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**Church of Bangladesh reflection on Climate Change Impact and Environment degradation
and response of Church of Bangladesh social Dev. program.**

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Introduction

Bangladesh is identified as a high risk country in the world map to a myriad of natural disasters. Floods, tropical cyclones, tornados, tidal surges, droughts and large scale riverbank erosion etc create repeated havoc and disrupt lives and livelihoods of the majority poor in the disaster vulnerable areas. Bangladesh has passed through some of the worst floods and cyclones in record history of mankind. In 1970 super cyclone that washed away 330.000 people overnight. In 1991 cyclone that perished 138,000 people, 2007 super cyclone SIDR killing some 3500 people and causing economic damage in the tune of \$ 4.6 billion; 1987,1988, 1998, 2004 and 2007 floods devastating the country's economy and pulling the countries development pace backwards. During 2007 Bangladesh had food shortage almost 15 million tones due to SIDR. According to 2011 the population of Bangladesh over 160 million spread over 1, 55,000 square km with 710 km long costal belt and historically the costal line has been undergoing erosion and deposition.

Impacts of Environmental Degradation and Climate Changes:

Bangladesh is also one of the countries, most at risk from the impact of climate change (IPCC fourth assessment report, 2007), therefore it is likely that both acute (such as flooding or cyclonic events) and chronic hazards (such as drought sea level rise and saline intrusion) will increase in frequency and severity in the coming decades.

Environmental hazards and climate impact raised vulnerability profile at a much higher level adding increased disaster risk in terms of severity and frequency and sea level rise and encroaching new lands with salinity is likely to turn a huge costal community into climate refugees. Poverty caused by natural and human induced factors, increase the vulnerability of resource poor people living in the most vulnerable plains of the world. The impact of climate change already started effecting food production and posing threat to food security; along with this new vector borne (Dengue and Malaria) diseases and scarcity of drinking water is increasing especially in the coastal belt. Recent research in Bangladesh it is revealed that most of the pregnant women in the costal belt due to consumption of saline water suffering from hypertension and giving birth of male nourished and immature babies and increasing the risk of disabilities. Bangladesh is having double headed problem with water “it is a problem of too little and too much” – prolonged flood and less water for drinking purpose? Pressure on the people of the plain will increase to resettle the communities uprooted from costal belt as an effect of climate changes hazards and the possibilities of conflict will be on increase with the minority ethnics groups living on the plain. More conflict will start in the Chittagong hill tracts region as these (1/10 of the total countries land) areas belongs to tribal adivasi and already many Bengali communities has occupied there lands. The looming threat and visible realities of displacements of the costal communities would definitely trigger this towards severity.

In terms of the impact of climate change few places in the world will experience the range of effects and the severity of changes that will occur in Bangladesh, which will include: Average weather temperatures rising; more extreme hot and cold spells; rainfall being less when it is most needed for agriculture, yet more in the monsoon when it already causes floods; melting of glaciers in the source areas of Bangladesh's rivers altering the hydrological cycle; more powerful tornados and cyclones; and sea level rise displacing communities, turning freshwater saline and facilitating more powerful storm surges. The impact will be intensified by the fact that Bangladesh is both one of the most populated and one of the poorest nations on earth. Adivasis (ethnic minorities), religious minorities, women, children, disabled people and the poorest-of-the-poor people being the most. It is very important notice that the seasons already has changed; there is no more spring exist. The summer is prolonged to five months and winter and rainy season is visible and unpredictable which are having direct effect on food production and health hazards and increasing scarcity of pure drinking water.

Currently, about 6.0 million people are already exposed to high salinity (>5 ppt), but due to climate change this is expected to increase to 13.6 million in year 2050 and 14.8 million in 2080 and the population in Khulna, Satkhira and Bagerhat will be most affected (Mohal & Hossain, 2007)

Emission rate in Bangladesh 0.3 tones per persons yearly only but one of the hardest hit country of the impact of climate change due to the economic supremacy and lust of wealth of some western and Asian counties of the world. Up till now this period about 2.7 million hectares of land in Bangladesh are vulnerable to annual drought Reductions in yield could potentially be as high as a 17-28% decline for rice and 31-68% decline in wheat production (Karim *et al*, 1999). So 8% smaller rice harvests and a 32% smaller wheat harvests by 2050 now look likely (IPCC in Reid *et al*, 2007).

Conservative studies show that Bangladesh is to loose between 17,000 and 22,000 SQR kms of land, nearly one third of the country in the southern part due to sea level rise of 1-1.5 meter by 2050.

Bangladesh has been ranked as the 3rd most vulnerable in the world to sea level rise in terms of the number of people and in the top ten in terms of percentage of population living in the low elevation coastal zone. Therefore the threat of the communities being forced away due to the effects of climate change is one of the most severe on earth (McGranahan *et al*, 2006). Currently almost 40 million live in the coastal areas of Bangladesh but depending on the rate of population growth, by 2080 when the situation begins to get more serious it could be between 51-97 million in this vulnerable area.

In year 2050 assuming a sea level rise of 27 cm, around 26 million people will be at a low risk and almost 7 million will be at medium risk of flooding, of which 58% of these people will be from Khulna, Jhalokati, Barisal and Bagerhat districts. In year 2080 assuming a sea level rise of 62 cm, 17 million, 12 million and 14 million people are expected to be at low, medium and high risk respectively, of being permanently flooded by the sea (Mohal & Hossain, 2007). Along side continuous high rate of population growth and the threat of internal displacement of communities is looming sever problem for Bangladesh.

The total length of the Bangladesh coastline is 710 km long (Mohal *et al*, 2006) and historically, the coastline has been undergoing erosion and deposition. However, the balance between the two is being affected by climate change, such as more powerful cyclones and a higher sea level; with the result that more erosion is likely to occur but less deposition of sediments. As a result for a 2 cm rise in sea level the coast may go back 2-3 meters a year or 80-120 meters by the year 2030, which means Cox's Bazar beach the longest in the world will completely disappear (Islam,

1994). In terms of area this means that 5,800 hectares of land could be lost to sea erosion by 2030 and 11,200 hectares by 2075, together with 13,750 tons of food grain production by 2030 and 252,000 tons of food grain production by 2075 (Islam *et al*, 1999). People will also be displaced, for example the island of Kutubdia, just off the coast of the southern district of Cox's Bazar, has shrunk by half in less than 50 years and is expected to vanish completely in another 70 years due to erosion, partly caused by the 1991 cyclone. 20,000 people from the island have been forced to move to a slum on the mainland and the remaining 150,000 may soon have to join them (Christian Aid, 2006).

Initiative of the government of Bangladesh:

With this backdrop, it was felt necessary by the Disaster Management Bureau of Bangladesh to review and revise the SOD (Standing orders of Disasters) 1999. In order to prepare the SOD under the auspices of the UNISDR, (United Nations International Strategy for Disaster Reduction) has adopted the Hyogo Framework of Action 2005-15, emphasizing disaster risk reduction and strengthening emergency response systems. Bangladesh is a signatory to the framework. Considering the fact that South Asia, with its population of about 1.3 billion, is one of the regions highly exposed to a variety of natural and human-induced hazards which pose a great development challenge for all. SOD has clarified details roles and responsibilities of Ministries, Divisions, Departments, various committees at different level and other organization involved in disaster risk reduction and emergency management.

Apart from this Bangladesh is one of the first countries to developed NAPA (National action plan on Adaptation). A couple of projects are on in relation to forestations and some Tk.700 corer has been set aside to respond climate hazards. One very interesting feature that Red Crescent and Disaster Management bureau of Bangladesh has developed over 50000 (fifty thousand) volunteers who are enthusiastically ready to response any disaster in the costal belt or any part of the country. They need upgrade them with proper and efficient equipment for communication, rescue, first hand food transportation and distribution etc. The knowledge and education on DRR, mitigation and adaptations are the part and parcel of the volunteers training with the realization that without this countries space of development such as food production and economic growth are pulling back which means if the country make a move five step ahead but the increased frequency of the impact of climate changes pulling ten steps behind. On the other hand the booming population growth on this small piece of land has failed to maintain space with the required food production and country in the grief of food insecurity. So the alternative development model before the country is depending on energy and industry and thus to follow western style of economic development.

Response of Church of Bangladesh social Dev program of COB.

Since 1981 CBSDP is quite aware about the environmental degradation and pollution mainly due to use of unscientific use of chemical fertilizers, pesticides and indiscriminate felling of trees for cooking and bricks fields. Beside that, the effluent from over 300 tanneries situated on the bank of rivers of Buriganga and Shitalakha continuously polluting the rivers water. And gradually the country was coming in to the grip of climate effect due to emission of Green House Gas took time to conceive by the majority of the people. The process of desertification, drought, and every year drooping underground water table and prolonged flood and increasing hot and cold wave and over all unpredictable weather and seasonal changes were visible but realization came little late due to shortage of information, knowledge, ignorance and high rate of illiteracy. However CBSDP became conscious to all these changes (although not in full) well in advance

then many others which helped to take and encourage following steps as time passed on with acquiring new knowledge, skills and information's:

- Till to-day over two hundred thousand trees both fruits and timber trees have been planned in different working areas of CBSDP with the purpose of maintaining healthy nature and environment, Sequestrations of Carbon as we chose the pattern of western nature of economic development. Encouraging compost and using local knowledge based pesticide alongside chemical pesticide.
- Distributed relief goods, provided shelters & Tube wells. For preparedness developed over 500 hundreds volunteers who can help during the time of Disaster. Constructed 35 nos .flood shelter.
- For the last four years CBSDP have shifted the approach towards Disaster Risk Reduction, Mitigation & Adaptation and in the process moving towards creating a resilient community.
- In the southern belt (Gopalganj-Barisal-Faridpur-Khulna) CBSDP has started a Project with the Support of TEARFUND-UK where we are trying to mobilize church to go for adaptive measures and in process encompassing the majority from other faiths to join CBSDP's initiative. CBSDP is encouraging priest, catechist, women guilds, youths and religious leaders interested youths from other faiths too.
- Tree plantation remains the main activities. As Environmental degradation and Climate impact is a justice issue CBSDP encouraging network among the Tear fund partners Churches and connecting with other secular net work so that a strong advocacy and lobbying can be started from the grass root level to national level. CBSDP is the member of ACT-ALLIANCE and SOUTH ASIAN CLIMATE ACTION net work.
- Rt. Rev. Bishop Sarker, Rev. Haman Halder and Mr. Timothy Biswas participated at the South Asian Head of Protestant Churches Meeting held in Ladhak, in India 2009. Where we advocated for stooping the courses of rivers by construct ting dams in India side as most of the rivers originated in India and flowing through Bangladesh. Due to changing rivers' natural echo system and continuously raising of river bed due to sedimentation Bangladesh is facing prolonged flood, flash flood, drought and silent disaster of steady river erosion . All are these Human induced hazards that creating vulnerability and disaster. We can not call it a direct impact of climate change but its intensity and severity is increasing due to impact of climate change..
- Rt. Rev. Bishop Baroi and the Present Moderator Rt. Rev. P.S. Sarker also has spoken in favor of climate justice and the fate of poor and badly affected countries in the assemblies of Church of Scotland and preached in different churches during last Lambeth Conference in UK.
- St. Andrews Theology college of Church of Bangladesh although not yet able to include subject related to climate but giving education on basic ecology. National churches council of India is trying include environment and climate issue a compulsory subject for their colleges and later on St. Andrews may follow that course. Now they have started a weekly bible study on the history of creation and disseminating awareness and mitigation knowledge in relation to climate impact and their possible response to this issue. Along side evolving strategy to work with the people of different faiths and other ecumenical bodies in relation to climate issues and HIV/AIDS, trafficking etc. In 2010 St. Andrews College

organized a two days seminar in collaboration with Tearfund, and Christian College of Theology (CCTB) in Bangladesh on the issue of Environmental degradation and the impact of Climate Change. Mr. James Pander one of the COB's mission partners spoke on this occasion as a part of our advocacy activities. St. Andrews using EFFICOR material from India.

- Developing nurseries, encouraging floating garden, Kitchen garden, drip irrigation vegetables, Sack vegetables, wild vegetables, Medicinal plant, Rain water harvesting and drought tolerant crops. Hanging vegetables, Crab fattening, Bee keeping and honey processing (Apiculture)

(Grass cultivation, keora nursery & Mele (Reed) cultivation, Embankment cropping – Adaptation to salinity and flooding and drought) These are being done by the other partner of the net work.

- CBSDP is trying to improve the knowledge and skills of existing staff members & volunteers and also trying to multiplying the numbers of the volunteers so that they can link themselves with the Government machinery right from the grass root level which is Disaster Management Bureau (DMB) of the Government of Bangladesh responsible for Disaster and Climate issue.
- CBSDP has trained a good numbers of staff on the strategy and technique of Advocacy, CEDRA (Climate Change and Environmental Degradation Risk and Adaptation assessments) & EA (Environmental Assessment).
- CBSDP has introduced fuel efficient smokeless stove, Bio-gas plant, and solar energy among the communities as alternative sources of energy.
- Constructing houses, latrine and tube wells on raised lands maintaining the height of the last upsurge of sea water.

Conclusion:

On the present context the emission of green house gas by the industrial countries specially china, India (who wants to justify with per capita population growth), USA, Brazil and Australia etc, on the high rate, the climate issue first needs to be considered as justice issue and for that we need to plan proper advocacy at different level for changing life style of the population causing global warming and same time educating others not to adapt or follow the same western life style and trend of economic development. And the priority should be reducing carbon emission by all who are major contributor for Global warming and severely affecting the innocent's countries.

Recently the step taken by the Australian government to impose carbon taxes is some how encouraging provided those are going to support most affected country's programme for adaptation and helping them to become resilient communities.

St. Paul in his letter to the Romans said that the future glory of Christ's return and a healed and restored earth and humanity can be achieved only in relation to the creation and to the children of God. He says, "All of creation waits with eager longing for God to reveal his children. That creation itself would one day be set free from its slavery to decay and would share the glorious freedom of the children of God. For we know that up to the present time all of creation groans with pain, like the pain of childbirth. But it is not just creation alone which groans; we who have the Spirit as the first of God's gifts also groan within ourselves as we wait for God to make us his children and set our whole being free."(Romans 8:19, 21-23)

From this conference we can pledge for establishing eco-justice committee/commission in all provinces of Anglican Communion (could be done in the priority basis in the countries those are badly affected and who are causing this devastations and destroying our mother earth) and ecumenical organizations and community of faiths to take forward advocacy & lobbying in the light of its theological and spiritual understanding and practices for curbing emission of green house gas. We must work out strategy to educate the people to bring changes in their life living which is causing huge damage to the million of people and mother earth/creation. Along side we must carry forward and support projects and programme of adaptation, mitigation and transfer of technology and funds for building resilient communities in the affected countries.

The Evangelical Environmental Network explains that as Christians we should care about what happens to the poor because God loves them. We care about these projected impacts of global warming because they are a profound challenge to Christian justice and Jesus' call to care for "the least of these" (Matthew. 25:40,45). Pollution that causes the threat of global warming violates Jesus' Great Commandments to "Love the Lord your God with all your heart and with all your soul and with all your mind and with all your strength" and "Love your neighbor as yourself" (Mark. 12:30-31), and the Golden Rule to "Do to others as you would have them do to you" (Luke. 6:31). And Global Warming is a breach of our responsibility to care for God's other creatures (Genesis. 2:15). Failure to act to reduce the impacts of global warming denies Christ's Lordship. We are called to love and protect those with less power, such as the poor, children, the unborn, those yet to be born, and our fellow creatures. Global warming has profound implications for their welfare. Reducing this threat is part of what it must mean today to love God and our neighbors, as Jesus taught us to do'.

In concluding my submission, I would like to share as we celebrate the memory of Jesus, the refugee who experienced the pains and pathos of being a refugee in Egypt can be seen in the life of existing almost 26million climate refuges scattered all over the world and many more to add if justice is denied towards global warming. We realize that the "house of slavery" (our slavery mentality of increasing wealth) could be transformed into the "house of refuge" for Jesus family which inspires our countries and churches to be "home of refugees," This sentiment can be widely circulated among the worldwide churches, civil society movements and partner agencies if it is genuinely internalized and transformed in our action.

Biography of Mr. Timothy Biswas

- Bachelor of Arts from the University of Rajshahi.in 1973
- Diploma on social development in 1981 from St. Fx. University, Antigonish, N.S. Canada 1981.
(Learnt a very important issue; Relation between man and women and Man, women and nature.)
- Worked as the Head of the (Coordinator) Church of Bangladesh Social Dev. program. from 1978 to 1986 (Planted huge numbers of trees to protect the desertification process of the northern and western part of the country and initiated environmental education explaining benefit of trees to the communities and staff. Undertook many relief and Rehabilitation program as the outcome of natural calamities. organized many women's and children's program.
- Participated Development studies course in Selly oak colleges in Birmingham affiliated with Brimming ham University in 1987. Main issue causes of underdevelopment & poverty where we discussed the linkage between environment and agriculture production.
- Worked as the Executive Director (1986 to 1998) of LIFE-BD an organization initiated in the northern part of the country with the participation of the people of different faiths. Worked for educating; rights of the women and children. Established women's group, People's organizations and federations. Developed nurseries for income as well as to protect environment. Participated in the Tree fair at the district level organized by the government and honored with award.
- Worked as an advisor of CBSDP from 1998 to June 2000.

- Worked as Program manger with Synergy foundation a British firm which was engaged for tree plantation on the Chittagong Hill tract region for almost four years from 2000 to 2004. Along side plantation and greening the deforested hills the aim was sequestrations of CO2 to responding global warming; for economic benefits of the indigenous tribal people we introduced intercropping under the growing trees.
- From 2005 to 2009 worked as Training Coordinator under Kushtia Diocese of Church of Bangladesh & from 2007 to 2009 rendered my services as an honorary Diocesan Secretary of Kushtia Diocese of the Church of Bangladesh.
- Attended Anglican Communion refugees net work meeting held in Amman (Jordan) in 1992.
- Attended in 1978 and 1982, 86 & 2005 in development consultation sponsored by Christian Conference of Asia held in Thailand, Philippines & South Korea & Indonesia. Here we discussed the environmental aspect as the core issue of any development efforts due to very first emerging of global warming and rights of the migrant works and peasant communities movement and necessity of using compost and encouraging LIFE- giving agriculture etc. Attended leadership training in Singapore, Hong Kong & Philippines etc.
- Attended in 1994 CCA general assembly held in Sri lank and served for next five years as one of the members of urban rural Mission.
- Participate Churches Coalition meeting of SARC countries under the auspicious of CWM in 2009 in Ladhak, India.
- Led the team for the CWM SARC meeting held in BRAC centre, Dhaka, Bangladesh in September 2008 on the issue of Climate change and scarcity of water.
- Represented Bangladesh the consultation; organized by Regional Christian conference of Asia on the issue of Pathos of the Climate change refugees held in Bangalore, India in 2010 under the Broad theme of Ecology, Economy & accountability considering climate is a Justice issue.
- I have been sharing as the representative of ACEN on behalf of Church of Bangladesh since 2006 -2007.
- Participated full course of Humanitarian Accountability Partnership (HAP) organized in Bangladesh from Switzerland in 2010.
- Attended in a series of training and workshop organized by Tearfund in Bangladesh on CEDRA (Climate Change and Environmental Degradation Risk and Adaptation assessments) & EA (Environmental Assessment) Covering Adaptation, Mitigation DRR. Involved with many networks and doing advocacy in favor of climate justice and transfer of technology and resources for the badly effected countries. Participated Tear fund Quality standard course RELATED TO HUMAN ACCOUNTABILITY & Values based on Biblical teaching.
- In the church organized seminar for different ages and gender of people about Ecology and Environmental Degradation, Climate impact due to use of fossil fuel emission of CO2; the main causes of global warming. Initiated Bible study among the catechist and priest and to make them aware as to what should be the role of the church and congregations in this respect.
- In the theological college orienting the students on the issue of environmental degradation and looking for the possibilities as to how we can carry forward our work with the people of different faiths.
- Consultant of CBSDP for last one and half year assisting Director the reorganization process of CBSDP and helping programs too as and when required. (Started in February 2010.)