

# An alternative to the alternative

## Relocate the coal-fired electricity power plant 30 km east of the Sundarbans

DR. ABDUL AZIZ

A civil society and environmental activists rally against the threat of a fume-belching behemoth a mere 14 kilometres from the Sundarbans, the other two factors holding the Sundarbans in a death vice are being largely ignored in the mainstream discourse against the defiling of a UN World Heritage Site. The Prime Minister's Economic Advisor on September 17 requested scientific basis of the criticism against the coal-fired power plant at Rampal.

About 7000 years ago, sediment-laden freshwater carried from the foothills of the Himalayas by the Ganges River and eventually, the Bhagirathi river and then the Gorai, provided a unique natural balance that allowed a rare species of trees to grow in the Ganges delta - the Sundri. Preferring a balance of freshwater to very low-salinity water - about less than one part per thousand - it became a dominant species of plants and thrived, leading to the formation of the wonderfully diverse, breathtakingly beautiful natural mangrove forest that we call Sundarban.

Since April 1975, India started diverting freshwater from the Ganges away from the Padma, utilising the Farakka Barrage - unlinking the Gorai from the Padma and thereby reducing the sediment-laden freshwater discharge that is so vital for the survival of the Sundarbans. Cut off from the Padma, the Sundarbans faced increasingly intrusive marine water that raised the levels of salinity in the water and land area of the forests (Aziz and Paul 2015, *Diversity* 7: 242-269), salinity levels well beyond what the Sundri species can tolerate. After about 10 years of Farakka Barrage operation, Chaffey et al. (1985) concluded that much of the Sundarbans no longer provides an environment to which Sundri is ecologically well suited. After nearly 20 years of the operation of Farakka, about 60 percent of the Sundarbans on the Bangladeshi side was converted into a highly saline environment (Karim, 1994, *Mangroves of Sundarbans, IUCN*) contrary to the 50 percent freshwater characteristic of the northern and moderate salinity in the southern regions in the 1930s (Curtis 1933). As a result, low quality mangroves like the Goran, Gewa, Kewra, etc. invaded the forest at the expense of the pure strand of Sundri (Siddiqi 1994, *Natural regeneration*. Total growing stocks of 296 per hectare (of which 211 were Sundri trees) in late 1950s (FORESTAL 1960) were reduced to 14 (of which 106 were Sundri trees) in an inventory made by the Department of Forests in 1996.

Salt in the water, salt in the soil - already,

the Sundarbans is declining due to rising salinity.

Eventually, with the completion of the Rampal power plant at the currently proposed site, there will be carbon soot in the air released from the plant, blown over to ecologically sensitive Sundarbans plant communities, forming a black, sticky coating on leaves and flowers during dry winter seasons. This will occur despite the usage of USCT filtration technology that will be used at Rampal, which has an efficiency of 40-45 percent, according to experts. The

Bangladesh could earn a minimum (\$5.00 per ton) of US \$279 million per year, the carbon deposit would be equivalent to 205 million tonne carbon dioxide sequestration. This value is four times the annual carbon dioxide emission rate of Bangladesh from fossil fuel consumption (*Bangladesh Forest Department 2010, Integrated Resources Management plans for Sundarbans*). The Sundarbans acts as a natural wall, saving property as well as millions of lives from natural disasters, the value of which is between USD 273 and 714 million (Hussain

University proposed shifting the location of the coal fired power plant 24 kilometres north of the Sundarbans. However, the proposition of relocation presents a few problems.

Freshwater is the lifeline of the Sundarbans and is also vital for the proposed coal power plant. For the last 40 years or so, there has been decreased sediment-laden freshwater flow in the Ganges flood plain, especially through the Gorai River. The Sundarbans is fed with freshwater from Ganges through Gorai. Discharge measured at Gorai railway bridge,

locations will be suitable for establishing the coal-fired plant. The tidal pattern north of the Sundarbans will help in building up heat in the river - where 5000 cubic metres of hot water will be released every hour by the power-plant, and during nyp tide, hot water will not move fast enough. By the time high tide starts, the moderately hot water will stagnate - a continuous release of hot water will create thermal pollution, surely killing aquatic biota. Again, at the start of low tide, the thermal polluted water will be quickly carried towards the Sundarbans, jeopardising water and soil environment. The hot water will affect nitrogen fixers, decomposers and more, thus affecting fertility of water and soil, seed germination as well as seedling growth. Phytoplankton death will block the food chain, affecting fish production, death of fish fry, eventually affecting fishers operating in the region. A 15 to 20 kilometre impact zone exists to the north and east of the Sundarban mangrove forest, and human settlements 3.5 million strong, who are partly dependent on the forests, will certainly be affected if the plant is moved to the north.

Considering the scarcity of freshwater discharge during dry periods from upstream into the Passur - thereby leading to stagnation of hot water causing thermal pollution, carrying carbon soot towards south during winter/dry seasons on to the Sundarbans - and the possibility of oil slick from the coal carrying vessels, the coal-fired power plant may be established on the east bank of the Burishwar River. The suggested site is Arpangasia, opposite to Burir Char, Barguna - about 30 km east of the Sundarbans and south east of the currently proposed Rampal site. The Sundarbans will be 30 kms away from north and south wind direction or vice versa, so effects of soot on Sundarbans' plant communities and the other impacts being debated at present will be eliminated, along with reduced thermal pollution in the River Burishwar (since it is much wider than the Rampal area of Passur River, close to the coast and freshwater discharge from Maghna will eliminate the threat of thermal pollution by ensuring no stagnation at any point). The location will also ensure a very low carrying cost of 13,000 metric tonnes of coal every day, so it is also economically viable.

Considering the scientific basis provided in the above arguments for relocation of the site, the government should look into doing a feasibility study at the suggested location of the east bank of the Burishwar River, south-east of the Borguna Sadar, and ensure the survival of a vital asset to the nation and the global climate.

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**HOW WILL A POWER PLANT PRESENCE AT RAMPAL HARM THE SUNDARBANS?**  
66 species of vegetation at risk of exposure to carbon soot, reducing their carbon fixation and affecting plant growth/leaf fall. Reduced flora and fauna will make the Sundarbans less of a buffer against cyclones and tidal formations.

200 species of fish at risk of death due to thermal pollution in the water carrying away the hot water discharged by the plant. 42 species of mammals, 51 species of reptiles and 8 species of amphibians will be equally at risk from pollution.  
3.5 million people in the area will be affected directly.

black coating will reduce the plant's carbon fixation and flower formation, increase leaf fall affecting plant growth, and other biota. Fruits and seeds formation will be affected - Sundarbans degradation will be accelerated manifold.

To get affordable power we can't afford to damage the Sundarbans, which provides ecosystem services in various ways. First and foremost is the carbon sequestration provided by the forest reducing the effects of global warming. The total carbon stock of the forest during 2009-10 was estimated to be 55.8 million metric tonnes. If carbon traded

2014, *Bangladesh Sundarban Delta Vision 2050, IUCN* ). Aziz and Paul (2015) noted that recently, many of the cyclones that were supposed to strike Sundarbans changed their routes towards Chittagong, a phenomenon that is most likely due to buffering of the atmosphere around the Sundarbans saving lives and property.

Considering the present need for power in a developing nation and the stance of the government regarding the issue, alternative locations have been suggested. In an interview published in *The Daily Star* on September 1, Prof. Dr. Badrul Imam of Dhaka

over 160 km away from Sundarbans, revealed that minimum monthly availability varies from 0.00 to 170 cubic metres during dry period. Whatever the amount the area gets, more than 50 percent is discharged into the Madhumati River and the rest into the Passur.

There is little data to suggest how much it is exactly, but enough is known to note that in almost every April or May in the last 40 years, there has been no freshwater supply to the Sundarbans at least for some days or weeks. So with no freshwater pressure from upstream in Lobon Chara or in the Rampal part of the Passur River, neither of these

# In the name of sanity

SHAMSAD MORTUZA

DHAKA takes pride in its rickshaws. The word 'rickshaw' originates from the Japanese word jinrikisha (jin = human, riki = power or force, sha = vehicle); that makes a rickshaw a vehicle, which literally uses 'man-power' to carry passengers. The tourism brand promoters have dubbed Dhaka as the rickshaw capital of the world. The city had its first rickshaw in 1919. The early prototypes, which came from Myanmar, looked like the hand pulled passenger-carts that go under the name of rickshaws still in some places of Kolkata. Dhaka's rickshaws are different from the ice-cream van like Chinese ones.

Over the years, Dhaka's rickshaws have earned their unique touch by adorning themselves with the vibrant colours of life that characterise the booming city. With their lacy hoods, loud colour schemes, perforated tin plates, cheap plastic décor, thumb-pressed calling bells, and above all, paintings on their seat covers - rickshaws displayed postmodernist kitsch long before such ideas gained

currency in the West. Rickshaw art, in particular, featured Prisma motif even before some androids made it current. The subject matter of rickshaw art ranges from moral prescription to fleshy disposition; from scenic beauty to geometric ingenuity; from folksy fantasy to mundane mandate.

A rickshaw ride is a must for emissaries coming to Bangladesh, tourists visiting the country, or flag bearers of participating nations in international sports events. Rickshaw art is highlighted as an imaginative feat of our traditional artisans. All this changed after the Gulshan attack on July 1. Our city fathers have deemed it right to take it on the rickshaws. Their decision to dress up rickshaws with yellow hoods is a sign of sickness that has affected the city. Rickshaws now look like weaver-birds in flight through a designated zone of the concrete jungle. And the passengers are relegated to twigs and straw en route their destinations.

People who have to use public transport system have got the short end of the stick. Five

hundred rickshaws have been enlisted by Dhaka City Corporation (North) to ply in the posh neighborhood. A densely populated housing society such as Niketan, adjacent to Gulshan 1, received a share of only 50 rickshaws for its 20,000 inhabitants. But isn't Niketan a private housing society outside the purview of DCC? What does City Corporation have to do with this place anyway? Is it afraid that terrorists from Amtoli, Mohakhali, or Kuril will use the Niketan corridor to invade Gulshan riding in rickshaws? Given the overseas money-chain, do terrorists really ride in rickshaws or bikes (the soft targets for the police)? Wasn't it a Prado that was seen dumping weapons in a ditch in Uttara a few months back?

Since July 1, DCC has taken steps against local buses too. Within six weeks of the Holey Artisan Bakery incident, the route permits of public bus in the city's affluent areas were suspended in favour of just ten air conditioned minibuses with tumbled fare. Once again the focus has been to

serve the rich. In a city of 160 million, one wonders, how many people does DCC want to serve?

If DCC can operate in the Niketan appendix of Gulshan, why cannot it pick someone of its own size? For example a road was constructed during the caretaker government to bypass Old DOHS and to connect Air Port Road with Gulshan 2. That road has now become the sole property of Old DOHS authority. Why cannot DCC open the civil aviation road to the public to reduce traffic jam near PM office? Why can't Dhakaites use a dead airport where the annual parade is held? If helicopters can land on a roof top, don't make it an excuse to stop public access to a place which is being baptised as a museum and what not! DCC must have a policy against establishments, housing societies, which are creating enclaves in Dhaka city treating others as stranded enclave dwellers (*chhitmoholbashi*).

Let's return from the road to the mode of transport: Dhaka aims at becoming a megacity, and it cannot do so by allowing push carts, rickshaws

on the streets. Rickshaws must be phased out with a carefully crafted policy of transport diversification and rehabilitation of the people involved. For instance, free driving lessons can be given to rickshaw pullers and soft loans with no security can be given to rickshaw owners so that they can buy CNG, taxis or buses.

DCC must guarantee decent public transport now, and not carrot-swing the metro-rail card. The buses are 'rotten' in lack of a better word, unruly, and responsible for 25 percent of traffic jams in Dhaka city. They use left turning lanes as their bus stops, and stop wherever they want to pick up or drop off passengers. This practice must be stopped.

DCC must make Dhaka pedestrian friendly to reduce the dependency on rickshaws. Elevated pedestrian walkways or a footbridge networks can be erected above the existing sidewalks. In this way, an extra lane can be added to our infrastructure for public transport or at least for a bike lane. This has been successfully done in cities such as Manila and Hong Kong.

Heavy taxes for a second car for a family should be imposed to control the number of private cars. CNG cylinders are ticking bombs—they should be discouraged to control the number of private car users. There is no alternative to simultaneous incentives for the public transport infrastructure and penalties for using private transport if Dhaka has to survive.

And for sanity's sake, give the traffic signals a chance. Often manual traffic control is used by police because the traffic lights don't work and for 'other reasons'. I am sure there are transport engineers, who can measure the flow of city traffic and time the signal lights to perfection.

Dhaka is for everyone. It is not only for rickshaw passengers but also for car and bike owners. It is not only for bus passengers but also for city walkers. Do not adopt a policy that places one class atop the other. Enough has been said. Do something and save Dhaka.

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**QUOTABLE Quote**

**NELSON MANDELA**

*Education is the most powerful weapon which you can use to change the world.*

**CROSSWORD BY THOMAS JOSEPH**

ACROSS

- Rich Cake
- "-- Mia!"
- Bitter humor
- Rap sheet name
- It's led by an expert musician
- Summer in Paris
- Lawyer's charge
- "The Simpsons" bartender
- Saves
- Road-house
- Advanced in years
- Fishing need
- Signs a lease
- Matches up, as digital devices
- Historic times
- Canine command
- Gangster's gun
- Predicted
- Dry-- bone
- One, for Juan
- Much of N Amer.
- Powerful group
- Saloon order
- Desire
- Tries to find

DOWN

- Past plump
- Oven feature
- Make speeches
- Romantic dozen
- It's a blast
- Real lookers
- Spiked weapons
- Maximum amount
- Marlins fan, perhaps
- Like some lodges
- Gives approval
- Bassoon part
- 19 Barracks beds
- Memory unit
- Looks at
- Sign of correction
- Merchant of music
- Hot wind from Africa
- Ditty
- Blue states
- Debonair
- Chart pullers
- Squander
- Printer's supply
- High tennis hit

**YESTERDAY'S ANSWER**

S	C	A	L	E	P	R	A	M
T	E	N	O	N	L	O	B	E
A	D	O	P	T	A	B	I	D
F	A	D	I	A	N	L	I	E
F	R	E	N	C	H	B	R	E
Y	E	A	A	N	T	E		
W	A	I	L	S	S	T	E	E
A	U	T	O	S	T			
F	R	E	N	C	H	B	R	A
T	O	R	H	E	M	B	O	W
E	R	A	S	E	I	N	A	W
D	A	T	E	S	T	O	T	A
S	E	A	T	S	T	E	N	T

**BEETLE BAILEY** by Mort Walker

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