

Credible, independently-produced critical evaluations of the Rampal Supercritical Coal Thermal Project, 1320 MW

(click to access original full texts)

Diversity 2015, 7, 242-269; doi:10.3390/d7030242

OPEN ACCESS
diversity
ISSN 1424-2818
www.mdpi.com/journal/diversity

Review

Bangladesh Sundarbans: Present Status of the Environment and Biota

Abdul Aziz¹ * and Ashit Ranjan Paul²

¹ Department of Botany, University of Dhaka, Dhaka 1000, Bangladesh

² Assistant Chief Conservator of Forests, Bangladesh Forest Department, Ban Bhaban, Agargaon, Dhaka 1000, Bangladesh; E-Mail: aranjnpaul4158@gmail.com

* Author to whom correspondence should be addressed; E-Mail: dr.aziz.botany@gmail.com; Tel.: +880-1914818448.

Academic Editor: Peter Saenger

Received: 2 March 2015 / Accepted: 29 June 2015 / Published: 10 July 2015

Abstract: The Sundarbans is a deltaic mangrove forest, formed about 7000 years ago by the deposition of sediments from the foothills of the Himalayas through the Ganges river system, and is situated southwest of Bangladesh and south of West Bengal, India. However, for the last 40 years, the discharge of sediment-laden freshwater into the Bay of Bengal through the Bangladesh part of the Sundarbans Mangrove Forests (BSMF) has been reduced due to a withdrawal of water during the dry period from the Farakka Barrage in India. The result is two extremes of freshwater discharge at Gorai, the feeding River of the BSMF: a mean minimum monthly discharge varies from 0.00 to 170 m³·s⁻¹ during the dry period with a mean maximum of about 4000 to 8880 m³·s⁻¹ during the wet period. In the BSMF, about 180 km downstream, an additional low discharge results in the creation of a polyhaline environment (a minimum of 194.4 m³·s⁻¹ freshwater discharge is needed to maintain an oligohaline condition) during the dry period. The Ganges water carries 262 million ton sediments/year and only 7% is diverted in to southern distributaries. The low discharge retards sediment deposition in the forestlands' base as well as the formation of forestlands. The increase in water flow during monsoon on some occasions results in erosion of the fragile forestlands. Landsat Satellite data from the 1970s to 2000s revealed a non-significant decrease in the forestlands of total Sundarbans by 1.1% which for the 6017 km² BSMF is equivalent to 66 km². In another report from around the same time, the estimated total forestland loss was approximately 127 km². The Sundarbans has had great influence on local freshwater environments, facilitating profuse growth of *Heritiera fomes* (sundri), the tallest (at over

ENVIRONMENTAL IMPACT OF COAL BASED POWER PLANT OF RAMPAL ON THE SUNDARBANS (WORLD LARGEST MANGROVE FOREST) AND SURROUNDING AREAS

ABDULLAH HARUN CHOWDHURY¹
Environmental Science Discipline, Khulna University, Bangladesh

Abstract

The physico-chemical conditions of air, water and soil, and biological conditions of the proposed Coal based Power Plant area (Rampal), Mongla and the Sundarbans were studied from August 2011 to July 2013 to assess the possible environmental impact on the Sundarbans and surrounding areas. Environmental Impact Assessment (EIA) of physical, biological, social and economic environment of the study areas indicate that most of the impacts of coal-fired power plant are negative and irreversible (-81) which can't be mitigated in any way. It is indicating that climate, topography, land use pattern, air and water quality, floral and faunal diversity, aquatic ecosystems, capture fisheries and tourism of the Sundarbans and the surrounding areas would be affected permanently due to proposed coal fired power plant. Increasing of water logging conditions, river erosion, noise pollution and health hazards; decreasing of ground water table; loss of culture fisheries, social forestry and major destruction of agriculture would be happened due to coal fired power plant. The benefits of proposed coal fired power plant of Rampal is very poor (S+19) than that of negative irreversible impact (-81). So the proposed area is not suitable to establish the coal based power plant as the Sundarbans and surrounding areas would be affected permanently by establishing the proposed coal power plant.

Key words: Coal, Power Plant, Rampal, The Sundarbans, Environmental Impact

Introduction

Coal based power plant produce electricity by burning coal in a boiler to heat water to produce steam. The steam, at tremendous pressure, flows into a turbine, which spins a generator to produce electricity. A typical 500-megawatt coal power plant creates more than 125,000 tons of ash and 193,000 tons of sludge each year which contain arsenic, mercury, chromium, and cadmium etc. and more than 75% of this waste is disposed of in unlined, unmonitored onsite landfills and surface impoundments as a result source of drinking water (ground water) is being contaminated and damage vital human organs and the nervous system (Mittal *et al.* 2011). According to the studies of Billings (2011), Mittal *et al.* (2011) and UCS (2012) ecosystems have been damaged sometimes severely or by the disposal of coal plant waste and heat. A coal power plant uses only 33-35% of the coal's heat to produce electricity and rest of the heat is released into the atmosphere and absorbed by the cooling water (Billings 2011). Once the 2.2

¹ Corresponding: aharunc_ku@yahoo.com

Page 1

J. Asiat. Soc. Bangladesh, Sci.41(1):75-94, June 2015

IMPACT OF OIL SPILL ON THE SUNDARBANS MANGROVE FOREST

ABDULLAH HARUN CHOWDHURY¹ AND MD ALI AKBER
Environmental Science Discipline, Khulna University, Bangladesh¹

Abstract

Impact of oil spill on the Sundarbans has been studied to find out the immediate impact on the ecosystem of the Sundarbans after oil spilling. More than 500 km² areas out of the total study area have been affected seriously by the oil spill contamination. Recorded data of the physico-chemical conditions, oil content, productivity, diversity and abundance of phyto-zooplankton and benthos of water, and oil content in soil indicate that the water and soil of the Eastern part of Sundarbans were polluted by the oil contamination. The recorded data also indicates that seedlings, mangrove algae, eggs and hatchlings of commercially valuable fishes, mudskippers, mud crabs, snails, monitor lizards were affected due to oil spill; regeneration of the *Sundri* trees; intertidal zone bird - 'Masked finfoot', common birds, fishing cat, otter, dolphins, crocodile would be affected due to the oil spill hazards of 9th December 2014. Long term monitoring, research and proper implementation of all rules and regulations are necessary to save the fragile ecosystem of the Sundarbans.

Key words: Oil spill, Sundarbans, Mangrove Ecosystems, Impact

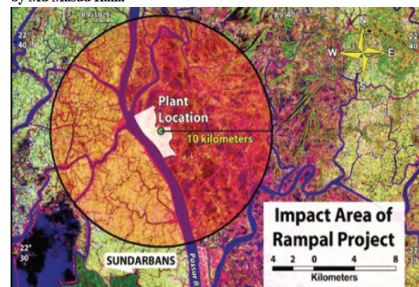
Introduction

The Sundarbans - the largest single tract mangrove forest is located in the South-West area of Bangladesh. Officially it is known as the 'Sundarbans Reserve Forest (SRF) and divided in West and East zones', whole forest covered an area of 3956 km² mangrove forest lands and more than 1800 km² water bodies (Hussain and Acharya 1994, and IUCN 2001). It is intersected by a network of tidal canals, creeks and rivers. This tidal forest is very rich with natural ecological resources especially floral and faunal diversity (IUCN 2001 and Chowdhury 2003). More than 500 thousand peoples are directly and indirectly depending on the Sundarbans for their livelihoods as well as socio-economic purposes (Biswas *et al.* 2007, Giri *et al.* 2007 and Uddin *et al.* 2013).

Considering the ecosystem functions and services of the SRF in both regional and global extent, it was declared as 'Ramsar site' in 1992 and 'World Heritage Site' in 1997 (FAO 2007). In 1999, the Department of Environment (DoE) of Bangladesh declared the SRF as 'Ecological Critical Area (ECA)' (DoE 2010) including 10 km buffer zone surrounding of the

An EIA issue of Rampal power plant

August 27, 2016 12:06 am
by Md Masud Rana



— maisonsjournalistes.org

THE proposed Rampal power plant is now a hot topic among the Bangladeshis. Many of us fear that the plant might seriously damage the ecosystem of the Sundarbans, spanning 140,000 hectares, one of the largest mangrove forests in the world and a UNESCO world heritage site. With the forest boundary being about 15–18km south from the proposed plant, the question now arises whether the coal-based power plant will negatively affect the ecosystem of the Sundarbans. The concern is that the wind in Bangladesh blows from the north and north-west direction in November–March during which the country suffers from a high level of air pollution. The environmental impact assessment done in this regard ensures that the plant will be fitted with adequate emission controlling devices, and consequently the forest will not be affected.

¹ Corresponding Author: aharunc_ku@yahoo.com

Page no. 1