

## **3rd International Conference on Bangladesh Environment**

(ICBEN 2010)

January 3-4, 2010

## **Dhaka Declaration on Bangladesh Environment, 2010**

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### ***Preamble***

The participants of the Third International Conference on Bangladesh Environment (ICBEN), held on January 3-4, 2010 in Dhaka, Bangladesh, and organized by *Bangladesh Poribesh Andolon (BAPA)* and *Bangladesh Environment Network (BEN)*, along with twenty two major universities of the country as co-organizers and sixty other pro-environment organizations as associate organizers

Having considered the discussions held at its various Expert and General Sessions and the recommendations reached therein;

Noting the progress that was achieved in protecting Bangladesh environment since the adoption of the Dhaka Declaration on Bangladesh Environment adopted at the *Second International Conference on Bangladesh Environment (ICBEN)* held in Dhaka on December 19-21, 2002;

Being aware that, despite the progress in certain specific areas, environment of Bangladesh in general continues to worsen, endangering the country's future economic growth and development. so that protection of environment has become a huge challenge;

Taking note of the fact that the issue of climate change is now overshadowing all other issues, particularly for Bangladesh, which is going to be one of the worst victims of climate change;

Encouraged by the large scale participation in ICBEN 2010 by environmental activists from all across Bangladesh and by representatives of all walks of life of the country, including the Parliament, political parties, professional and academic organizations, mass organizations, cultural bodies, and children's organizations;

Encouraged further by large scale participation in such pre-conference events as the children's art competition and the bicycle rally promoting environment-friendly transportation in the country;

Noting the pro-environment and climate change-related initiatives and declared goals of the government, its expressed willingness to work together with the civic society environment movement, in particular BAPA and BEN;

Encouraged by the participation in ICBEN 2010 of the honorable Prime Minister Sheikh Hasina, and the pro-environment commitments made by her in her address at the Opening Session of the conference;

Also encouraged by the participation of the environment minister, Dr. Hasan Mahmud, and the pro-environment measures that he outlined in his speech;

Encouraged by the participation in IC BEN 2010 of the opposition political parties, in particular, the Opposition Leader, Begum Khaleda Zia, and the pro-environment commitments expressed in her speech at the Concluding Session;

Noting that protection of the country from the environmental and climate change challenge has now become the most important challenge for Bangladesh;

Adopt the following Declaration on Bangladesh Environment, 2010, as a document compiling the informational and analytical points and the recommendations of the conference and as a guiding document for action by both the government and the civil society in protecting Bangladesh from the environmental and climate change challenge:

## **A. Issues and actions at the International level**

### **1. Climate Change**

*Noting that Bangladesh's contribution to greenhouse gas emissions is insignificant, and yet it will be one of the most severely affected countries by climate change;*

*Noting that the developed countries who are mainly responsible for causing climate change have not done enough so far towards mitigation and helping developing countries with regard to adaptation;*

*Being aware that the 15<sup>th</sup> Conference of Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) held in Copenhagen in December 2009 failed to reach binding commitments with regard to Green House Gas (GHG) emissions reduction and has postponed reaching such commitments to the 16<sup>th</sup> COP to be held in Mexico in December 2010;*

*Recognizing however that the 15<sup>th</sup> Conference of Parties (COP) agreed on 2 degree centigrade as the upper limit for rise in the global temperature;*

*Noting that the 15<sup>th</sup> COP has also accepted the eventual desired goal of not allowing the global temperature to increase by more than 1.5 degree centigrade;*

*Being aware that the 15<sup>th</sup> COP has agreed to create a fund of 20 billion dollar over the period 2010-2012 to assist developing countries affected by climate change and to increase this fund to 100 billion dollar by 2020;*

*Noting that the Clean Development Mechanism of the Kyoto protocol provides an opportunity for Bangladesh;*

*Observing that international agreements may create global carbon market offering further opportunities for Bangladesh;*

*Noting that survival against climate change is a basic human right for the people of Bangladesh;*

*Being aware that climate change will make poverty reduction more difficult, making it harder for Bangladesh to achieve the UN Millennium Development Goal regarding poverty reduction;*

It is recommended that

1. Bangladesh assumes the leadership role in the group of the Most Vulnerable Countries (MVC) and also among the Least Developed Countries (LDCs) within the Group of 77 with regard to the climate change issue in the international arena;
2. Bangladesh plays an active role in the UNFCCC process and projects effectively the viewpoint of the MVC and LDCs and her own specific views regarding both mitigation and adaptation;
3. Bangladesh demands and secures her legitimate share of the adaptation fund, created by the international community;
4. Bangladesh raises the issue of *climate refugees* and asks the international community to prepare for planned resettlement of climate refugees in safer parts of the world in a planned manner;
5. Bangladesh receives the technologies (with accompanying finance) necessary for her to adapt to climate change, in particular to harness her abundant solar energy for meeting her rising energy needs;
6. Bangladesh makes effective use of the Clean Development Mechanism of the Kyoto Protocol and of the global carbon market that future international agreements may create for her;
7. Bangladesh demands setting up of an international research center on adaptation in Dhaka under the auspices of UNEP and UNFCCC.

## **B. Other international issues**

*Noting that many other environmental issues, such as ozone depletion, acid rain and protection of species, ocean pollution, are also of global nature;*

*Observing that progress with regard to these issues require international cooperation;*

It is recommended that

1. Bangladesh plays its due role in the international forums in solving such global problems as that of acid rain, ozone depletion, ocean pollution, etc;
2. Bangladesh lends its cooperation in the international effort to protect biological species, and takes active measures to protect the species of various land and aqua bio forms that are unique and available only in Bangladesh.

## **II. ACTIONS AT THE REGIONAL LEVEL.**

### **A. Climate change**

*Noting that many consequences of climate change, such as melting of the Himalayan glaciers, submergence of the low lying coastal lands, change in the monsoon cycle, aggravation of floods and draughts, destabilization of rivers, etc. are of regional scope, so that regional response is necessary in order to confront them;*

*Observing that prevention of Himalayan glaciers from melting is crucial for prevention of destabilization of rivers of the subcontinent;*

*Being aware that among the countries of the region, Bangladesh is the most vulnerable to the climate change threat and hence require special help and cooperation from others in coping with this threat;*

*Noting that submergence may create a huge problem of “climate refugees” and Bangladesh has very limited space for their resettlement, so that regional cooperation will be necessary to deal with this problem;*

*Observing that pooling of resources can be helpful for all countries of the region in dealing with the common threats posed by climate change;*

*Being aware that countries of the region can benefit much from dissemination of information and joint research on climate change;*

It is recommended that

1. Bangladesh advocates regional cooperation in confronting the dangers posed by climate change, noting that such cooperation is necessary both in order to raise unified voice in international forums and in order to take practical adaptation and mitigation steps in the region itself;
2. Bangladesh suggests taking up joint projects for coping with common threats posed by climate change;
2. Bangladesh advocates more dissemination of information and coordination of research on climate change among the countries of the region;
3. Bangladesh draws attention of the countries of the region to the special help and cooperation she will need as the frontline country facing the impact of climate change;
4. Bangladesh draws attention that regional cooperation will be necessary in particular for resettlement of the people who will be rendered climate refugees as a result of possible submergence;
5. Bangladesh suggests setting up in Dhaka of a regional center for research on adaptation and mitigation;

## **B. Transboundary rivers**

*Noting that while rivers face the risk of destabilization by climate change, they can also play a very important role in protecting the region from the impact of climate change;*

*Observing that melting of Himalayan glaciers may render the rivers dry in winter while excessive flooding in summer may aggravate floods;*

*Noting that rise in elevation and accretion of land through sedimentation caused by river flow is the most important protection that low lying coastal lands of the subcontinent have against the threat of submergence due to rising sea level;*

*Noting that the “Cordon Approach” to rivers currently followed by countries of the region facilitates the destabilization of rivers caused by climate change and weakens the protection against submergence by hindering the process of sedimentation;*

*Observing that the “Cordon Approach” to rivers leads to diversionary and other large scale river intervention projects and thus creates tensions among co-riparian countries;*

*Noting that, by contrast, the “Open Approach” to rivers helps to protect rivers against destabilization by mitigating flooding in summer and preserving water for winter;*

*Noting further that, by leaving the sedimentation process unhindered, the Open Approach helps to benefit from this process as a protection against submergence;*

*Observing that a switch from the “Cordon Approach” to the “Open Approach” can dissuade countries from diversionary and other large scale river intervention projects and thus can convert the rivers into bonds of friendship rather than sources of rivalry and tension;*

*Being aware that being the lower riparian country, and with the catchment basins of major rivers of Bangladesh lying mostly in her neighboring countries, Bangladesh needs cooperation of upper riparian countries in keeping the rivers stable and preserving their water and sedimentation flows;*

*Noting that diversionary structures built by India have diminished significantly the flow of Bangladesh rivers, leading to several ecological and environmental consequences;*

*Affirming that a basin-wide approach is necessary to harness and benefit from the water resources of the Ganges-Brahmaputra-Meghna region comprising Bangladesh, Bhutan, China, India, and Nepal;*

*Noting that cross-boundary river pollution problem has become serious, with pollution caused by upper riparian countries flowing into lower riparian countries;*

*Observing that in addition to organic waste, inorganic waste, including mining waste, often including toxic and radio-active elements, has become a major source of cross-boundary river pollution, particularly in the north-eastern part of Bangladesh, where mining in Meghalaya is causing river flows into greater Sylhet district to be dangerously polluted and similarly pollution in Tripura is causing river flows in greater Comilla to be dangerously polluted;*

*Noting that regional cooperation is necessary to deal with such cross-boundary river pollution;*

*Being aware that in addition to cooperation at the government level, cooperation at the level of people and civil society is necessary for proper resolution of river related conflicts;*

It is recommended that

1. Bangladesh advocates the adoption of the *Open Approach* to rivers and abandonment of the current *Cordon Approach* by all countries of the region;
2. Bangladesh advocates the basin-wide approach in management and use of the regional rivers;
3. Bangladesh opposes resolutely all diversionary river intervention projects undertaken by any of the upper riparian countries;

4. Bangladesh advocates decommissioning of all diversionary river intervention projects that have been already implemented, including the *Farakka* barrage on the *Ganges* and the *Gozaldoba* barrage on the *Teesta*;

5. Bangladesh maintains that cross-season river flow stabilization projects, such as the proposed *Tipaimukh* dam, cannot be undertaken on an unilateral basis and that all such projects have to be agreed jointly and put under joint jurisdiction, and furthermore there has to be guarantee that such projects will not be used for diversion purposes in future;

6. Bangladesh raises the river pollution issue in various bilateral and regional forums and ensures that her river flows are unaffected by pollution by upper riparian countries.

12. River activists of Bangladesh take steps to establish more civil society contacts among river activists of different countries of the region and try to develop a united regional civil society movement in support of the *Open Approach* to rivers and against the current *Cordon Approach*.

### **C. Other regional issues**

*Noting that regional cooperation is necessary to solve many other environmental issues, including those of acid rain and protection of bio-diversity;*

*Noting that both Bangladesh and India (West Bengal) share the unique mangrove forest of the Sundarbans;*

*Noting that Bangladesh and India also shares forests in the hilly parts in the east;*

*Observing that free passage across the political boundary is necessary for tigers, deers, and animals living in the Sundarbans;*

*Noting that free passage across the political boundary is also necessary for elephants, and other animals living in the forests of Chittagong Hill Tracts and forests of Sylhet too;*

It is recommended that

1. Bangladesh takes steps to ensure regional cooperation necessary for protection of forests and various animal species.

2. Bangladesh discusses with India the possibility of creation of contiguous forests areas not affected by political boundaries following the model established by countries of South Africa.

3. Bangladesh promotes contact among citizen level efforts in various countries of the region (in particular that of India and Bangladesh) towards conservation, protection of animal species, and bio-diversity, so that a regional civic movement develops to complement inter-governmental efforts to achieve these goals.

## **III. ACTION AT THE NATIONAL LEVEL**

### **Development strategy and environment**

*Recognizing that environmental issues are closely intertwined with general issues of overall socio-economic development of the country;*

*Observing that pollution is generally a by-product of the production system, and so it cannot be prevented without changing this system;*

*Noting that there is no empirical validity of the so-called Environmental Kuznets' Curve (EKC) suggesting that environment of a country would deteriorate first with economic growth and recover only later;*

*International experience shows that it is possible to industrialize while at the same time protect the environment;*

*Recognizing that rich people usually have heavier ecological footprint due to their higher levels of material consumption, while the poor have much lighter ecological footprint due to their lower level of material consumption;*

*Noting however that the more environment-friendly life style of the poor cannot be an argument for perpetuation of poverty;*

*Observing further that poverty often forces people to environmentally harmful activities, such as cutting down trees in order to have wood for fuel;*

*Recognizing the necessity of fast economic growth to raise the income level of the country and raise tens of millions of people out of poverty;*

*Noting that economic growth alone cannot ensure eradication of poverty, illiteracy, malnutrition, and other deprivation, and instead growth with equitable distribution is necessary to achieve the latter objectives;*

*Being aware that equitable distribution of income requires equitable distribution of endowment, and therefore steps are necessary to raise the physical, human, and social endowments of the poor;*

*Noting that emphasis needs to be given on development of human capital of the country through necessary investments in education, health, and culture;*

*Observing that apart from facilitating overall socio-cultural transformation, development of human capital can promote faster economic growth;*

*Noting that pollution is often the negative externality of private consumption, and one way of internalizing this externality is to switch from private to social or collective consumption;*

It is recommended that

1. Bangladesh pursues an equitable development strategy emphasizing human development, giving priority to the poor, villages, and the disadvantaged parts of the country and society.
2. Bangladesh emphasizes promotion of education, health, and training as a way to develop human capital of the country.
3. Bangladesh accepts protection of environment as an integral development goal, mainstreaming environmental concerns in all development projects and activities;

4. Bangladesh promotes an environment friendly consumption pattern and life style as the overall goal of development, and emphasizes the importance of quality and spiritual aspects of life instead of concentrating entirely on the quantitative and material aspects of life;
5. Bangladesh promotes the collectivist spirit and social consumption instead of the current emphasis on private and individual consumption and gratification.
6. Bangladesh relies less on foreign advice in formulating her development strategy and policy and instead use domestic expertise and tradition in dealing with her development problems.
7. Bangladesh resorts to collective mobilization of her huge labor force in rejuvenating her river system and to use optimally her labor, land, and water resources.

### **Population and environment**

*Noting that Bangladesh is already the most densely populated country of the world (other than the city states), so that further growth of her population is not warranted from the point of view of her economy and environment;*

*Recognizing that continued population growth is increasing the burden on the very limited physical and ecological resources of the country;*

*Observing that after making some progress in reducing population growth rate, there has been some slacking off in the effort in recent years;*

*Noting that the huge size of the base population implies that even a lower rate of growth now translates into larger increase in the population in absolute terms;*

*Observing that larger population is leading to loss of arable land and wetlands that are being filled up for construction of homesteads, thus aggravating flooding and other environmental problems;*

*Noting that larger population is also creating direct pressure on the country's forests, which are being cleared to make space for habitation and procure fuel wood;*

*Being aware that population issue is not a narrow biological issue, rather it is part of the overall socio-economic development issue, and hence need to be dealt as part of the task of overall socio-economic transformation of the country;*

*Noting that international experience and Bangladesh's own success in the past in lowering the population growth rate show that it is possible to achieve demographic transition even at a relatively lower level of income;*

*Realizing that a smaller population size will reduce Bangladesh's exposure to climate change and the risk it faces;*

It is recommended that

1. Bangladesh continues vigorously with her population planning efforts and does not suffer from any complacency from the recent modest decrease in population growth rate.



2. Bangladesh launches a vigorous awareness campaign using both government resources and the non-government organizations and civil society initiatives in order to strengthen the awareness in the general public about the necessity of lowering population growth;

3. Bangladesh makes an effort to bring about an overall socio-economic transformation through promotion of education, health, and other measures, and not waiting for very high per capita income level, so that the population objectives become easier to achieve.

## **Energy and environment**

*Being aware of the close relationship between energy and environment;*

*Noting that per capita energy consumption of Bangladesh is still very low, and a large part of the population still lack electricity;*

*Observing that a large section of the population still depend on bio-mass as their chief source of energy;*

*Noting that economic growth will require large increase in the electricity generation capacity of the country;*

*Observing that the gas reserves of the country are getting exhausted;*

*Being aware that Bangladesh has some coal deposits in the north-west part of the country;*

*Noting that Bangladesh has already gained some experience of underground coal mining through the Barapukuria coal mining project;*

*Being aware that after independence Bangladesh initiated a national capability-based energy strategy by buying back the gas fields from Shell company in 1972, and for many years national companies set up in the public sector under the umbrella organization, Petrobangla, proved quite successful in exploration and extraction of gas;*

*Noting that Bangladesh later deviated from the nationalist, self-reliant energy strategy and started depending on foreign oil companies for exploration and extraction, as a result of which Bangladesh now has to spend a huge amount of money each year to buy back its own gas from foreign companies;*

*Observing that ownership of gas fields by foreign companies create pressure for policies that are detrimental to the country's interest, as was the case in early 1990s when these companies mounted pressure to export away gas from the Bibiyana field;*

*Noting further that foreign companies often display inadequate concern toward environment, and do not want to pay up for the damages when their negligence leads to disasters, such as Magurchara and Tengratila blowouts and other incidents;*

*Being aware that foreign companies continue their efforts to get hold of Bangladesh's energy sources, mainly to export them away or to sell back to Bangladesh at very high prices;*

*Noting that having got hold of many of the country's gas fields, foreign companies are trying to get the country's coal fields, as exemplified by AEC/GCC's project to mine Phulbari coal primarily for export, in exchange for pitiful royalty and huge environmental, human, and economic costs;*

*Observing that Bangladeshi officials are succumbing to the pressure and lure of foreign companies, and are signing with them Production Sharing Contracts (PSC) for oil and gas exploration that are in many respects detrimental to national interests;*

*Noting that, while paying high prices to foreign companies to buy back Bangladesh's gas, energy officials are paying national gas companies extremely low prices, making these companies insolvent, while at the same time not allocating them adequate investment funds from government budget;*

*Observing that while discrimination between prices of gas produced by foreign and national public companies is crippling national companies, discrimination between prices of power produced using imported fuel and domestic fuel is discouraging the national private sector from engaging in power production;*

*Noting that through price discrimination, budgetary neglect, and other harmful policies, officials are letting the country's national capability for energy exploration and extraction to degrade and diminish, creating conditions in which Bangladeshi engineers and experts working for national companies feel compelled to leave and join foreign companies;*

*Observing that while Nigeria, with its huge oil wealth failed to grow, Japan, Korea, and Taiwan, which do have domestic fuel, managed to develop, showing that for success in development it is not so important to have domestic fuel as to have correct energy strategy and policies;*

*Being aware that as a tropical country, Bangladesh has ample solar energy, so much so that it is often termed as an inexhaustible mine for solar energy;*

*Observing that Bangladesh is also well endowed with wind energy and other renewable sources of energy such as river current to be used for submerged and floating small scale water power projects;*

*Noting that Bangladesh has considerable potential for bio fuel to be obtained from the waste of various crops, such as sugarcane, rice, jute, etc.;*

*Observing that Bangladesh has the potential to leapfrog to the stage of renewable energy bypassing the stage of non-renewable energy, in a similar fashion as her leapfrogging to the stage of wireless (mobile) phone bypassing the stage of wired (land) phones;*

*Noting that promotion of solar energy can also help Bangladesh create a new industry producing components necessary for solar kit, including the solar panel, so that solar industry can be the growth industry for Bangladesh in the 2000s as the garments industry was in the 1980s and 1990s;*

*Observing that there is considerable regional variation regarding access to modern sources of energy, with many parts of the western region still awaiting gas supply;*

*Noting that there is considerable social inequality regarding access to modern sources of energy, with the poor and rural population relatively deprived of electricity and gas supply and thus forced to depend on biomass;*

*Being aware that people using bio-mass often use it very inefficiently and suffer from indoor pollution caused by such use;*

*Noting that although nuclear power appears to be an attractive alternative, it has its own problems in the form of radioactive waste to be disposed off, and the possibility of lethal accidents;*

*Being aware that nuclear power plants take a long time to be constructed, and if set up with outmoded and unsafe technology, they can create costly and risky burden on the economy and ecology;*

*Observing that Bangladesh is moving towards setting up nuclear power plants with help of Russia;*

It is recommended that

1. Bangladesh adopts a pro-people, pro-environment, national capability-based energy strategy to produce and supply modern energy to its entire population for both household use and commercial use necessary for industrialization;
2. Bangladesh makes available for public knowledge and scrutiny all the Product Sharing Contracts (PSC) and other contracts related to energy production and use, that it has signed with foreign companies;
3. Bangladesh refrains from signing any further Product Sharing Contract (PSC) with foreign companies and instead switches to national capability-based exploration and extraction, so that full ownership over the energy sources can be established and maintained;
4. Bangladesh makes maximum effort to obtain from the responsible foreign companies the full compensation for the environmental, economic, and human damages done by *Magurchara* and *Tengratila* blowouts and other such accidents and incidents;
5. Bangladesh establishes parity between price of power generated using domestic fuel and power generated using imported fuel, so that the private sector can engage in a major way in production of power using imported fuel;
6. Bangladesh establishes parity between prices of gas extracted by foreign companies and gas extracted by national companies, so that the latter have necessary cash flow to expand production and undertake new exploration based on its internal resources;
7. Bangladesh provides additional budgetary resources necessary for national companies to undertake off shore exploration and extraction;
8. Bangladesh refrains from agreeing to the AEC/GCC proposal for mining of *Phulbari* coal primarily for export, and instead builds up national capability for environmentally safe mining of coal for domestic use;
9. Bangladesh takes up promotion of solar energy as a major task, uses the international climate change related funds for this purpose, and removes tariffs and offers subsidies for promotion of local manufacturing of solar power equipment, including solar panels;
10. In addition to solar, Bangladesh takes steps to use and promote other renewable sources of energy, such as wind, river current, tides, etc;
11. Bangladesh takes steps to make use of the country's potential in producing bio fuel by using agricultural and household waste;

12. Bangladesh ends regional inequality in access to modern energy supply through building appropriate infrastructure (such as gas pipeline), expanding the energy mix, diversifying modes of delivery (e.g. supplying gas in cylinders), appropriate pricing, and other necessary steps;

13. Bangladesh ends social inequality in access to modern energy supply through similar steps as necessary to end related regional inequality and through the additional measure of slab pricing to keep the energy price paid by the poor affordable;

14. Until modern sources of energy are made available to all, measures are taken to improve the efficiency of use of bio-mass and other traditional energy sources, in particular by popularizing and providing improved cook stoves replacing the current inefficient open earthen cooking stoves of rural Bangladesh;

15. In pursuing the nuclear option, Bangladesh displays appropriate caution, so that the nuclear power plants do not end up being costly and risky burdens on the economy and ecology.

## **Climate change**

*Noting that climate change is the gravest long term threat facing Bangladesh;*

*Observing that there are many dimensions along which climate change will affect Bangladesh, including submergence, salinity intrusion, river destabilization, extreme weather events, and spread of diseases;*

*Observing that even the part of the country that will escape submergence will be affected by salinity that will intrude deep and wide;*

*Being aware that the incidence, scope, and intensity of extreme weather events will increase;*

*Noting that climate change will lead to further spread of diseases and epidemics;*

*Being conscious that climate change will have adverse effects on Bangladesh's crop output, soil quality, forests, and the overall eco-system;*

*Noting that climate change is likely to make poverty reduction more difficult, aggravate regional inequality, and increase the possibility of civil unrest;*

*Noting that a switch from the current "Cordon Approach" to rivers to the "Open Approach" is necessary for Bangladesh to confront three of the five main dimensions of the adverse impact of climate change on Bangladesh, namely submergence, salinity intrusion, and destabilization of rivers;*

*Noting further that sedimentation is the greatest protection that deltaic Bangladesh has against rising sea level, and that the Open Approach to rivers is necessary in order to let the process of sedimentation to go on unhindered;*

*Being aware that Bangladesh has already taken some steps towards adaptation to climate change and that further steps are required to integrate climate change policies with sustainable development strategy;*

*Being aware that Bangladesh needs to and can do much on its own to adapt to climate change, without waiting for foreign help;*

*Observing that local research is leading to better understanding of the possible impact of climate change on rainfall pattern, cropping pattern, and cyclone intensity;*

*Being aware that the use of bio-indicator species for measuring and monitoring climate change impact is a proven technique;*

*Noting research findings of Bangladeshi scientists showing that using rice ratooning technology helps to reduce GHG emission from rice fields;*

*Being aware that replacement of rice growing by shrimp cultivation in the coastal districts of Bangladesh has led to replacement of green eco-system by white eco-system, increasing the vulnerability to climate change and reducing the adaptive capacity of the local communities;*

*Noting that developed countries are developing carbon capture and storage (CCS) technologies that hold potentiality for Bangladesh too;*

*Being aware that the youth of the country has a particular role in confronting climate change, which will affect them more than the current generation;*

*Noting that local governments have a particular role in mobilizing and guiding the local level initiatives of the people towards mitigation and adaptation;*

*Noting further that, just as in developed countries, business companies and industrial enterprises in Bangladesh too have a particular role in mitigation and adaptation;*

It is recommended that

1. Bangladesh integrates climate change policies with a sustainable development strategy, in order to benefit from the synergies of the two efforts;
2. Bangladesh builds up national capacity for successful engagement in the UNFCCC processes, and in so doing it considers appointing permanent “climate change ambassadors” who will remain in position despite changes in the government;
3. Bangladesh notes and makes proper use of the local initiatives of the people to adapt themselves to climate change, and strengthens the local governments to support such initiatives, including those toward afforestation, rain water harvesting, ensuring flood-proof drinking water supply, sanitation, etc;
4. Bangladesh abandons the current Cordon Approach to rivers and adopts the Open Approach in order to counteract submergence, salinity intrusion, and destabilization of rivers and to preserve the process of sedimentation;
5. Bangladesh promotes capacity building and community participation in disaster preparedness, in particular in confronting cyclones in the coastal areas, including construction and management of right type of multi-purpose shelters;
6. Bangladesh promotes domestic research funded by its own resources on various aspects of the climate change process and uses the findings in formulating policies and taking necessary

steps, such as promotion of rice ratooning technology, investment in bio-indicator species, promotion of CCS possibilities ;

7. Bangladesh promotes accountability, transparency, and good governance with regard to its climate change related efforts

8. Bangladesh enlists the country's youth in the effort against climate change, in particular through educating them about this challenge by including the issue in education curricula, and offering concrete ways in which they can participate in the effort;

9. Bangladesh encourages its business and industrial to monitor their GHG emissions and take steps to reduce them as much as possible;

### **Rivers and other surface water bodies**

*Recognizing the fundamental role of rivers in the economy and ecology of Bangladesh;*

*Being aware of the crucial importance of rivers in counteracting adverse effects of climate change such as submergence and salinity intrusion;*

*Noting that while diminished flow due to diversionary structures built by India is a major reason for the decay of Bangladesh rivers, Bangladesh's own domestic policies and mistreatment have aggravated the process;*

*Noting that Bangladesh has been following the Cordon Approach to rivers, aimed at sealing off floodplains from adjoining rivers through unbroken embankments;*

*Observing that the Cordon Approach has not proved successful and rather has had adverse effects on flooding, drainage, soil quality, sanitation, preservation of fresh water fish stock, functioning of waterways, temperature balance, etc;*

*Noting that pollution is killing Bangladesh's rivers and water bodies and of the country;*

*Observing that runoff from chemical fertilizer and pesticides is destroying the open capture fish stock of the country;*

*Recognizing that various types of organic waste continue to be a major source of river pollution,*

*Noting however that industrial effluent and waste have now become the biggest threat to Bangladesh's rivers;*

*Noting further that industrial pollution has almost killed off rivers around the Dhaka city and is aggravating the problem of water supply to the dwellers of the city;*

*Noting that encroachment is the other serious threat to Bangladesh rivers, and diminished flow and the Cordon Approach are making encroachment easier;*

*Being aware that burgeoning population, lack of arable land, pressure for subsistence, lack of awareness about the necessity of preservation of rivers, greed, unequal power structure, administrative corruption, etc. are also contributing to the encroachment process;*

*Noting that diminished flow, Cordon Approach, pollution, encroachment, and general lack of care all causing Bangladesh rivers to die;*

*Being aware that other surface water bodies, such as Beels, Jbeels, Haors, Baors, Khals, etc. are also facing the same problems of diminished flow, pollution, encroachment, and various obstructions due to projects inspired by the Cordon Approach, which in particular has facilitated filling up of hundreds of thousands of ponds across the country;*

*Noting that the Cordon Approach projects have killed the Baral river and are destroying the fabled Chalaan Beel;*

*Observing that the Cordon Approach and encroachment have given rise to the new problem of waterlogging;*

*Noting that through effort of BAPA and other pro-environment organizations and activists, awareness about the plight of rivers and the necessity of protecting them has increased;*

*Being aware that BAPA has formed Jatiyo Nodi Rokkha Andolon (JNRA), comprising river activists from all over the country, and BAPA and JNRA have built up river and “Beel” saving movements in various parts of the country;*

*Observing that the media has taken particular interest in river saving efforts;*

*Noting that the government has also taken some initiatives to remove river encroaching structures, curb river pollution, and recover lost Khals;*

*Being aware that the government has taken the initiative of demarcating the boundaries of rivers in order to prevent future encroachment;*

*Observing that even the judiciary has taken interest in protecting the rivers and other surface water bodies;*

*Noting that use of water sealed sanitary latrines is picking up in rural areas in order to prevent pollution by human waste;*

It is recommended that:

1. Bangladesh abandons the Cordon approach and adopts the Open Approach to rivers and uses the Open Approach to ensure river flow throughout the year;
2. Bangladesh takes steps to reduce dependence on chemical fertilizer and pesticides by adopting various methods of their more efficient use, such as Granular System of Fertilizer Application (GSFA), Integrated Plant Nutrition Management (IPNM) and Integrated Pest Management (IPM), and by promoting organic agriculture;
3. Bangladesh takes urgent steps to stop industrial pollution of rivers and other water bodies by forcing all industrial enterprises install Effluent Treatment Facility (ETF);
4. The government takes vigorous steps to free rivers, *Khals*, and other water bodies from encroachment;

5. While demarcating the boundaries of rivers, the government goes by the width that rivers attained during their historic peak summer flows and not by the width they have during the lean season;
6. The government erects appropriate structures to secure and make the river boundaries permanent, in order to minimize future encroachment, making sure that the design of these structures allow free flow of water between rivers and adjoining floodplains;
7. The government enacts and enforces laws forcing polluters to pay, in addition to heavy penalties, for the cost of cleaning and encroachers pay for the cost of demolition;
8. The government takes special care to protect the *Beels*, *Haors*, and *Baors*, to reserve the ecology and biodiversity of the areas where these are located, to make them serve as reservoirs for drinking water (with minor treatment like sedimentation with coagulation followed by disinfection), and to allow them continue to serve as sanctuaries for guest birds in winter;
9. The government accepts recommendations of the *Chalan Beel Rokkha Andolon (CBRA)* and takes immediate steps to free up *Baral* river and engages in a sustained effort to save this largest *Beel* of the country;
10. The government takes particular measure to preserve the health and beauty of *Hakaluki Beel* and other *Beels* of the *Bhati* area;
11. The government takes prompt steps to remove the river obstructing structures that have caused permanent water-logging in some parts of south-western part of the country;
12. Bangladesh includes in school curriculum the topic of rivers in order to make its future generations aware about the role of rivers in Bangladesh economy, ecology, and society and develop in them respect for rivers;
13. The government encourages consolidation of rural dwellings in order for the country to cope better with floods, economize on scarce arable land, and to provide various services better;
14. The government considers the use of water hyacinth for phytoremediation of waste water and removal of heavy metals such as Cu, Cd, Cr, and Pd; the use of activated palm ash for removal of lead from water; and the use of chemical oxidation for treatment of wastewater containing diazinon;
13. Bangladesh campaigns for use of water sealed sanitary latrines for ensuring proper sanitation in rural areas is further intensified and a target for full coverage by 2004 is achieved and discharge of untreated urban sewage is stopped;
14. The citizens, media, judiciary, and all sections of the society become more involved in the river movement and various river saving efforts.

### **Ground water contamination and arsenic-poisoning**

*Noting that arsenic contamination of ground water continues to pose a serious threat in Bangladesh;*



*Being aware that in addition to arsenic other heavy metals may also be a source of concern with regard to ground water;*

*Observing that the “three-kolshi arsenic filter,” devised by Dr. Abul Hussam, a BEN-CC member, and his colleagues, has received wide recognition and is being used widely for removal of arsenic from drinking water;*

*Noting that a general switch from groundwater to surface water holds the most promising route to overcoming the problem of arsenic and other heavy metals in the long run;*

*Being aware that a switch from groundwater to surface water is also necessary because the groundwater table is a limited geological resource that will get depleted if used continuously, so that dependence on groundwater cannot be a sustainable long term strategy for the country;*

*Noting further that aggressive use of groundwater will lead to land-subsidence that can exact a heavy toll, particularly in urban areas;*

*Being aware that depletion of groundwater has already become a problem in north-west region of Bangladesh;*

*Observing that since 1970s foreign lending agencies have been pushing Bangladesh toward groundwater despite the long term un-sustainability of this option;*

*Noting that that by disconnecting floodplains from adjoining rivers, the Cordon Approach has aggravated Bangladesh’s dependence on groundwater;*

*Observing that by adopting the Open Approach, Bangladesh can conserve the abundant surface water of the summer months and use it in the winter and thus minimize the use of groundwater, as has been the practice in this country in the past;*

*Noting that Bangladesh can also make use of rainwater harvesting to get pollution free water;*

*Observing that efforts may be made to enhance recharge of the groundwater table;*

It is recommended that

1. Bangladesh reverses its current tendency toward increasing dependence on groundwater and adopts the long-term strategy of depending on surface water;
2. Everywhere inside the country, national government, local governments, and communities develop reservoirs where the monsoon abundance of surface water can be preserved for use during the winter;
3. Necessary steps are taken for centralized filtration and supply of these reservoirs’ water to the neighboring population for drinking purposes;
4. Where such centralized filtration and supply is not yet possible, various low cost filtration methods (such as use of alums or *fitkiri*) are promoted and made available;
5. Until surface water supply can be ensured, and people need to depend on groundwater, steps are taken to ensure appropriate test for contamination by arsenic and other heavy metals;

6. Screening and monitoring of tube-wells for arsenic contamination is intensified, and people are encouraged to drink water from safe tube-wells only, if they cannot meet their drinking water need from either surface water or rain water harvesting;
7. In cases where people have no source of drinking water other than contaminated tube wells, necessary steps are taken to ensure that low cost arsenic removal methods are made available to them;
8. Bangladesh avoids attempts by commercial and other vested interests to reap unethical profits from the arsenic misery through marketing expensive arsenic kits;
9. In using arsenic removal methods, appropriate care is taken in disposal of the arsenic sludge, and centralized methods need to be put in place at the community level for such disposal;
10. Extensive as well as intensive public awareness program is launched urgently on the danger of drinking arsenic contaminated tube-well water and urging;
11. Skills of doctors and health workers are enhanced in diagnosing arsenicosis and in providing medical and health care to all affected patients.
12. In dealing with the arsenic problem, as with other problems in general, Bangladesh relies on local expertise and its own heritage, rather than foreign loans and advice, which often prove to be counter-productive, and only increases the country's debt burden.
13. Steps are taken to enhance recharge of the groundwater table;

## **Air pollution**

*Recognizing that quality of air is one of the most important dimensions of environment;*

*Being aware that the nature of air pollution in urban areas generally differs from than in rural areas;*

*Observing that while urban air pollution is more an outdoor phenomenon, with vehicular emission and other modern sources of pollutants playing a more important role, rural air pollution is more an indoor phenomenon, with emission from biomass used for cooking playing a more important role and affecting women and children more than adult men;*

*Noting with satisfaction that campaign by BAPA and other pro-environmental groups persuaded the government to ban in 2002 Two Stroke Engine Vehicles (TSEV) from the streets of Dhaka and also to introduce CHG run vehicles, as result the city's air quality has improved than what it was in the late 1990s;*

*Recalling with satisfaction that campaign by BAPA and other pro-environmental groups persuaded the government to switch from leaded to unleaded gasoline, as a result of which the lead content of city's air is much less than what it was in the late 1990s;*

*Observing that, despite the positive steps above, urban air quality still remains alarmingly poor, due to increased traffic, presence of old and unfit vehicles on the streets, pollution from neighboring brick fields, construction work, industrial, household, and medical waste, disappearance of trees and water bodies, population growth, etc.*

*Noting that sulfuric emissions from diesel using vehicles are a major source of air pollution;*

*Being aware that urban air pollution is a major reason for rising incidence of pulmonary diseases in urban areas;*

*Noting that indoor air pollution from use of biomass for cooking continues to pose a serious threat to the health of women and children in rural areas;*

*Alarmed that outdoor air pollution is spreading in rural areas too due to setting up of brick fields and industrial enterprises (in particular cement factories) that emit dust and fumes into the air;*

*Noting that while two-stroke engines vehicles have been banned in Dhaka city, these are allowed to ply in rural areas, spreading their back poisonous smoke;*

It is recommended that

1. Steps are taken to reduce urban air pollution through (i) reduction and ensuring more effective flow of traffic, (ii) removal of old and unfit vehicles from streets, (iii) conversion of more vehicles into CNG-based, (iv) requiring neighboring brick kilns to use gas or high quality coal instead of firewood, and to adopt more efficient method of firing that need less fuel and emit less smoke, (v) reduction and more effective and hygienic disposal of industrial, household, and medical waste, (vi) increase in the number of trees and green areas and water bodies within the cities, and (vii) curbing population growth;

2. Steps are taken to stop spread of outdoor air pollution in rural areas by (i) banning two-stroke engine vehicles throughout the country, (ii) requiring brick kilns use gas or high quality coal and adopt more efficient method of firing that need less fuel and emit less smoke, and (iii) requiring industrial enterprises to install appropriate scrubbers to filter out all pollutants from their gaseous emissions;

3. All out measures are taken to bring about a switch from the traditional, inefficient, smoke belching, open-hearth, earthen cooking stoves to closed, efficient, smoke free (or at least less smoke bellowing) cooking stoves, and in order to bring out this switch the government makes sure that the new, efficient stoves are available to the rural households at very low cost;

4. The government takes steps for effective monitoring the air quality and disseminates the information on a regular basis through media, in a similar fashion as weather reports are disseminated;

5. The government makes available health check up facilities so that affected people can have early diagnosis of developing pulmonary conditions and take precautionary measures to prevent deterioration;

## **Industrial Waste**

*Noting that industrial waste has now become the most important source of pollution for Bangladesh's land, water, and air;*

*Observing that rivers of the country are dying because of continuous and increasing industrial pollution;*

*Noting that despite efforts on the part of the government and the civil society, most of the industrial plants of the country are yet to have the effluent treatment facilities (ETF);*

*Being aware that even some of the enterprises that have ETF, do not activate them in order to cut costs;*

*Observing that in addition to ETF, industrial enterprises need to have appropriate disposal system for solid waste and necessary scrubbing facilities for removal of pollutants from their gaseous emissions;*

*Noting that the Industrial Effluent and Emission Quality Standard Promulgated in 1997 under the Environmental Conservation Act of 1995 is not strictly enforced;*

*Being aware that brick kilns are an important source of air pollution all across the country;*

*Alarmed that cement factories set up on river shoals (chars) are destroying the rivers and the adjoining areas through their solid and liquid waste and, in particular, dust emissions;*

*Noting that the requirement of obtaining environmental clearance, as part of the approval process of any industrial project, is not fulfilled properly;*

*Being aware that owners and managers of industrial enterprises need to be educated and made aware about the damage that their emissions and waste and their use of various physical resources cause to the environment and economy of the country;*

*Noting that in many cases workers of industrial enterprise themselves are the direct victims of the pollution created, as illustrated most glaringly by the situation in the tannery industry of Bangladesh;*

*Observing that it is in the interest of workers of industrial enterprises to fight against pollution to save both themselves from the direct impact of pollution and the neighboring population and the people of Bangladesh large from the damaging consequences of industrial pollution;*

*Noting that workers' movement should be a natural ally of the environment movement;*

It is recommended that

1. All industrial enterprises of the country are equipped with effluent treatment facilities (ETFs);
2. Measures are taken to ensure that the enterprises actually use the ETFs, and for that purpose surveillance committees are formed with participation of local people;
3. In places where suitable (such as in industrial parks set up by the government) centralized ETFs are set up, with compulsory participation and sharing of costs of the centralized ETFs;
4. In addition to ETFs, industrial enterprises are required to put in place safe disposal system of their solid waste and scrubbing facilities to remove pollutants from their gaseous emissions;
5. In all situations, "polluters pay" principle is followed, so that costs for cleaning up are borne by the polluters themselves and not by taxpayers;
6. Policies are pursued to discourage setting up of excessively polluting industries in Bangladesh;

7. Appropriate zoning is made so that industrial enterprises are concentrated in specified areas to make it easier to contain the pollution created by them;
8. Policies are pursued to encourage the development of more environment friendly industries;
9. Strict measures are taken to make sure that the cement factories do not pollute the neighboring land, water, and air by their solid, liquid, and gaseous waste;
10. Waste minimization, pollution prevention programs and environment management system are encouraged in industries.
11. Workers' organizations and trade unions are given a role in monitoring the environmental consequences of the respective industrial enterprises;
12. Local population is mobilized and given a role in monitoring the pollution created by industrial enterprises and acting as a countervailing force

### **Household Waste**

*Noting that rising income level is leading to higher levels of consumption, in turn increasing the volume of household waste;*

*Observing that alongside increased volume, the composition of household waste is also changing for the worse, with rising share of plastic and other non biodegradable and toxic components;*

*Noting that household waste disposal system remains inadequate, spilling over roads and streets, and dumped ultimately into open landfills that are a major source of contamination for neighboring land area and water bodies;*

*Being aware that the rising share of plastic and other non-biodegradable waste is making the landfills a source of toxic pollution;*

*Observing that people need to be educated and made aware about their own responsibility for proper disposal of household waste;*

*Noting that while Bangladesh had a tradition of reuse and recycling long before these were adopted as goals in developed countries, this tradition is now unfortunately weakening and disappearing;*

*Observing that as a result of campaign by BAPA and other pro-environmental forces, the government in 2002 re-imposed the ban on the use of plastic bags (up to a certain thickness), and this step has been helpful in reducing use of plastic bags, which were otherwise not only increasing alarmingly the plastic content of household waste but also clogging the urban drainage system, creating and aggravating the problem of water logging;*

*Being aware that many shops and consumers continue to use plastic bags despite the ban;*

*Noting that Bangladesh is uniquely endowed with jute, which can be used not only to reduce use of plastic bag domestically, but also to enhance export, making use of the current global trend away from synthetic to natural fibers, and thus to revive the jute industry of the country;*

*Observing that there is considerable potential to convert household waste into either fertilizer or energy, and Bangladesh can make use of Kyoto Protocol's Clean Development Mechanism to seek investment from abroad for such conversion, which can provide a win-win solution to the household waste problem;*

*Noting that some local initiatives have developed for proper collection and disposal of household waste;*

It is recommended that

1. The government and the people take rising volume and worsening composition of household waste as a serious threat to Bangladesh environment;
2. The people and the government realize that due to her extremely high density of population, it is now wise for Bangladesh to slavishly imitate the consumption style of the western countries, who, with their much higher land-man ratio, have enough space to create landfills for dumping of household waste far away from population centers and water bodies;
3. Bangladesh develops her own consumption style, suitable for her land-man ratio, climate, and natural conditions, not focused on private and material consumption only but also emphasizing the public and spiritual aspects of consumption and fulfillment, and preserving as much as possible her own heritage of use of natural fibers and the tradition of reuse and recycling;
4. The government conducts a massive awareness campaign, through advertisements in radio, newspapers, and television about the responsibility of the public toward proper collection and disposal of household waste, the importance of reuse and recycling, and encourages the local positive initiatives that have developed in this regard;
5. The government includes in school curriculum the issues concerning household waste, the responsibility that citizens have in this regard, the necessity of adopting appropriate consumption habits, the possibility of converting waste into resource, etc., so that the children grow up with necessary information and values to deal with the rising problem of household waste in future;
6. The government and local municipalities take measures towards proper collection, reuse and recycling, and disposal of household waste, including creation of covered landfills with waterproof lining so as to prevent seepage into neighboring land and water bodies and to prevent spillover and spread of bad smell;
7. The government implements more vigorously the ban on use of plastic bags and expands the ban on other types of plastic bags, and that the public cooperated with the government in this effort;
8. The government creates opportunities for separation of different types of waste and takes steps for conversion of household waste into fertilizer and power, with active participation of the private sector and with help from investment by foreign firms under Clean Development Mechanism of the Kyoto Protocol;
9. The government takes particular initiatives to reintroduce jute bags and other products made of jute fiber and jute stalk, thus helping jute growers and jute industry, while at the same time protecting the environment and enhancing the country's export earnings;

10. The government takes particular care to protect the country's water bodies from household waste and makes it a crime to throw litter, particularly plastic and other non-biodegradable waste into water bodies, and that the public cooperates fully with the government in this regard.

### **Medical and electronic waste**

*Noticing that medical and electronic wastes are becoming a major problem for Bangladesh;*

*Being aware that modern medical care is more dependent on inputs (including syringes) that are meant for one-time use only, to be disposed thereafter, so that the volume of medical waste is growing at a much faster rate than the rate of expansion of medical care;*

*Noting that many items of medical waste are hazardous, toxic, some even radioactive, and others having the potential to spread infection;*

*Alarmed that no proper and separate system for disposal of medical waste is yet in place so that medical establishments (clinics and hospitals) are general public are generally combining medical waste with ordinary household waste, thus aggravating the danger to environment and public health;*

*Observing that with the rise in income, the use of electronic products is expanding at a very fast rate;*

*Being aware that the number of cell phones in Bangladesh has crossed 50 million and is approaching 70 million;*

*Noting that like inputs of medical care, the tendency for electronic gadgets is also toward shorter life span, so that electronic waste is piling up fast, as people change models and makes frequently;*

*Being aware that some electronic waste, particularly those involving batteries, can have radioactive elements;*

*Noting that no proper and separate system is in place for disposal of electronic waste, creating a risky situation for public health and environment;*

It is recommended that

1. Medical establishments are required to set up appropriate disposal system for their waste, in cooperation with the local governments, and make it mandatory for the medical establishments to use the system, with imposition of fines on violators;
2. The general public is made aware of the separate system of disposal of medical waste so that they can also use it as necessary;
3. Instead of slavishly imitating the western dependence on one-time use, disposable inputs for medical care, Bangladesh preserves and promotes traditional practice of using reusable inputs, to the extent that such use is fully safe;
4. Local governments set up appropriate system for disposal of electronic waste, in cooperation with the sellers of electronic equipments, in particular the cell phone companies;
5. The general public is made aware of the system of disposal of electronic waste, so that they can use it as necessary;

6. Frequent change of models and makes electronic products that basically perform the same operations is discouraged through tax and levies so that the fast growth of electronic waste can be held back to some extent;

### **Forests, hills, and Adibashi rights**

*Being concerned that Bangladesh is losing her forests at an alarming rate, and corrupt forest department officials played a major role in degrading and destroying the forests;*

*Taking note of the fact that the forest cover of Bangladesh has fallen from above 20 percent to only about 6 percent of the area, when the recommended percentage is 25;*

*Noting that degradation of forests is going hand-in-hand with violation and constriction of the rights of the Adibashi peoples living in those forests;*

*Observing that the environment of the plain land Adibashi peoples is also threatened;*

*Noting that Adibashi people need constitutional recognition as separate ethnic entities;*

*Being aware that ill treatment meted out to the hilly people of the Chittagong Hill Tracts in the process of construction of the Kaptai hydroelectric project lies at the root of the subsequent ethnic strife and conflict that developed in the area;*

*Observing that the policy of settling Bangalee people in Chittagong Hill Tracts by displacing the hilly people has aggravated the conflict, and this settlement policy has also been a major cause of degradation of the forests, because Bangalee settlers often clear cut forests to introduce agriculture that is inappropriate for forests and hills;*

*Being aware that Adibashi people generally have a communalistic land system that is very different from the individualistic land system of the mainstream Bangalee people;*

*Noting that the 1997 Peace Treaty was a good step forward in resolving the conflict in CHT, but unfortunately this Treaty still remains to be fully implemented, and meanwhile vested quarters are trying to nullify the Treaty making use of the absence of recognition of Adibashi people as separate ethnic group in Bangladesh constitution;*

*Being aware that illegal tree cutting by tea estate owners and other vested quarters in hilly areas of Sylhet are disrupting the life and livelihood of the Adibashi people of the area;*

*Noting that various government projects, such as a of rubber plantation, tobacco cultivation, etc, have contributed to the degradation of the country's forests;*

*Being aware that clear cutting of forests to grow plantation crops has led to loss of top soil, increase in sediment choking neighboring rivers and streams, and dangerous landslides, all showing that the immediate gains from plantation crop are often outweighed by the long run costs of hill denouement and loss of forests;*

*Observing that many government projects, such as construction of Eco Park, have led to destruction of forests, rather than their preservation and growth;*



*Noting that Modhupur forests are almost on the verge of extinction, creating a crisis for the life and livelihood for the Munda and other Adibashi people living in this region;*

*Being aware that the forests of Bhawal Garh are under serious threat due to hundreds of industrial enterprises that have been allowed to be set up, that are now spilling solid, liquid, and gaseous waste in this area;*

*Noting that the Sundarbans are a unique national treasure that needs to be tended and preserved;*

*Recognizing that the Sundarbans are not only a source of many valuable economic inputs and a reservoir of immense bio-diversity, being in particular the habitat of the Royal Bengal Tigers and the spotted deers, but that it also serves as a invaluable shield against hurricanes and tidal bores, as the recent experience of hurricane Sidr showed so clearly;*

*Noting that the Sundarbans now face multiple threats, including that of encroachment, illegal and excessive timber extraction, illegal poaching, aggression from shrimp cultivation, and various ill conceived forest development projects;*

*Observing that illegal hill cutting has become a widespread phenomenon, particularly in various parts of the greater Chittagong district, including Cox's Bazar and Teknaf;*

*Noting that, in the name of social forestation and fast tree growth, various past governments of Bangladesh have promoted plantation of foreign tree species, such as eucalyptus, acasia, etc., which are however very disruptive and destructive to the local ecology, flora, and fauna;*

*Being aware that Bangladesh has a huge potential for homestead and social forestry,*

*Recognizing the importance of involvement of local communities in forest management;*

It is recommended that

1. Bangladesh takes urgent steps to stop the current process of degradation and destruction of forests and vigorously pursue the goal of achieving a forest cover of 25 percent of the land area;
2. Bangladesh amends its constitution to recognize *Adibashi* peoples as ethnically distinct from the majority *Bangalees*, with their distinct land and administrative system, language, and culture, and that Bangladesh state takes on the obligation to help *Adibashi* people preserve their distinct material and spiritual culture;
3. Bangladesh recognizes the vital link between preservation of forests and preservation of *Adibashi* rights and makes active use of this link to restore and enhance the country's forests;
4. Bangladesh implements the 1997 Peace Treaty fully and takes additional measures towards a comprehensive and lasting resolution of the ethnic conflict in CHT region, including an end to the policy of settling of *Bangalees* in CHT and considering resettlement of those already settled to new lands that are emerging in the coastal areas of the country;
5. Bangladesh restrains from clear cutting of hills to promote cultivation of plantation crops, and instead promotes sustainable extraction of forest resources;

6. Bangladesh stops illegal felling of trees, particularly in areas where the trees are vital for the life and livelihood for *Adibashi* and other local people;
7. Bangladesh stops giving permission to set up industries in *Bhawal Garb* and other forests and takes step to relocate the ones that have already been set up;
8. Bangladesh stops the process of extinction of the *Modhubpur* forest and restores this forest to its full original extent, and reestablishes the traditional and customary rights of the *Adibashi* people living in this forest;
9. Bangladesh stops all forest disrupting projects, such as construction of Eco Parks, in particular the one in *Modhubpur* forest, that is one of the main reason for degradation of what remains of this forest;
10. Bangladesh takes active measures against all illegal hill cutting and metes out exemplary punishment to those responsible, including government officials involved;
11. Bangladesh promotes homestead and social forestry, making particular use of roads, highways, river embankments, and coastal polders, where a green belt may be created to serve as a protection against hurricanes and tidal bores;
12. In promoting homestead and social forestry Bangladesh depends only on indigenous tree species, and stops any further spread of alien tree species, taking measures to remove the ones that have so far been planted;
13. Bangladesh takes particular care of the *Sundarbans*, stopping encroachment, illegal timber and other resource extraction, poaching, conversion into shrimp farms, and restoring it to its original borders;
14. To relieve pressure on forests arising from the need for firewood, Bangladesh makes modern energy sources available to all people and everywhere in the country, and ensures, in particular, the switch of all brick kilns from firewood to modern fuels, while at the same time raising the efficiency of utilization of fuel by them;
15. In preserving and tending forests, emphasis is given on community participation, including participation of the *Adibashi* people living in the area; in particular, the landless and the destitute may be enlisted in tending social forests in return for some of the benefits to be obtained from them;

### **Bio-diversity, sustainable agriculture, and protection of natural resources**

*Being aware that being the largest active delta in the world, Bangladesh is rich in biodiversity and home of many terrestrial and aquatic species;*

*Knowing that Bangladesh is particularly rich with regard to variety of freshwater fish species, aquatic plants, paddy and other agricultural crops, which together comprise our national natural heritage;*

*Observing that reduction in water flow, pollution, encroachment, and decay of Bangladesh's rivers and water bodies have already led to the extinction of many fish and aquatic species and have put many more under threat;*

*Noting that decay and destruction of forests have led to extinction of many unique types of animals and are threatening the survival of many more;*

*Being aware that increased use of chemical fertilizers and pesticides and deprivation (through the Cordon Approach) of floodplains from the silt of regular river inundation have led to the deterioration of soil quality in many parts of the country, making inorganic agriculture not sustainable in the long run;*

*Noting that tobacco cultivation is promoting tree felling and having other harmful effects on soil, ecology, and environment in many areas, particularly in districts of Chittagong area;*

*Observing that excessive use of artificial irrigation may also invite problems of salinity and lead to deterioration of soil quality;*

*Noting that developed countries are now moving away from chemical input based inorganic agriculture to organic agriculture based on natural fertilizers and other inputs;*

*Recalling that Bangladesh has a rich tradition of organic agriculture and she can revive that tradition both to put agriculture on a sustainable path and to make use of the burgeoning international market of organic agro produce and thus enhance export earnings;*

*Observing that some international companies are trying to deprive Bangladesh from her rich variety of agricultural crops by appropriating and displacing them by introducing their own, genetically modified (GM) crops, which would make Bangladeshi farmers permanently dependent on them for seeds;*

*Noting that while some GM crops may have higher output, their long term safety for human health, environment, and preservation of bio-diversity, and their long term viability for the farmers are yet to be firmly established;*

*Being aware that Bangladesh's own scientists and institutions, such as BIRI and BAPI, have been successful in inventing more productive varieties of paddy and other crops that have helped the country to raise its crop production;*

*Observing that introduction of alien species of fish is often proving destructive to the indigenous species of fish and to the ecology in general, just as introduction of alien species of trees is proving destructive for local flora and fauna;*

*Being aware that improper methods of mineral extraction poses another important threat to Bangladesh environment;*

*Noting that improper decisions regarding mining of coal in north western part of Bangladesh can prove to be very destructive for environment, economy, and human life there;*

*Observing that meanwhile indiscriminate extraction of stone and sand has become a serious threat to the rivers, river banks, and the people of the localities;*

*Noting that relentless extraction of stones, particularly using the "bomb method," which involves use of dynamites, has destroyed the pristine environment of Sylhet's Jaflong area, which used to be one of the most attractive tourist spots of the country;*

*Being aware that indiscriminate sand extraction has caused rivers in many areas to changes in their channels leading to severe river bank erosion and destruction of land and property, leaving many people destitute;*

It is recommended that

1. Bangladesh takes preservation of its rich biodiversity and natural resources as a serious task;
2. Bangladesh conducts a detailed and exhaustive inventory of the biological species that are and were available in its territory;
3. Bangladesh creates a depository with samples and seeds of all her crops, fruits, plants, and trees;
4. Bangladesh improves the *Mirpur* national zoo to have representation of all animal species that are and were available in her territory;
5. Bangladesh stops any further loss of her freshwater fish and other aquatic species by ending degradation of her rivers and water bodies, and recovers the species that have been lost;
6. Bangladesh stops any further loss of her terrestrial species by ending decay and degradation of her forests and tries to recover the ones that have been lost;
7. Bangladesh refrains from adoption of genetically modified crops that will undermine the local genetic diversity of crops, make farmers permanently dependent on the foreign companies for seeds, and undercut their long run economic position;
8. Bangladesh conducts her own research using national expertise and institutions, such as BIRI and BARI, to devise more productive varieties of different crops, instead of depending on foreign companies for proprietary seeds;
9. Bangladesh gradually reduces her dependence on chemical fertilizer to prevent deterioration of soil quality and to ensure long run sustainability of agriculture;
10. Bangladesh conserves on irrigation water through appropriate choice of cropping pattern and methods of application of water in order to minimize potential problems of salinity and deterioration of soil quality;
11. Bangladesh discourages use of top soil for brick manufacturing in order to ensure sustainable, productive agriculture;
12. Bangladesh discourages tobacco cultivation in order to protect trees, soil, and environment, as well as to reduce harmful effects of tobacco on the health condition of the population;
12. Bangladesh takes caution in deciding about methods of mining of her minerals, including coal, and refrains from such mining as would be harmful for the environment and whose economic and human costs will surpass the benefits;
13. Bangladesh puts an end to the indiscriminate stone mining and instead regulates the industry in such a way that it does not destabilize rivers and destroy the environment;
14. Bangladesh regulates the sand extraction activity in such a way that the activity does not destabilize river and aggravate river bank erosion.

## Urbanization and environment

*Recognizing that, as Bangladesh industrializes, she will become more urban, with much greater proportion of the population living in urban areas in the future;*

*Noting that due to extreme scarcity of land, expansion of urban areas in Bangladesh will have to occur at the expense of land currently under agricultural use, thus posing a challenge to ensuring agricultural output growth;*

*Recognizing that Bangladesh has to aim for compact urbanization, something similar to what Japan has achieved; rather than urban sprawl that is typical of the US and other land-abundant developed countries;*

*Noting that due to the extremely high density of population and very short distances, Bangladesh may also aim at comingling of urban and rural areas rather than a sharp separation between the two, a pattern that is also evident in Japan;*

*Being aware that Bangladesh should aim for dispersed urbanization, instead of focusing on only one or two megacities, as is the case currently, when most urban growth is concentrated on the capital city of Dhaka, accompanied by stagnation and even decay of many district and mufassil towns;*

*Observing that in view of scarcity of land, population growth, growing shift of rural population to off-farm activities, the necessity of better access to various physical and social infrastructural services, the necessity to cope better with flooding and seasonal fluctuations in river flows, and the necessity of better use of land, water, and human resources of rural Bangladesh, it may be useful to encourage rural settlement pattern toward compact townships, which will then help to lessen the urban-rural divide and to achieve the goal of more dispersed urbanization;*

*Noting that in view of the high density of population, very short distances to be traversed, and flat terrain make non-motorized vehicles, particularly bicycles, a very appropriate mode of transportation for Bangladesh's urban centers;*

*Noting further that as a mode of transportation, bicycles have many additional beneficial effects, such as saving energy, reducing emissions, better health, less traffic congestion, more social interaction, greater equality and cohesion among citizens, etc.;*

*Being aware that many developed countries are moving away from private cars and relying more on bicycles;*

*Noting that Bangladesh manufactures and even exports bicycles, so that adoption of bicycles as the main mode of urban transport will help the country's bicycle industry to develop further, helping in turn the entire economy through its forward and backward linkages;*

*Observing that Bangladesh is a riverine country, so that almost all her urban centers have developed on river banks, depending on rivers as the main connection with the rest of the country, and that though with the advent of railways and recent expansion of road transportation the role of rivers as means of transportation has decreased, rivers continue to be and will remain a very important part of urban Bangladesh;*

*Noting that the Cordon Approach to rivers has often encouraged the authorities to seal off cities from their neighboring rivers, with very detrimental consequences, such as (i) creation of water logging within the cities, (ii) deprivation of the city from the beneficial effects of regular river flows, including recharge of the water bodies inside*

*the cities, and availability of surface water as a source of water supply, (iii) promotion of below-flood-level settlement, leading to the perennial risk of inundation due to either breach or overflow of rivers, (iv) loss of canals as an alternative mode of transportation, (v) temperature imbalance due to loss of moisture and greenery, etc.;*

*Observing that cities in developed countries, such as Amsterdam in Holland and Venice in Italy, have enhanced their connections with neighboring rivers through network of canals, and are benefiting from manifold positive effects of these connections, instead of trying to seal them off from rivers;*

*Noting that roads and highways both inside urban centers and particularly those connecting different urban centers and running across floodplains should better be constructed as flyovers in order to preserve free passage of water between river channels and floodplains;*

*Observing that noise pollution has become a big problem in urban areas of Bangladesh, and it is having adverse effect on city life in many different ways, particularly in regard to activities that require mental concentration;*

*Alarmed that unless urbanization in Bangladesh is guided in proper directions, the country may head towards a disaster with horrible traffic congestion, ubiquitous and horrendous slums, unhealthy environment, and social conflict and strife;*

It is recommended that:

1. Bangladesh chalks out a perspective plan to guide the country towards more dispersed, regionally balanced, and sustainable urbanization, minimizing pressure on the capital Dhaka city, and ensuring robust and healthy growth of the district and *upazilla* towns;
2. Bangladesh encourages more compact rural settlement pattern so as to conserve and better utilize the land, water, and human resources and lessen the rural-urban divide;
3. Bangladesh promotes compact urbanization, with more vertical growth than horizontal expansion, and based more on public transportation and bicycles and less on private motor cars;
4. Bangladesh preserves and enhances the links of her urban centers with neighboring rivers by following the Open Approach to rivers, and preserves, recovers, excavates new canals to expand the connection of cities with rivers;
5. Bangladesh constructs roads and highways connecting her urban centers in the form of flyovers, to the extent possible, in order to ensure free passage of water between river channels and floodplains;
6. In developing her urban centers, Bangladesh preserves enough open space, greenery, and water bodies to make cities more livable and healthy, particularly for the children and younger generations;
7. Bangladesh cities keep the storm drainage system separate from the sewerage system, using good use of the canals for the former, and ensuring that the sewer water is treated before being discharged into water bodies;
8. The government, private sector, and the civil society take concerted efforts to reduce noise pollution, by implementing the provisions of the noise pollution act of 2006 and taking other necessary measures, including educating drivers about the ill effects of noise, seeking

cooperation of the bus and truck owners' association, raising public awareness, enlisting the help of the media, seeking cooperation of public and private agencies to keep their premises noise free, restricting hours of construction operations that are particularly noisy, limiting the range of operation of hawkers, etc.;

9. Bangladesh encourages communities' participation in designing the urban landscape and in taking major decisions regarding major developing activities.

### **Special problems of the Dhaka city environment**

*Noting that Dhaka city has witnessed tremendous growth in the last few decades, with its population swelling beyond 10 million and its boundary stretching from Bhawal Garh in the north to Dhaleshwari in the south and Shityalakkha in the east to Turag in the west;*

*Observing that the population of Dhaka city has grown at a rate that is three times higher than the country's overall population growth rate, implying that migration from the rest of the country has been the main reason for the exponential growth of Dhaka city;*

*Alarmed that Dhaka city's infrastructure is failing to keep pace with the rising population, creating a crisis situation in many respects, including supply of water, electricity, gas, sewerage service; housing, roads, and recreational facilities;*

*Noting that a particular manifestation of the crisis is the traffic jam that slows down the city, often bringing it down to a standstill;*

*Recognizing that traffic jam has emerged to be the most pressing problem of Dhaka city, hampering economic and business activity and day to day life;*

*Observing that, misguided transportation policies, such as promotion of private cars, have been one of the main reasons for the current traffic crisis in Dhaka city, because of its extreme density of population and paucity of roads;*

*Noting that failure to develop adequate public transportation and to encourage alternative modes of transportation, such as biking, together with bad town and traffic planning, has aggravated the traffic jam;*

*Realizing that Dhaka city needs a two-pronged strategy to overcome its traffic problem, one for the short run and the other for the long run, remembering that the short run measures will not be ultimately successful unless correct long run strategy is adopted;*

*Noting that to resolve the traffic crisis, the government is considering many big projects, including construction of underground railways (metro), elevated roads, tramways, light rails, etc, and that there are vested interests pushing their favored projects, so that it is necessary to be careful in taking decisions about these projects, which need to be considered only as parts of an overall long term sustainable transportation strategy;*

*Being aware that cities of the developed world are currently moving away from elevated roads, in part because these prove to be hazardous and not aesthetically satisfying;*

*Noting that Dhaka city has pursued the wrong, Cordon Approach to rivers, constructing Western Embankment Project to seal itself from the Buriganga and Turag rivers on the west and planning to construct the Eastern Bypass project to seal itself from the Balu and Shityalakkha rivers on the east;*

*Observing that severing connections with adjoining rivers following the Cordon Approach has given rise to water logging as a major new problem;*

*Noting that cordoning off from neighboring rivers has gone hand in hand with encroachment and filling up of the canals that used to connect the city with the rivers, and the cordoning has also led to decay of other surface water bodies, such as lakes and ponds;*

*Observing that the growth of the city is leading to filling up of most of the wetlands, both inside the city and adjoining it, that used to serve as flood and rain water retention area, and that this filling up process is aggravating the problems of flooding and water logging;*

*Being aware that waste and effluent from industrial enterprises in and around Dhaka city, in particular its tanneries and dyeing factories, and untreated sewage have polluted the adjoining rivers, so much so that many of these rivers, including the river Buriganga, which gave birth to Dhaka city, is now biologically dead, and at many points pollution has led to horrendous odor making the life of the people of the neighboring areas miserable;*

*Noting that, for water supply, Dhaka city has been depending mostly on its groundwater aquifer and pollution of and severance of connection with rivers are making it difficult to use river water as a source of supply;*

*Alarmed that continuous extraction of ground water has led to a significant drop in the groundwater level, creating a danger of subsidence with serious consequences;*

*Noting that Dhaka city also suffers from the risk of earthquake, which can have devastating consequence in view of the high population density and the fact that most buildings are not earthquake proof;*

*Observing that due the population pressure, scarcity of land, greedy behavior of vested quarters, inadequate city planning and implementation, inappropriate legislation, regulations, and institutions, Dhaka city has been fast losing its open spaces, greeneries, parks, and playgrounds, making it very difficult for people, particularly the youth of the city to engage in healthy outdoor activities;*

*Being aware that there exists a Dhaka Metropolitan Development Plan (DMDP) or the Master Plan for long term development of Dhaka city, though Rajuk is not always following this plan, vacillating in formulating and finalizing Detail Area Plan (DAP) conforming to the Master Plan, despite the significant help that BAPA and other pro-environmental groups have lent for this purpose;*

*Being conscious that many other agencies also are not supporting Master Plan conforming DAP, and in particular, many private developers are putting up stiff resistance to DAP particularly because of its proposition to set aside 21 percent of the area as flood and rain water retention areas;*

*Noting that Rajuk continues to be busy with new residential projects and distribution of plots, when its main function should be planning of the city, leaving actual development of residential and commercial projects to the private sector;*

*Observing that Rajuk's projects and distribution of plots represent an unfair redistribution of wealth in favor of the chosen few (who receive the plots) at the expense of the taxpayers, whose money is spent on development of these projects, and particularly at the expense of the poor families who are evicted in order to create these projects;*



*Noticing that a significant part of Dhaka city's population live in slums and poor dwellings, lacking very basic amenities and supplies;*

*Observing that noise pollution has become a particularly serious problem in Dhaka city, affecting negatively work environment of offices, educational institutions, and also domestic life;*

*Being aware that campaigns by BAPA and other pro-environment organizations has led the government to enact Wetland Protection Law, though this law is not implemented adequately;*

*Noticing that campaign by BAPA and other pro-environment groups has led the government to adopt new Building Rules requiring more open space to be left in exchange for greater heights of the buildings, though implementation of these Rules is not yet ensured fully;*

*Noting that campaign by BAPA and other pro-environment and consumer rights groups has led the government to adopt rules regarding private housing developers meant to provide ordinary citizens greater protection against developers' malpractices, however the relevant legislation has been held up in the parliament;*

*Observing that there is a tremendous coordination problem among various agencies responsible for different dimensions of development and maintenance of Dhaka city, including Dhaka city corporation (DCC), Rajuk, Dhaka WASA, DESA, etc, and this lack of coordination lead to huge inefficiency, wastage of resources, and sufferings of the public;*

It is recommended that

1. The Dhaka Master Plan is upheld, the Detailed Area Plans are prepared following the Master Plan, and are implemented properly;
2. Rajuk concentrates on formulation and implementation of the Master Plan and DAPs and ends its engagement with residential and other development projects, leaving such projects to the private sector;
3. The organizations and agencies responsible for development, maintenance and functioning of Dhaka city ensure better coordination among themselves for efficiency and better results;
4. Rajuk and other agencies responsible for Dhaka city follow the Wetlands Protection Act, preserve the existing wetlands, and take steps to recover the ones that have been encroached;
5. Rajuk and other agencies responsible for Dhaka city follow the Building Rules adopted by the government, in order to ensure preservation of necessary open space, and the government makes effort so that the Plot and Flat legislation gets approved by the Parliament without further delay;
6. The government formulates a national open space policy providing guidance to cities in formulating their own long term strategies and policies for creation and preservation of parks, play grounds, other leisure areas, and water bodies;
7. Dhaka city switches from the Cordon Approach to Open Approach to rivers and restores its connections with adjoining rivers by creating passages (culverts) in the Western Embankment

and by constructing the Eastern Bypass in the form of an elevated road to allow water to pass between the rivers and the city;

8. The government takes steps to recover all canals of the city and re-excavate them so that these can serve as conduits to neighboring rivers, mitigating flood and water logging, and also act as an alternative medium for transportation;

10. The government takes steps to stop all types of pollution of the rivers, beginning with industrial pollution, making it compulsory for all Dhaka factories to install ETF, preventing household waste, including untreated sewerage, from reaching the rivers, and stopping commercial and medical waste from being dumped into the rivers;

11. The government takes up an integrated three-pronged strategy to overcome the current traffic crisis, consisting of short, intermediate, and long-run measures;

12. Among short-run measures, the government considers (i) managing the traffic flow better, (ii) staggering of hours for government, education, and commercial establishments, (iii) improvement in parking rules and regulations; (iv) encouraging the private sector to increase number of buses, minibuses, and other vehicles for public transportation by rationalizing the fare structure, removal of tariff and duties on import on such vehicles, getting of cartels that may exist in the public transportation sector; (v) increasing the number of buses in the public sector; (vi) imposition of very high duties on import of private cars, raising registration and license fees, and imposition of tax on use of private cars in the city centers, (vii) conversion of many segments of city into completely pedestrian, (viii) promotion of bicycles through creation of bike routes, removal of tariff and duties on import of inputs required for manufacture of bicycles, and removal of sales tax on bicycles, (ix) encouraging walking through clearing, extending, and expanding sidewalks, construction of rest stops, and ensuring safety for pedestrians, particularly women and girls, (x) requiring all builders to leave adequate space for walkways for pedestrians;

11. Among intermediate measures, the government considers (i) expansion and rationalization of road space, (ii) promotion of cellularization of the city, reducing the necessity for travel by people for day-to-day purposes; (iii) making ensuring adequate parking space a requirement for new construction of residential and commercial buildings; (iv) promotion of surface rail through reactivating the abandoned rail tracks, introduction of rapid rail service connecting Dhaka with neighboring regions, so that people can work in Dhaka while living in neighboring towns, and construction of overhead bypasses so that train tracks and roads do not obstruct each other, etc. and (v) construction of tramways as secure, frequent, dependable surface mode of transportation; (vi) use of the neighboring rivers restored canals as an alternative mode of transportation, bringing into operation the proposed circular waterway; (vii) creation of a ring road using the western embankment and the proposed eastern bypass and other connecting roads; (viii) conduct of studies of the experience of underground railways of other tropical and deltaic cities (particularly of Kolkata), to determine the prospects of underground railway as an alternative method of transportation for Dhaka city; (ix) gradual replacement of the manual rickshaws by CNG run three wheelers, protecting job and livelihood of current rickshaw pullers;

12. Among the long run measures, Bangladesh considers (i) switch from the current urban-biased developed strategy to a pro-people, rural-oriented development strategy that will stop the in-migration and encourage out-migration, relieving the Dhaka city of the population pressure, (ii) dispersal of industries to other parts of the country, including the western part of the country, through improvement of rail, roads, highways, and the *Mongla* port, (iii) construction of

underground railways, provided feasibility and cost-benefit studies confirm their physical and economic viability;

13. Slum dwelling is discouraged through general improvement in income and living standard by pursuing a pro-poor growth strategy, growth in rural areas and townships discouraging rural people from flocking into Dhaka city for livelihood, and creation of low cost housing opportunities for the poor either in the current slums themselves or in nearby opportune spots;

14. Rajuk, DCC, and other relevant responsible organizations take steps to recover the lost parks and open spaces of Dhaka city, creates new ones, and maintains them all for proper use by all residents of the city, including women and girls;

15. The government undertakes mid and large scale area renewal plans, using techniques of land pooling and plot boundary adjustment etc, aiming to accommodate all classes and to reach a win-win solution for landowners, developers, and the cities;

16. The authorities pay particular attention to the growing problem of noise pollution, and take measures, including implementation of the 2006 act regarding noise pollution, in cooperation with the private sector and the civil society, and following the measures suggested in the previous section on problems of urbanization in general.

## **Coastal and marine environment**

*Recognizing that Bangladesh has a long coast line, and the country can benefit much from efficient use of the marine resources;*

*Being aware that Bangladesh's Cox's Bazar beach is recognized to be the longest and one of the most beautiful beaches in the world;*

*Noting that the marine and coastal environment is under threat from several directions, including ship-breaking industry, shrimp cultivation, unplanned construction along beaches and sea shores;*

*Observing that, in order to create beach heads necessary for its operation, the ship breaking industry is promoting vested quarters to cut down the trees planted under coastal forestry program;*

*Alarmed that many ships with toxic, non-biodegradable, and radioactive waste are being brought to the country for shipbreaking;*

*Being aware that there are disputes between Bangladesh and India and also between Bangladesh and Myanmar regarding maritime boundaries, and resolution of these disputes is necessary for proper harnessing of Bangladesh's maritime resources and good relationship with neighboring countries;*

*Noting that Bangladesh has divided its economic zone of the Bay of Bengal into several off-shore blocks and have signed Product Sharing Contracts with various foreign companies for exploration and extraction of oil and gas;*

*Observing that off shore exploration can often lead to accidents, causing serious damage to the coastal and marine environment;*

*Noting that the St. Martin's island, consisting of coral reef, is a unique treasure of Bangladesh, but is under threat from mismanagement and commercialization;*

*Being aware that commercial developments in Cox's Bazar and Teknaf area are not always proceeding in a way that is helpful for conservation of the beach, environment of the sea shore, and promotion of the desired kind of tourism;*

It is recommended that

1. The government formulates a comprehensive plan for protection of the country's coastal and marine environment, taking into note variations that exist in this regard in different parts of the country's shoreline and the sea;
2. The government regulates the ship breaking industry strictly to prevent it from importing ships that contain toxic and other pollutants, to ensure that it carries out its operation in way that the marine and coastal environment, including the coastal forests, is protected, and to ensure a safe and healthy environment for the workers of the industry;
3. The government regulates the marine fishing industry in order to ensure the sustainability of the fish and marine resource stock of the Bay of Bengal;
4. Bangladesh takes effective steps to reach amicable settlement with India and Mynamar with regard to maritime boundaries, protecting effectively Bangladesh's national interests;
5. In conducting off-shore exploration for oil and gas, Bangladesh makes sure that adequate measures are taken to avoid any accidents leading to oil spill and harming the marine and coastal environment;
6. In encouraging tourism development activities in Cox's Bazar, Teknaf, and other beach areas of the country, policies and manuals are formulated and other necessary measures are taken to protect the health and environment of this ecologically sensitive area;
7. Adequate measures are taken to protect Bangladesh's unique coral island of St. Martin's;

## **Environment and health**

*Noting that pollution adversely affects health directly and in many ways;*

*Being aware that air pollution is causing pulmonary problems of epidemic proportions in both urban and rural areas;*

*Noting that health effect of arsenic is lethal, and acting, according to many health experts, as a time bomb;*

*Observing that industrial pollution is causing serious health problem for people living in areas adjoining industrial enterprises;*

*Alarmed that food poisoning through deliberate use of harmful chemicals for ripening and preservation of food items has now become a serious problem;*

It is recommended that

1. Urgent steps are taken to prevent air and water pollution that is adversely affecting health conditions directly;
2. Make the people aware of the health effects of various forms of pollution so that they can take various preventive steps until the pollution is stopped at the source;
3. Facilities for diagnosis and treatment of health problems caused by pollution are expanded and easy access to them by all strata of the population, rich and poor, is ensured;
4. Steps are taken to stop all forms of food poisoning caused by deliberate use of harmful chemicals;
5. People are made aware of the harmful effects of use of chemicals for ripening and preserving food items, so that their support can be mobilized in stopping such poisoning.

### **Economic, Administrative, legal, and management aspects of environment protection**

*Being aware that protection of environment often requires adequate financing, though many pro-environment policy changes can be brought about that do not require too much of additional finance;*

*Noting that protection of environment requires proper administration, management, and legal framework;*

*Observing that though Bangladesh has a ministry for forests and environment and a separate directorate for environment, the administrative set up overall still remains inadequate given the tasks faced, particularly at the district and local levels;*

*Being aware that Bangladesh enacted Environment Conservation Act in 1995 (amended in 2000 and 2002) and formulated Environment Conservation Rules in 1997, and that Bangladesh enacted Environment Court Act in 2000 (amended in 2002);*

*Noting that Bangladesh has also enacted laws and formulated policies, rules, and guidelines with regard to brick fields, building construction, wetlands, motor vehicles, bio-safety, medical waste, effluent treatment plants, noise pollution, environmental impact assessment (EIA) for industries, etc.;*

*Observing that Bangladesh environment continues to deteriorate, indicating that the acts, rules, regulations, and guidelines are still inadequate and/or these are not properly implemented;*

*Disappointed that investigations in 2007-2008 exposed huge corruption at the department of forestry involving its Director General, confirming that government agencies are very much compromised by corruption, making laws, regulations, rules, and guidelines ineffective;*

*Noting that as per the Environmental Court Act of 2000 (amended in 2002) only designated inspectors of the government's department of environment can file suit, depriving the public a direct role in using these courts for environmental protection;*

*Observing that Environmental Courts in Bangladesh therefore remain ineffective, with government inspectors filing and winning very few suits, and the public, not convinced of the sincerity of government inspectors, generally avoiding these courts and turning instead to the High Court for redress of environmental harm;*

*Noticing that the High Court is taking an active interest in protection of environment, issuing rulings, either in response to suits petitions filed by pro-environmental organizations and individuals or even on a suo moto basis;*

*Noting that within the government structure, the environment ministry still remains a relatively less important one, with small budget and low profile, even though environmental issues, including the issue of climate change, have become of overriding importance;*

*Being aware that the ministry of environment has also formulated various policies and programs, including National Environment Management Action Plan, National Action Program for Combating Desertification of Bangladesh, National Program for Action for Protection of the Coastal and Marine Environment from Land Based Activities, Bangladesh Climate Change Strategy and Action Plan, and Bangladesh National Adaptation Program of Action;*

*Noting however that in most case these Plans and Programs are outcomes of foreign donor sponsored projects, instead of being sincere homegrown initiatives, and hence fail to be that effective;*

*Observing that most successful steps of the ministry of environment (such as introduction of unleaded gasoline, imposition of ban on TSEVs, and ban on use of polythene bags) have been those taken in response to homegrown movement, showing that the collaboration between the national environment movement and the national government is more effective than collaboration between the national government and foreign lending agencies;*

*Capacity to formulate environment policy and implement them still remains low;*

It is recommended that

1. Bangladesh ensures adequate financing for protection of environment, as and when required, and in doing so Bangladesh follows the “polluters pay” principle, to the extent possible, and explores use of “green tax” for the purpose;
2. Bangladesh beware of unnecessary and often harmful projects that vested quarters push in the name of environmental protection, particularly using loan money from foreign agencies;
  1. Bangladesh strengthens its administrative capacity and legal framework for protection of environment;
  2. Bangladesh elevates the status of the ministry of environment, by providing it more budget and strengthens the Directorate of Environment by allowing it to have more manpower at the head office and have stronger offices at district levels;
  3. Bangladesh rationalizes the salary structure of the environment officials, as part of rationalization of salary structure of the entire civil service, in order to reduce pressure for them to be corrupt;
  4. Bangladesh creates environment cells in all ministries to coordinate the environment related aspects of the activities of these ministries with that of the environment ministry;

5. Bangladesh conducts a domestic review of the existing laws, rules, regulations, guidelines, programs, with participation of pro-environment organization and individuals, to identify the gaps and to take necessary initiatives to fill up these gaps, keeping in mind the international protocols that Bangladesh has signed;
6. Bangladesh amends the Environment Court Act to make room for aggrieved individuals to file suit against polluters, either on individual basis or as class action suits, and receive the compensation money;
7. Bangladesh takes steps to ensure the integrity of environmental courts so that public can have faith in them;
8. Bangladesh takes steps to restore the integrity of the Environment Impact Assessment (EIA) exercise, instead of it being just a formality, and often a sham;
9. Bangladesh reduces its current dependence on foreign lending agencies for environment related policy formulation and instead increases its domestic capacity for this purpose, both in the form of in-house expertise at the Directorate of Environment and in the country's research institutions, universities, and organizations;
10. Bangladesh encourages environment related education and research at her educational establishments in order to develop future generations more capable of environment related policy formulation and implementation;
11. Bangladesh arranges proper training of her environment related officials in order to improve the implementation of laws, rules, regulations, and guidelines regarding environment;
12. Bangladesh's ministry and directorate of environment increase their interaction with national environmental organizations and develop an active cooperative mode of operation in order to tackle country's environmental problems and the climate challenge;
13. Bangladesh's ministry and directorate of environment increase their interaction and cooperation with the ministry of planning and other planning institutions of the country.

#### IV. ACTION AT THE COMMUNITY LEVEL

*Being aware that the entire responsibility for protecting Bangladesh environment is not of the Government alone and there are many things that people can do at their community level;*

*Recognizing the complementary nature of pro-environmental efforts at the community level and those at the national level;*

*Noting that communities can play a vital role in monitoring and resisting industrial pollution in their respective localities, resisting degradation and destruction of forests, in cooperating with government initiatives to increase social forestry, to improve collection and disposal of various types of waste, etc.;*

*Observing that creation of scope of bringing class action suits against polluters in environmental courts will increase greatly incentives for community activism with regard to environmental issues;*

*Noting that communities can take up nature conservation projects, in addition to environment protection initiatives;*

It is recommended that

Peoples of all neighborhoods organize themselves with the purpose of protecting the environment of respective areas;

Communities conduct an inventory of the pollution and environmental problems of respective areas and classify them depending on whether these can be solved at the local level through community and local government efforts or their solution requires national government's intervention, and in latter case, of what type;

Communities mobilize themselves to solve the environmental problems that can be solved through local level efforts;

Communities strive to make the local ward offices as focal points for community initiatives and ensure that the physical location and atmosphere of the ward offices meet the image of a 21<sup>st</sup> century democratic and inclusive society;

Communities draw attention of the national government's attention to the problems that require its intervention and join the national movements geared to solution of similar problems across the country;

Communities consider using environmental courts through government inspectors, until the Environmental Court Law is amended to allow communities to file suits directly;

Communities take nature conservation projects, alongside efforts to protect environment.

## V. ACTION AT THE INDIVIDUAL, FAMILY LEVEL

*Noting that the responsibility toward environment begins at the individual level and a lot can be done at the household/family level to protect environment;*

*Observing that imparting pro-environment values to the children and teaching them pro-environment practices can be a great contribution to protection of environment;*

*Noting that individual and household efforts are a key to (i) keep the house and premises clean, (ii) conserve energy, water, and gas, (iii) reduce consumption that is harmful to the environment, (iv) proper disposal of household waste, (v) reduction of indoor air pollution, including keeping it smoke free, (vi) have more green around the house; etc.;*

*Being aware that it is the responsibility of individuals to participate in the community and national level efforts to protect environment;*

*Recognizing the complementarity among pro-environmental efforts at individual, community, and national levels;*

*Realizing that involving the female members of the household in environment protection efforts is the starting point of increasing female participation in protection of environment at the community and national levels;*



It is recommended that

1. Every citizen sets example of pro-environment lifestyle, reducing his or her ecological footprint;
2. Individual takes pro-environmental steps in one's own home and immediate surroundings, involving all members of the household, including females and children, teaches the value and practice of good environment to children, relatives, and friends;
3. Individuals and their family members participate in the community level efforts to protect environment of the locality;

## VI. ORGANIZATIONAL ISSUES AND TASKS

*Recognizing that through its dedicated and continuous work during the past 10 years, BAPA has established itself as a premier civil society organization of the country;*

*Noting that, working together with other pro-environment forces, and persuading the government to take necessary measures, BAPA has been successful in bringing about several important positive changes in Bangladesh environment, including introduction of unleaded gasoline, replacement of gasoline-based TSEVs by CNG-run vehicles, imposition of ban on plastic bags, removal of some river encroaching structures, adoption of the wetlands protection act, introduction of rules regarding urban construction, etc.;*

*Observing that BAPA's dedication and achievements have led to recognition by the people and the government, including Dhaka City Corporation's 2007 Nagar Padak, and inclusion of the BAPA General Secretary in the Bangladesh government's delegation to the 15<sup>th</sup> COP held in Copenhagen held in December, 2009;*

*Noting that since ICBEN 2002, BAPA has made important progress in expanding its influence, activities, and organizational reach to various districts and upazillas of the country, including the remote hills and forests of Sylhet and the interior of the Chalan Beel area of the North Bengal;*

*Noting that since ICBEN 2002, BAPA's work has led to the formation of the Jatiyo Nodi Rokkha Andolon (JNRA), as the umbrella organization for all local river movements that are developing, often spontaneously, in various parts of the country;*

*Observing that under the leadership of BAPA-JNRA, river saving movement is now further spreading in the country, and has led to the formation of the Chalan Beel Rokkha Andolon;*

*Noting that since ICBEN 2002, BAPA's work has led to the formation of the Adibashi Poribesh Rokkha Andolon (APRA) as the united platform for campaign to protect the rights of the Adibashi people and the environment of the areas in which they live, including the hilly forests of the eastern part of the country as well as the plain lands of North Bengal and coastal districts of the country;*

*Observing that under the leadership of BAPA-APRA, a strong movement has developed among the Khasi people of Hobiganj and Moulavi Bazar districts for the protection of forests and Adibashi rights in that area;*

*Noting that BAPA has also expanded its activities in various wards and neighborhoods of the Dhaka city itself and has developed a strong citizens' movement for the protection of rivers around Dhaka and strengthened the Buriganga Bachao Andolon;*

*Observing that there is a tremendous interest among people in the districts to join BAPA, form branches of BAPA, and work with BAPA;*

*Noting that BAPA branches have already been formed in several districts and upazillas of the country, and the process of formation of such branches is progressing in other places;*

*Realizing that nature conservation efforts are closely related with environment protection efforts, and conservation movement and environment movement can benefit from cooperation and synergy;*

It is recommended that

1. BAPA will continue to expand its activities at the district and upazilla level all across the country, so that in near future BAPA can emerge as a strong national organization;
2. BAPA will continue its activities in different wards and neighborhoods of the Dhaka city itself, so that BAPA has a strong organizational base in the capital city;
3. BAPA will continue to reach out to the political parties of the country in order to enlist their support for the environment movement and to urge them to play a leadership role in the struggle against environmental degradation and climate change threat;
4. BAPA will reach out to various mass movements, including movement of workers, women, youth, children, in order to forge a common front against pollution and climate change;
5. BAPA will reach out to various social, cultural, and sports movements, to individual cultural and literary personalities in order to enlist their support for the environment movement;
6. BAPA will strengthen its relationship with the universities of the country, making this relationship into an ongoing one and not limited to organization of conferences only;
7. BAPA will strengthen its relationship with other pro-environment organizations of the country, including non-government organizations, with the goal to build and strengthen the common front against environmental degradation and climate change;
8. BAPA will continue its engagement with the government, in particular the Ministry for Environment and Forests and the Directorate of Environment and all the physical planning institution, in order to influence and help the government formulate and implement various pro-environment policies.
9. BAPA will pay particular attention to establishing necessary relationship with the media to enlist its support for the protection of the country's environment.

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