

Evaluation of Socio Economic and Environmental Impacts of Vankalai Bird Sanctuary in Mannar

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ABSTRACT

This study evaluates the Environmental, Economical and Social impacts of the Vankalai Bird Sanctuary which was declared with a view to conserving the natural habitats for migratory and endemic birds, bio-diversity and natural beauty whereby there are many socio economic disadvantages as consequences to the declaration. This research explores these impacts systematically by analyzing relevant environmental data on flora and fauna, human activities and land use of the declared area collected from Central Environmental Authority and Department of Wild-Life Conservation. Environmental resources, bio diversity of the area were directly observed and people from the local area and officers related to the declaration and conservation were interviewed to collect data required for the research. Descriptive analysis methods have been used to assess the impacts. The finding shows that protections of natural habitats, bio diversity, land use, preservation of natural beauty are significant environmental impacts created by the declaration. This bird sanctuary turned into a tourist attraction has created employment and development of recreational facilities. However the declaration has caused many negative impacts such as displacement of residents, prohibition of several human activities, loss of agricultural lands, employment, income from the local area. The positive impacts outweigh the negative ones since bio diversity and natural habitats have profound impacts in maintaining the sustainability and balance of natural environment where humans can enjoy safer and healthier living conditions. It is essential to create and adopt regulations to foster eco friendly economic and social activities to utilize the space declared as sanctuary productively which can provide economic opportunities to the local residents.

Key words: Birds sanctuary, Economic Impacts, Environmental sensitive area, Migratory birds, Ramsar area,

1. Introduction to the Research

This research explores the impacts of Vankalai Sanctuary in socio, economic and environmental sectors in the locality. In order to achieve the objectives of preserving wet- lands reached in the Ramsar Conference, an area of 4838.95 hectare, encompassing the villages of Pallimunai, Thiruketheeswaram, Vankalai, Puliyantheevu in Mannar district was declared as Vankalai Birds Sanctuary by Department of Wild Life Conservation, on 8th September 2008, vide Gazette notification. This is a partially wet-land area with wet and dry zone flora, sea beds, and sand dunes and endowed abundantly with natural beauty. More than 20, 000 water birds migrate annually from foreign countries like India, France and Europe. Hence this area is found to posses Ecological and Tourism related importance. Thus objectives of this study were to assess the ecological importance and the economical, social impacts of this sanctuary.

The favorable impacts of the declaration of the Vankalai Birds sanctuary as a protected wet- land area and its economical and social effects, and the details of the migratory birds coming to this sanctuary were obtained as primary and secondary data. The primary data were collected through direct observations and interviews with the officials of Department of Wild Life Conservation, Central Environmental Authority and the people of the area. The data so obtained was subjected to descriptive statistical analysis and conclusions of this study had been presented descriptively and graphically.

The results obtained through this study show that the Vankalai Birds Sanctuary is of ecological importance by way of protecting the Bio – diversity and preserving the natural beauty and natural value. It also imparts favorable impacts on economic sector by providing employment opportunities by way of being a recreational area to local and foreign tourists. At the same time, it had imparted unfavorable impacts by way of acquisition of agricultural and residential lands and the related social and economical impacts.

2. Research problem and the back ground of the study

The Vankalai Birds sanctuary creates direct and indirect impacts on the environment, economy and society by being declared as a protected area. Particularly this area plays an important role in protecting the bio- diversity of marine and coastal environments. More than 60 varieties of fishes, marine plants wet land vegetation, bushes, and thorny shrubs are found here. Thus Vankalai Birds Sanctuary provides breeding grounds to several species of animal life and supports the protection of these species. More than 20,000 water birds migrate from abroad every year. It is also an important location for attracting tourists. However due to the declaration of Vankalai Birds Sanctuary as a protected area had caused the acquisition of agricultural and residential lands of 226 families. It was assessed that this acquisition has caused loss of employment and displacements of people. However no scientific research had been undertaken so far to assess the impacts. Thus, this study has assessed the ecological importance and Social and Economical impacts of the Vankalai Birds Sanctuary

3. Research area

The Vankalai Birds Sanctuary is located in the Mannar District in the Northern Province of Sri Lanka. This sanctuary is approximately of an extent of 4838.95 hectare on both sides of the bridge linking Puliyantivu, Thiruketheeswaram, Pallimunai, Vankalai and Mannar mainland with Mannar island. It is

bounded to the North by Thiruketheeswaram Temple, to the West by the Indian ocean. The Vankalai Birds Sanctuary of Mannar is found to be a partially wet area consisting of areas of dry zone shrub, jungles, grazing grounds, water reservoirs, ponds, saline marshes, grass plains, and sea beds.

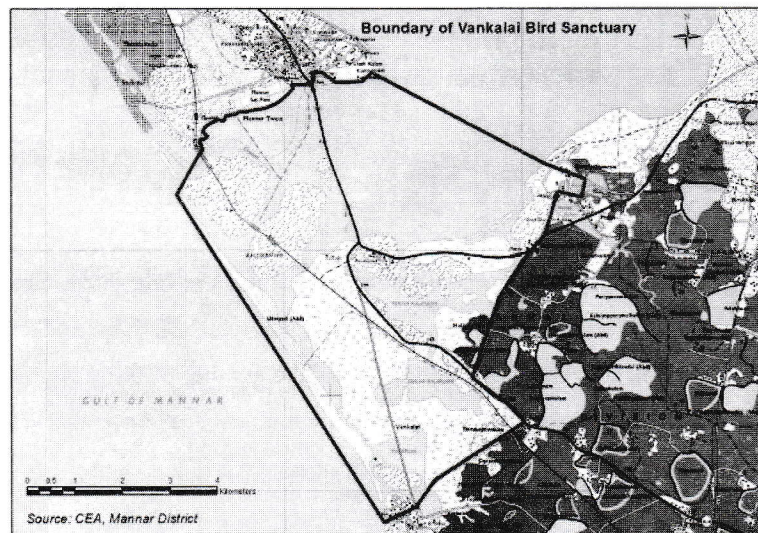


Figure 01: The location and the boundaries of Vankalai Birds Sanctuary.

Source: Central Environment Authority, Mannar District

4. Objectives of the Research are;

- To assess the favorable impacts on environment, by the declaration of Vankalai Birds Sanctuary.
- To assess the favorable and unfavorable economical impacts caused by the declaration
- To assess the favorable and unfavorable Social impacts caused by the declaration.

5. Review of Literature

Emerton et al. (1998) carried out a research on "Economic valuation study of Nakivubo urban wetland in Africa" and the objective of this paper was to highlight the important economic values of wetland. This research had been undertaken by analyzing relevant data including information oriented to management on wetland, threats and uses, land tenure, benefits and values and other secondary and primary data. Descriptive methods have been used to analyze the data. The finding shows that crop cultivation, papyrus harvesting, brick making, fish farming, water treatment and purification are noticeable advantages of wetland.

An Environmental valuation of wetland was carried out by Kevin L. Erwin (2008), titled as "Wetlands and global climate change: the role of wetland restoration in a changing world". Objectives of research was to find the importance of wetland restoration in future climate change from examining over 250 articles pertaining to wetlands and climate change. Descriptive method was used for this study. The finding of this study showed that wetland playing an important role in the global carbon cycle and it is maintaining hydrology, reducing pollution, controlling exotic vegetation, and protecting wetland biological diversity and integrity are important activities to maintain and improve the resiliency of

wetland ecosystems so that they continue to provide important services under changed climatic conditions.

Kirsten Schuijt (2002) carried out a study on "Land and Water use of Wetlands in Africa: Economic values of African Wetlands". This paper focuses on importance of wetlands for human populations in Sub-Saharan Africa. Conclusion of this research was that the wetland has more immediate economic benefits, such as wetland goods (fish) that are traded on the market place, agricultural activities and use of wetlands waters for electricity generation.

6. Research methodology

The data on the environmental and economical impacts of the Vankalai Birds Sanctuary were obtained from primary and secondary sources. The data of the physical features of the sanctuary, details of fauna and flora found in the sanctuary, the type and the number of birds migrating to the sanctuary, were obtained as secondary data from the central Environment Authority and Wild Life Conservation Department.

Data on physical appearance and the current activities of the sanctuary area were obtained as primary data through direct observation and interviews. The favorable and unfavorable impacts of the Vankalai Birds Sanctuary on social and economical sectors were assessed through structured interviews with officers of the Central Environment Authority, Wild Life Department and Pradhesiya Sabas. The data on loss of residential and agricultural lands of the people were obtained through structured interviews and discussions with affected people. The data so obtained were analyzed using descriptive statistical techniques and conclusions of this study had been presented.

Impacts by the Declaration of the Sanctuary

This study on the impacts of Vankalai Birds Sanctuary had found out that there are ecological, economical and social impacts caused by the sanctuary by analyzing the data obtained through the main data collection method of field studies and secondary data.

Environmental Impacts

The Vankalai Birds Sanctuary causes favorable impacts of conservation of Bio –diversity and preservation of natural beauty by being declared a Ramsar area.

Impacts on Natural Land use and Bio – diversity

Vankalai Birds Sanctuary area consists of partially wet land area and dry weather. Particularly it consists of thorny plants, dry grazing lands, sea grass beds, sand dunes marshy forests, saline marshes, lagoons and shallow sea areas. Wet lands largely contain biodiversity because of this sanctuary acts as the habitat of dry and wet zone fauna and flora and supportive to the breeding while playing an important role in preserving bio- diversity (EPA2001).

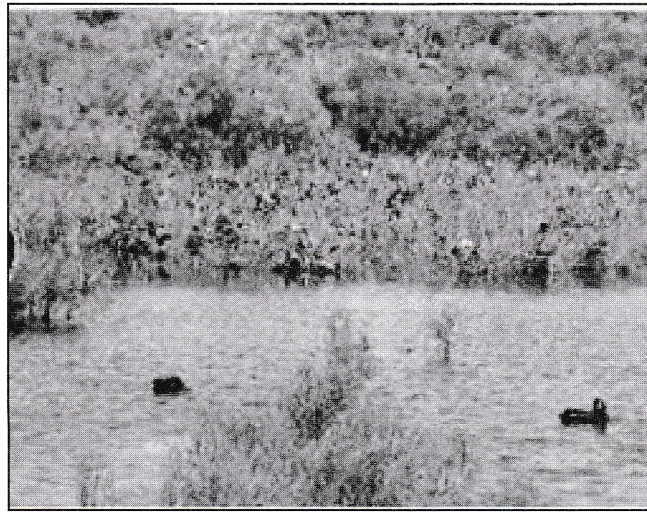


Figure 02: wet land area , Vankalai
(Source: Direct Observation)



Figure 03: wet land area , Vankalai
(Source: Direct Observation)

Particularly, this area is found to be the habitat and feeding ground of local and migratory birds. Several types of migratory water birds such as Greater Flamingo, Eurasian Wigeon come here and go away during the period from the month of December to the month of March. In addition, local birds like Common Jell, Cotton Pigmy Goose and Crab – Plover are found here.

Further, the Vankalai Birds Sanctuary protects the environmental system of sea and sea shore. It is the habitat of more than 60 varieties of fishes including endangered species like sea turtles, Avillia, and saline water crocodiles. Thus, while being an area preserving the bio- diversity and food – chain the Vankalai Birds Sanctuary is causing a favourable impact, directly and indirectly in preserving environmental balance.

Creating Environmental value and Natural Beauty

Vankalai Birds Sanctuary area consists of dry and wet soil areas and natural landscapes. As this area had been declared a protected area, this sanctuary preserves natural green environment. Particularly its wet lands absorb impurities and help to enhance the quality of the underground water. Further this green environment imparts a favorable impact on the weather. It also paves the way for the protection of rare plant species of the dry zone. Additionally it helps to protect the areas around the sanctuary

from the effects of high tides (EPA 2001). Further it is found to contain rare medicinal herbs. The Vankalai Birds Sanctuary preserves natural value and natural beauty through the above and through containing dry and wet climate areas.



Figure 04: Aloe herbal plants – Vankalai
(Source: Direct Observation)

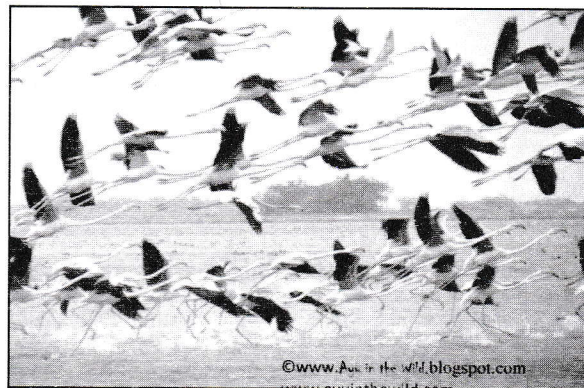


Figure 05: Natural scenery of Vankalai Birds Sanctuary.
(Source: Direct Observation)

Economic Impacts

The Vankalai Birds Sanctuary, which was created to preserve Bio – diversity, causes advantage and disadvantage impacts on the economy.

Favorable Impacts

Vankalai Birds Sanctuary makes many impacts directly and indirectly on the national level economy through tourism sector and employment.

Being a Recreational centre

The Vankalai Birds Sanctuary being an area of bio diversity, natural beauty and a place of refuge for the migration of the birds, it had become an important recreational centre in the Mannar district.

Vankalai Birds Sanctuary is an area with dry and wet land areas and natural beauty. It is now a recreation centre for both local and foreign tourists. More than 75 species of rare birds such as greater Flamingo, Northern pintail, Eurasian Wigeon, Comb Duck, Red Necked Phalarope come here in the period from December to April from India, Germany and other countries. The birds attract people. The number of the rare species of birds which came to Vankalai Birds Sanctuary during the period of 2003 to 2015 and from 2015 January to August, and their numbers are shown in Table 01.

Table 01. The varieties and Number of rare bird species which visited Vankalai.

Birds types	2003 - 2010	2015 (January to August)
Northern pentails	95000	8000
Greater Flamingo	5000	100
Unidentified ducks	3000	500
Indian spot billed duck	4000	100
Ducks-Garganey	12000	4000

Ceylon Bird Club Reports 2003, 2010,2015)

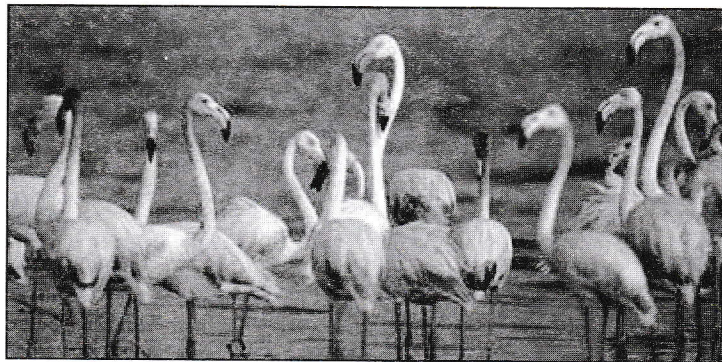


Figure 06: Greater Flamingos at Vankalai
(Source: Direct Observation)

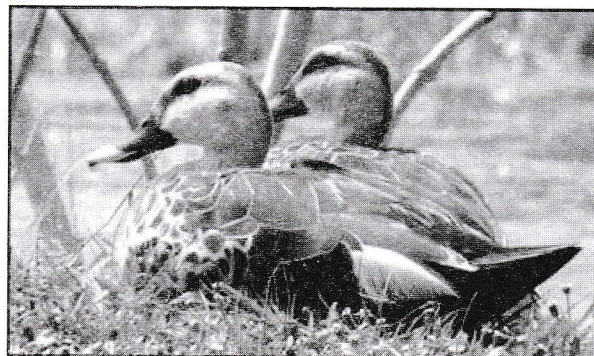


Figure 07: Indian spot billed duck at Vankalai

Thus, as the Vankalai Birds Sanctuary is found to be a recreational centre for local and foreign tourists, it impacts direct and indirect impacts on the economy of Mannar. Small shops and a tourist hotel are

established in close proximity to the sanctuary. These have an impact on the economy through providing employment and income.

Local employment opportunities

20 persons had employment under the conversion of Vankalai Birds Sanctuary into a protected area project for purpose of security of Sanctuary. They have been appointed after training as Tourist guides and Birds Watchers' guides.



Figure 08: The Bird watching Facility in Vankalai Birds Sanctuary
Source: Direct Observation, 2015

Further, hotels, snack bars, and other commercial ventures are being constructed in close proximity to the Vankalai Birds Sanctuary. This provides employment opportunities to the people of the area. It could be seen that local people engaging in activities in the fishing in the marsh lands around this sanctuary.

Thus the Vankalai Birds Sanctuary creates positive impacts on the Economy of Mannar, through providing employment opportunity and contributes to the improvement of the life of the local people.

Unfavorable Impacts

The Declaration of Vankalai Birds Sanctuary as a Protected area by the Department of Wild Life Conservation, is causing disadvantage impacts like, the loss of residential and Agricultural lands of people, re – settlement, on the National Economy.

Social Impacts

Many negative economical impacts are created by Vankalai Birds Sanctuary. Those impacts are social impacts due to the sanctuary.

Loss of Residential and Agricultural lands

The lands occupied by the people for the purpose of residence and agriculture had been confiscated by the declaration of the Vankalai Birds Sanctuary. Particularly, the lands coming under Mannar, Nanattan Pradeshiya Sabai were confiscated. The residential and agricultural lands of 100 families of the villages of Pallimunai, Nagathavu, Thallady, Thiruketheeswaram, and Uppukulam in Mannar Pradeshiya Sabai were confiscated like this.

The employment opportunities of people in the area are lost due to the acquisition of agricultural lands. Further 16,652 hectare of residential lands were confiscated from 176 families in Vankalai North GS division (MN/97) of the Nanattan Pradeshiya Sabai. Because of this, people were confronted by setbacks such as displacement and loss of employment.

Displacement and Resettlement

The state lands which were granted to people in 1980 for the purpose of constructing residences, to people in Mannar and Nanattan Pradeshiya Sabais were confiscated back, for declaring the Vankalai Birds Sanctuary. In lieu of the lands that were so acquired, the affected people of Mannar Pradeshiya Sabai, were given lands in Madhu area and people of Nanattan Pradeshiya Sabai in Thuvarkerny and Vankalai East. Due to the displacement, people have been encountering unfavorable situation such as leaving their green peaceful rural environment, agricultural lands and traditional habitats. People have lost their income and livelihood, food security and living standard were affected.

Conclusions of the study

The declaration of the Vankalai Birds Sanctuary has caused positive and negative impacts ecologically and economically. Particularly due to the Vankalai Birds Sanctuary being declared as a protected area, agricultural and residential lands of 276 families had been confiscated and loss of employment and loss of income also have been caused. As this area is located in close proximity to Mannar town, it had created shortage of land for urban development. Although the people are opposing this, ecological and environmental enthusiasts had accepted this, as this sanctuary is creating advantage environmental and economical impacts such as, Preserving land and Bio – diversity, preserving of natural beauty and natural value, providing employment, creating recreational facilities, and being an area that attract Tourists.

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