

The Sundarbans: A Reliable Livelihood Hub

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ABSTRACT

The Sundarbans have protected the coastal areas of Bangladesh like a mother in times of natural calamities. The basic needs of the coastal people are largely met from the resources of the Sundarbans. Due to lack of adequate knowledge and lack of knowledge of the financial value of the contribution of the Sundarbans, the rural people are not interested in taking proper care of it. As a result, this invaluable blessing of the Creator has come to the brink of destruction. It is difficult to determine the value of the comprehensive resources and services of the Sundarbans in financial terms. The main purpose of my writing is to compile the scattered information so that the simple people of the villages can know the contribution of the Sundarbans in financial numbers, which will inspire them to work for the protection of the Sundarbans.

Keywords: Ecological Services; Livelihood; Management; Mangrove; Protection; The Sundarbans

A Reliable Livelihood Hub

The Sundarbans mangrove forest (SMF) is the single largest coastal belt, with an area of 10,000 km² and a network of 450 rivers across the province of Bangladesh (60%) and India (40%) [1]. It covers 44% of the forest land and 4.2% of the total area of Bangladesh [2]. It places in the ancient delta of the Ganges River and spreads across Satkhira, Khulna, and Bagerhat districts. The Sundarbans, one of the world's richest biodiversity hotspots, constitute 35% of the wildlife of Bangladesh [2] where 500 species of plants, 448 vertebrates including the mighty Bengal Tiger and Ganges Dolphin, about 300 hundred fish and shrimp species and about as many as 240 insect species are found in the biome [3]. The UNESCO declared as a "Ramsar Site" in 1992 and solicited three wildlife sanctuaries of the forest as "World Heritage Site" in 1997. The Sundarbans execute ecological functions and provide support for livelihood [4]. About 3.5 million people live around the Sundarbans and they depend directly or indirectly on this forest [5]. Mainly, the rural people living within 20 km outside the forest frontier, stated to as the influence zone, are primarily reliant on the mangrove forest for their livelihoods and subsistence [6]. Most of the dependent people are illiterate and poor in the Sundarbans as

well as Bangladesh [7,8]. Islam, et al. [9] found the average literacy rate and income of the Sundarbans dependent people were class five and 4,620 BDT respectively where Saha, et al. [10] found the average income was Tk. 8495 and 4433 for the boatman and eco-tour guide respectively.

Shah and Dutta [4] found that about 50% of the households depending on forest- earn 75%-100% of their total income from the forest resources. The Sundarbans provided a wide variety of ecosystem, economic and cultural services [11]. It provided foods, fishery products, and income for coastal inhabitants [12] and also acted on a natural blockade, defending lives and property from flooding, storms, cyclones and soil erosion [13,14]. The people entered the Sundarbans for fish, honey, golpata, fuel wood, hogla, prawn, hantal, crab, nall, grass, keora fruit, malia, goran stick, molasses and medicinal plants [15,16]. Using official records of revenue collected by the Forest Department during 2001-2010, the value of major provisioning services and cultural services of the Sundarbans amounting US\$ 1.39/ha/year. About 90% of saleable fishes and 35% of all fishes in the Bay of Bengal depend on the Sundarbans [17]. It contributed 1.7% of Bangladesh's total

domestic fisheries production [18]. On average, about 10.37 metric ton (MT) of fish was harvested every day from the Sundarbans and the revenue from fish products was US\$ 158,368 in 2014-2015 [19]. However, about 2.6 million shrimp and 1,123 MT mud crab were collected per year from the Sundarbans, making revenue of US\$ 52,026 [18]. In 2014-2015, about 2,773 MT of dry fish produced in the region and US\$ 1,79,761 collected as revenue. Each household adjacent to Sundarbans caught about 1.4 metric tons of fish and about 1.1 tons of crab every year where the household's consumption amount to about 68 kg and 10 kg per year, respectively [20].

It means that 1-4% of the total harvest was consumed while the rest was sold on local markets or traders. The Government of Bangladesh has banned all types of timber harvesting from Sundarbans in 1995. Yet, about 26,930 ft³ wood fuels was collected in the fiscal year 2014-2015, mainly from timbers seized from encroachers as well as trees collapsed during natural calamities [20]. Each household collected about 1,100 kg of fuel wood per year and bought approximately 200 to 300 kg at local markets [20]. Around 16,868 MT of golpatta (*Nypa fruticans*) collected in 2014-2015 [18] where a family harvested around 27.8 tons per year, of which the collectors consumed about 4% of the total harvest [20]. An estimated 67 MT of honey and 63 MT of wax harvested from the Sundarbans in 2014-2015 [21]. A honey collector harvested about 0.7 tons per year, of which they consumed about 1% [20]. The Sundarbans contribute about US\$ 53.14 million per year to Bangladesh's national economy and offer outstanding prospects for developing ecotourism [22]. The economic paybacks of the cultural services of the Sundarbans mainly come from tourism. The scenic beauty, river cruise, wildlife watching, and hiking activities in the Sundarbans attract many tourists each year. In 2014-2015, a total of 96,949 native and 3,868 foreign tourists visited the Sundarbans, making around US\$ 1,44,832 as revenue [21]. Tourism has some adverse influences on the Sundarbans like habitat annihilation, eutrophication, diversity loss and coastal contamination for tourism activities [23,24].

Ecotourism can be a conceivable resolution for solving this problem as it has an appropriate approach for dropping the environmental impacts of tourism [24]. It found that most of the individuals approved that they will halt removing natural resources from Sundarbans, if they find an alternative income source [23]. Moreover, Haque and Aich [25] reported that the Sundarbans generate Ecological Services worth about US\$ 450-1000/ha/year. The Sundarbans is commonly known as the lungs of Bangladesh also crucial in terms of carbon sequestration. In 2010, the total predictable carbon in the Sundarbans was about 56 million MT and traded the Sundarbans carbon at US\$ 5-15 per ton that would

be about US\$ 280-840 million per year [1]. In conclusion, a huge livelihood hub like the Sundarbans is playing a crucial role in the economic development of the whole of Bangladesh along with the coastal areas of our country. The mangrove ecosystems have been exploited over the year with little or no knowledge of residents and stakeholders. The benefits provided by the Sundarbans include but not limited to food, wood, fishes, climate regulation, recreation, waste management and erosion prevention. We need to adopt various long-term plans now to meet the needs of the growing population as well as to ensure sustainable development of the Sundarbans for future generations.

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