

# CONSERVING BIODIVERSITY

## Duty of state and people

*Poverty and biodiversity are intimately linked. The poor, especially in rural areas, depend on biodiversity for food, fuel, shelter, medicines and livelihoods. Biodiversity provides the critical 'ecosystem services' on which development depends.*

SAADI ISLAM

THE 1992 United Nations Earth Summit in Rio de Janeiro defined Biodiversity as "the variability among living organisms from all sources, including, 'inter alia', terrestrial, marine, and other aquatic ecosystems, and the ecological complexes of which they are part: this includes diversity within species, between species and of ecosystems."

Biodiversity did not develop overnight. The great diversity of plants, animals, fungi, and microorganisms reflects an evolutionary history that spans 3.5 billion years. Over that time, many species died out and new species replaced them, shaping the composition and structure of today's biodiversity. Every species, moulded over time by genetic forces, other species, and the surrounding environment, occupies a specific habitat with a definite range of distribution and plays specific ecological roles in the ecosystem. Together they weave an

intricate web of life, in which every species matters.

Biodiversity is often understood in terms of the variety of plants and animals, but in fact, it includes three types of diversity as follows.

**Species diversity:** Species diversity means the wide variety of animals, plants and microorganisms in specific area. This diversity also covers in two aspects: species richness and species evenness.

**Genetic diversity:** Biodiversity includes genetic differences within each species, which has caused great benefits to livelihood of people, especially agriculture and production.

**Ecosystem diversity:** Ecosystem diversity is divided into 3 aspects; habitation, substitution, and topography. In each ecosystem, living creatures form community, interact with one another and with the air, water and soil around them.

**Biodiversity in Bangladesh**  
The most part of the country's land is formed with river alluvium from the Ganges and the

Brahmaputra and their tributaries, which consists mostly of flood plains (80%) with some hilly areas (12%) in a sub-tropical monsoon climate. Geographically, Bangladesh falls near the Indo-Burma region which is one of the ten global hot-spot areas and supposed to have 7000 endemic plant species. Due to its unique geo-physical location Bangladesh is exceptionally characterised by a rich biological diversity. An estimated 5,700 species of angiosperms alone, including 68 woody legumes, 130 fiber yielding plants, 500 medicinal plants, 29 orchids, three species of gymnosperms and 1700 pteridophytes, have been recorded in Bangladesh. Some 2260 species of plants have been reported alone from the hilly regions of Chittagong, which falls between two major floristic regions of Asia. Subsequently, the country possesses rich faunal diversity. Bangladesh has approximately 113 species of mammals and more than 628 species of birds (both passerine and non passerine).

**Biodiversity and human life**  
Humans share the planet with millions of different species of plants, animals, fungi, and microorganisms, and this biodiversity provides us with the basic necessities of life. The activities of all organisms together maintain the atmosphere, develop new soils, break down waste, store and filter water, pollinate our crops, provide us with food and protect us from disease.

Without these ecological services, we cannot have abundant food, natural fibers for our clothes, lumber for our homes and a clean environment and good health. According to UNDP: "Poverty and biodiversity are intimately linked. The poor, especially in rural areas, depend on biodiversity for food, fuel, shelter, medicines and livelihoods. Biodiversity also provides the critical 'ecosystem services' on which development depends, including air and water purification, soil conservation, disease control, and reduced vulnerability to natural disasters such as floods, droughts and landslides. Biodiversity loss exacerbates poverty, and likewise, poverty is a major threat to biodiversity."

**Loss of biodiversity**  
According to IUCN, an unacceptable number of species are still being lost forever. The current loss of biodiversity is faster than ever before in human history and there is no sign of this process slowing down. Today at least 1,000 species are lost every year. Studies show that 30% of all natural species will be extinct by 2050. Although Bangladesh is rich in biodiversity (species) but in 2004 12 species of wildlife were identified as extinct. In 1992 and 2001 18 species of wildlife were found as extinct from the country. A lot of country's mammals, birds, reptiles are now under tremendous pressure for several reasons. In 2000 IUCN had listed a total of 40 species of inland mammals, 41 species of birds, 58 species of reptiles and eight species of amphibians under various degrees of risks in the country. It has been assumed that already 10% flora of the country is extinct. According to a recent exercise completed by the Bangladesh National Herbarium, 106 vascular plant species face risks of various degrees of extinction in Bangladesh. Again, in 2006 167 plant species were listed as vulnerable or endangered.

IUCN warns that a third of amphibians, a quarter of mammals and one-in-eight birds are threatened with extinction. Out of the 47,677 species in the IUCN Red List of Threatened Species, 17,291 were deemed to be at serious risk. The latest update lists amphibians as the most seriously affected group of organisms on the planet, with 1,895 of the 6,285 known species listed as threatened. Of these, it lists 39 species as either "extinct" or "extinct in the wild". A further 484 are deemed "critically endangered", 754 "endangered" and 657 "vulnerable".

**Causes of biodiversity loss:** The primary causes of biodiversity loss are demographic, economic, institutional, socio-political, technological, cultural and religious factors. And the root causes of losing biodiversity are climate change, invasive alien species, over exploitation, habitat change, nutrient loading etc.

**Conservation initiatives**  
Bangladesh has signed the five major conventions and agreements



Rangamati

related to biodiversity conservation (i.e., CBD, CITES, CMS, RAMSAR, WHC). As a signatory party to these conventions the government has undertaken various initiatives to conserve biodiversity at both ecosystem and species levels. Again as a CBD-COP the country is bound to adopt the ecosystem approach to conserve biodiversity. Bangladesh, in 2004, has developed National Biodiversity Strategy and Action Plans (NBSAP). It has nineteen nationally designated protected areas comprising approximately 2,458 km<sup>2</sup>, which is 1.66 percent of land area of the country. These include ten national parks, eight wildlife sanctuaries and one game reserve.

Bangladesh has so far declared nine areas significant in biodiversity and environment conservation, as ecologically critical areas (ECAs). Government has already undertaken project initiatives towards conserving some of these important areas. Government is going to submit the Fourth National Report to the Convention on Biological Diversity. Bangladesh has finalised the Fourth National Report on implementation of the Convention on Biological Diversity, which came up with Biodiversity Programme of Action (BPA) 2020.

**Our duty to conserve biodiversity**

A wide variety of measures can be used to conserve our biodiversity, including both in-situ and ex-situ methods. In-situ conservation is on-site conservation or the conserva-

tion of genetic resources in natural populations of plant or animal species, such as forest genetic resources in natural populations of tree species. Ex-situ is the process of protecting an endangered species of plant or animal outside its natural habitat; for example, by removing part of the population from a threatened habitat and placing it in a new location, which may be a wild area or within the care of humans.

Immediate action is needed to conserve biodiversity. In the movement to conserve biodiversity and save the planet, individuals and the community can play an increasingly proactive role. Such as-- conserve existing biodiversity, defend threatened species, increase bio-capacity, reduce sources of harm, develop ecologically resilient landscapes, support national and international conservation initiatives, go for sustainable use of ecosystem services, increase public awareness, plant more trees, reduce consumption, adopt greener technologies, increase use of renewable energy, conduct more research, participate in conference, seminar, training, and exhibition for conserving biodiversity.

To survive, we need to conserve all species on earth; we need action from individuals and governments. It's time to join forces and act. Otherwise, it might be too late.

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The Sunderbans

# GLOBAL WARMING: USA

## Limiting carbon dioxide pollution by power plants

*Reducing emissions by at least one-quarter over the next seven years would cost \$4 billion in compliance expenses in 2020. But the reduced hospitalisations and fewer days of work lost to illness, and other health and environmental benefits would save \$25 billion to \$60 billion*

DANIEL F. BECKER AND  
JAMES GERSTENZANG

ELECTRIC power plants spew about 40 percent of the carbon dioxide pollution in the United States, but, amazingly, there are no federal limits on utility emissions of this potent greenhouse gas. The Obama administration plans to remedy this situation by drafting rules that would curtail these discharges from existing plants. The president should make sure they are tough. Nothing he can do will cut greenhouse gases more.

By accomplishing this under the executive authority Congress granted him in the Clean Air Act, the president will be stepping in where recent Congresses have refused to go. He did the same thing last August, when he toughened auto emissions standards that will result in a new car fleet that averages 54.5 miles per gallon by 2025, and again last spring, when he proposed rules, restricting carbon dioxide emissions, that will effectively prevent the building of new coal-burning power plants.

Now President Obama should require existing power plants to

reduce their emissions by at least one-quarter by 2020. These plants emitted 2.2 billion tons of carbon dioxide in 2011, according to the Environmental Protection Agency, so a 25 percent cut would result in a reduction of more than 500 million tons. This would reduce lung-related illness and premature deaths, slow the accumulation of climate-changing gases in the atmosphere and demonstrate to the rest of the world that the United States was serious about taking on global warming.

To achieve these reductions, the rules should favour making homes, buildings and power plants more energy efficient over the more costly conversion of coal-fired plants to natural gas. (Gas-fired power plants emit half as much carbon dioxide as coal-fired plants. But expanding energy efficiency will reduce electricity demand and eliminate the need for the coal plants. Closing them is better than converting them to gas.) The American Council for an Energy-Efficient Economy says the technology exists now to cut electricity use by one-quarter by 2020 through efficiency alone.

Based on the average electricity production of the nation's large coal-fired power plants, this would allow for the closing of close to 60 such plants across the nation.

Certainly, the coal and utility industries won't take this lying down. Some coal mines may be closed, and the electric industry will be reconfigured. A study by the Natural Resources Defense Council estimated recently that reducing emissions by at least one-quarter over the next seven years would cost \$4 billion in compliance expenses in 2020. But the reduced hospitalizations and fewer days of work lost to illness, and other health and environmental benefits would save \$25 billion to \$60 billion, the study said. The approach would also stimulate investments of more than \$90 billion in energy efficiency and renewable energy technologies, according to the analysis for the N.R.D.C. by the consulting firm ICF International.

The progression to using less coal will create new jobs to build the highly efficient appliances, wind turbines, solar farms and other technologies that capture renewable energy. In addition, jobs will be created as some states and utilities choose to comply by building natural gas power plants, which should be done only if they won't cause environmental havoc.

The auto industry is beginning to show how strong emissions standards and the technological advances they stimulate can benefit employment. When the new rules were announced last summer, Bob King, president of the United Auto

Workers, predicted that they would require "more engineers and more factory workers, expanding employment in the industry." And Ford, which had already doubled its team working on fuel-saving engineering, said it planned to redouble the unit in 2015. Indeed, last week, Ford announced that it was adding 450 jobs at its Brook Park, Ohio, plant to produce its EcoBoost engine.

Not everyone will benefit immediately, of course. As demand for coal drops, some miners will lose their jobs. The nation owes them economic support, job training and sustainable jobs. There is a precedent for this: the government estab-

lished a fund to help workers at nuclear weapons plants move to new jobs as the cold war ended.

But even as we reduce power plant pollution, we will need to do more to protect the atmosphere. We should also reduce emissions of such short-lived contributors to global warming as methane by tightening up leaky natural gas systems, and hydrofluorocarbons, which are used in air-conditioning.

Ultimately, we must meet our energy needs largely without coal, oil or gas. We must use energy more efficiently to lower demand to the point that ramped-up clean, renewable energy supplies most of what

we require.

By ordering the new auto emissions standards, Obama took an enormous step in the fight against global warming. In a similarly bold move, he can reduce our reliance on coal, a dirty fuel that is the greatest contributor to the nation's greenhouse gas pollution. By setting stringent power plant standards, he will slow global warming at a fraction of the cost of ignoring it.

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A coal fired power plant