Arab tribes (20%) West African tribes, accounting for 13%, and Nilotic tribes accounting for about 8% [4].

The Massaleet come first among the tribes, making up to 30.5% of the population; then follows the Bargo (17.5%) the Dago (11.9%), Falata (6.9%), Hossa (5.4%), Selyhab(3.8%), Halaween(3.1%), Rezaigat(2.1%), Dagal(2.1%), Dinka(1.3%), Noba(1.2%), Messerya (1.2%) and Rawashda (1.2%) [2].

Adel and Nimir [5] reported that the main threats facing the Dinder National park could be summarized as; the absence of proper land use practices surrounding the park, ever increasing size of human population in the Dinder area; and the trespassing of pastoralists, the pastoralists forcefully enter the park though large number of herds are caught inside the park and fined. Management activities serve to improve the status of the wildlife resources and address the needs of people who utilize this resource to the benefit of all. Changes in demographics and economic conditions need to be addressed and new foundations lay down. The management of natural resources can be adjusted towards improved balance between man and nature, in and around the Dinder National Park. This balance will create new solutions for the needs for domestic energy, creation of jobs in rural areas, sustainable use of natural resources, improving and modernizing agricultural production methods and setting up stable forms of co-existence with animal's production [6].

**Table 1.** Distribution of the local community in DNP by tribe

Tribe	Distance of the village around the park				Total Frequency
	Inside the park		Outside the park		
	Freq.	Percent	Freq.	Percent	
<b>Massaleet</b>	30	33%	81	38.8%	111
<b>Foung</b>	1	1.1%	45	21.4%	46
<b>Falata</b>	15	16.5%	16	7.5%	31
<b>Brgo(selehab)</b>	2	2.2%	20	9.5%	22
<b>Rawashda</b>	10	11%	5	2.4%	15
<b>Hossa</b>	0	0%	9	4.3%	9
<b>Dago</b>	5	5.5%	5	2.5%	10
<b>Dagal</b>	12	13.2%	1	0.5%	12
<b>Foor</b>	0	0%	12	5.7%	12
<b>Others</b>	16	17.5%	15	7.4%	
<b>Total</b>	91	100%	209	100%	300

Others consist of one or two frequency and these represented in Zaghawa, Kenanna, Ben Amir, Marareet, Salamat, Noba, Halaween, Gemer, Brnoo, Tungr, Tama, Rezygat, Messerya, Roufaa, Hamadi, Mimawe and Kjaksa.

**Table 2.** Educational level of the local community

Education Level	Freq.	Percent
<b>Illiterate</b>	33	11%
<b>Quran (khalwa)</b>	162	54%
<b>Primary school</b>	80	26.7%
<b>Secondary school</b>	23	7.7%
<b>University</b>	2	0.7%
<b>Total</b>	300	100%

**Table 3.** Assessment the impact of DNPP from the stakeholders

Is the project was successful	What is the reason			
	Services provided		No services were provided	
	Freq.	Percent	Freq.	Percent
<b>Yes</b>	224	99.6%	0	0%
<b>No</b>	1	0.4%	75	100%
<b>Total</b>	225	100%	75	100%
<b>Over all Total</b>	300		100%	

P-value=0.000 (there is association)

Comments made by respondents who gave negative answers suggest that the apparent antagonist towards the government wildlife management authorities stems from the perceptions that department of wildlife employees are unfairly privileged in terms of their access to the wildlife resources which villagers are denied, and that the Department Game Scout are over-zealous in terms of harassing local people unnecessarily, while failing to catch the real poachers. From the table 4, it is clear that (74.7%) of the stakeholders said that the project was success and the (25.3%) said not success.

**Table 4.** The success of the project

Is the project was successful	Freq.	Percent
Yes	224	74.7%
No	76	25.3%
<b>Total</b>	<b>300</b>	<b>100%</b>

**Table 5.** The kind of training

Kind of training	Is the project has trained the local community			
	Yes		No	
	Freq.	Percent	Freq.	Percent
Awareness	93	38.4%	0	0%
Bee keeping	43	17.8%	0	0%
Women and child health	77	31.8%	0	0%
Strategic planning	29	12%	1	1.7%
No training	0	0%	57	98.3
<b>Total</b>	<b>242</b>	<b>100%</b>	<b>58</b>	<b>100</b>

P-value=0.000(there is association)

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