



Environmental Degradation & Climate Change Impact in Bangladesh.

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CHURCH OF BANGLADESH SOCIAL DEV. PROGRAMME.

CHURCH OF BANGLADESH.

PRESENTED TO ACEN CONFERENCE IN PERU.

(Held through 3rd August to 11th August)



Bangladesh Facts



- Size of England & Wales
- 254 Rivers
- Independent 1971
- Population 160 million
- $\frac{2}{3}$ work in agriculture
- Exports: Garments, fish, jute goods and leather products
- Life expectancy 64 yrs

Beautiful Bangladesh



Bangladesh, officially the People's Republic of Bangladesh, is a country in South Asia. It is bordered by India on all sides except for a small border with Burma (Myanmar) to the far southeast and by the Bay of Bengal to the south. Together with the Indian state of West Bengal, it makes up the ethno-linguistic region of Bengal.

After heroic liberation war against Pakistan in 1971 Bangladesh became independent.

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Beautiful Bangladesh!



The borders of present-day Bangladesh were established with the partition of Bengal and India in 1947,

Bangladesh is also among the most disaster prone countries in the world.



The name *Bangladesh* means "Country of Bengal" in the official Bengali language.

The present population of the country is 160 millions (2008 a.d.).

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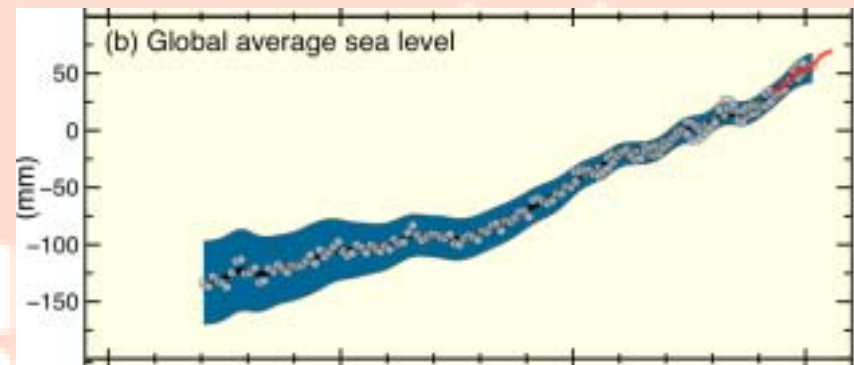
What is Climate Change?

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.



Climate change effects on Glacier / snow melt

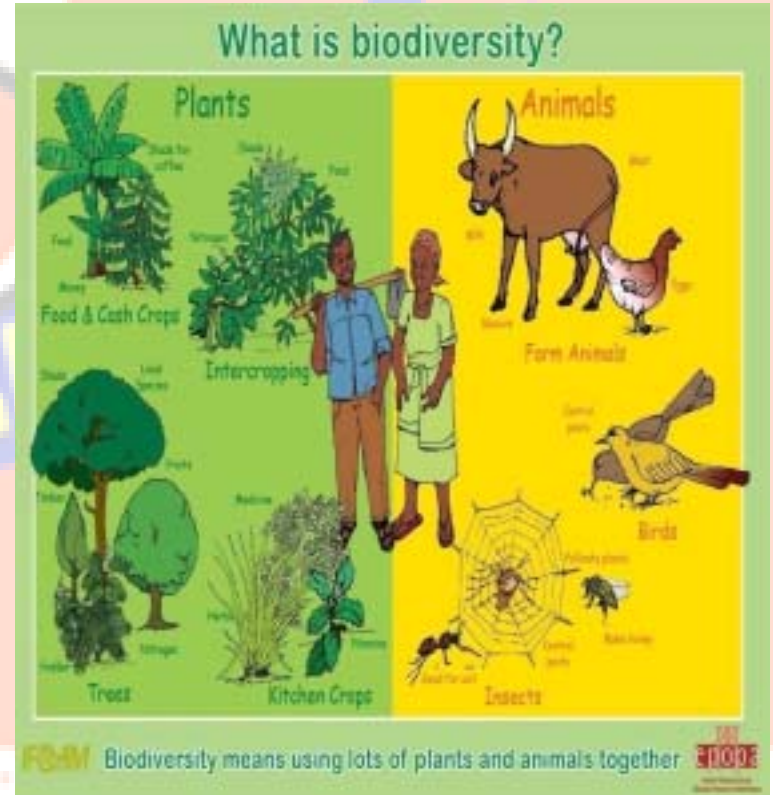
Glaciers in the Himalayas feed many of the rivers coming into Bangladesh. Changes in the melting rate of the glacier will affect Bangladesh



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Bio-Diversity and Climate Change

Bangladesh has a diverse range of forest ecosystems, including savannah, bamboo, freshwater swamp forests and mangroves. The Sundarbans of Bangladesh, a world heritage sight, is the single largest mangrove area in the world, comprising an area of 577,00 ha, and housing one of the richest natural gene pools. A total of 425 species have been identified there, the most notable of which is the Bengal tiger, which is endemic to the area. Climate change will have a detrimental impact on all of the forest ecosystems in Bangladesh, and the Sundarbans are likely to be the worst affected



Bio-Diversity and Climate Change - 2



The changes in temperature and water resources with climate change will result in direct pressure on many climate-sensitive species, and cause increased erosion and deterioration of soil quality in many upland forested areas. Increased rainfall intensity will cause enhanced erosion upstream and cause sedimentation. Saline intrusion is already a major problem in the Sundarbans, however it should be noted that climate change will also cause an increase in freshwater flows from the major distributaries with increased precipitation, and the extent to which this may offset salinity intrusion is uncertain.

The Sundarbans also offer subsistence to around 3.5 million inhabitants who live within and around the forest boundary. The inundation and intruding salinity are interrupting traditional practices in the Sundarbans.

Climate Change effects on temperature in Bangladesh

By 2020 temperature will be 1.2 °C warmer
by 2050 will be 2.4 °C warmer
(Tanner *et al*, 2007)



By 2020 the country will lose land during this period about 2.7 million hectares of land in Bangladesh are vulnerable to annual drought



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Climate change effects on rainfall causing frequent flood



- According to the IPCC Distribution Centre rainfall in South Asia is predicted to increase by 5-7 per cent in the 2020s, 10-13 per cent in the 2050s and 15-26 per cent in the 2080s (Tanner *et al*, 2007).
- variety of different studies all point to average rainfall increasing in Bangladesh during the summer monsoon by around 1-4% by the 2020s, and 2-7% by the 2050s (Tanner *et al*, 2007)

Climate change effects on agriculture



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).

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Climate Change effects on weather



- climate change means that storm surge heights will increase from 15% to 25% in the 2020s and 32% in the 2050s (Tanner *et al*, 2007). A cyclonic storm similar like the one in 1991 would have a surge around a metre higher (Mohal & Hossain, 2007) and would penetrate up to 10 km further inland than at present to almost 50 km in places in a worst case global warming scenario (Tanner *et al*, 2007).

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Climate Change effects on weather

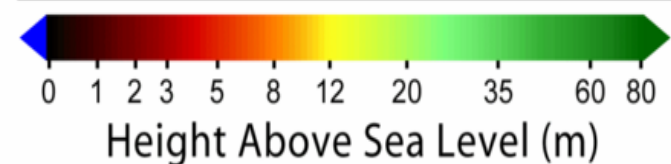
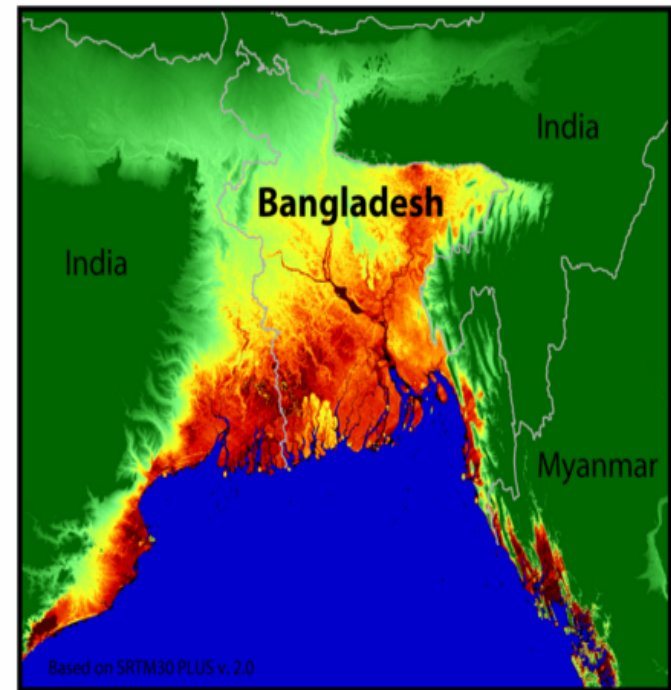
- Cyclones are expected to become 10 to 20% more powerful if sea-surface temperatures rise by of 2 to 4°C in South Asia, therefore the number of devastating cyclones will increase (Knutson and Tuleya, 2004 in Cruz *et al*, 2007).
- Cyclones are expected to have 3% to 12% faster wind speeds by the 2020s, rising to 4% to 20% faster by the 2050s (Tanner *et al*, 2007).



Climate change effects on sea level rising and will force to become climate change internally displaced refugee.

- 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.
- Sea level rise could potentially force around 33 million of their land by 2050 and up to 43 million of their land by 2080 (Mohal & Hossain, 2007) and this is only taking into account the direct effect of sea level flooding.

Sea Level Risks - Bangladesh



Effect of Climate Change : land



Conservative studies show that Bangladesh is to lose 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

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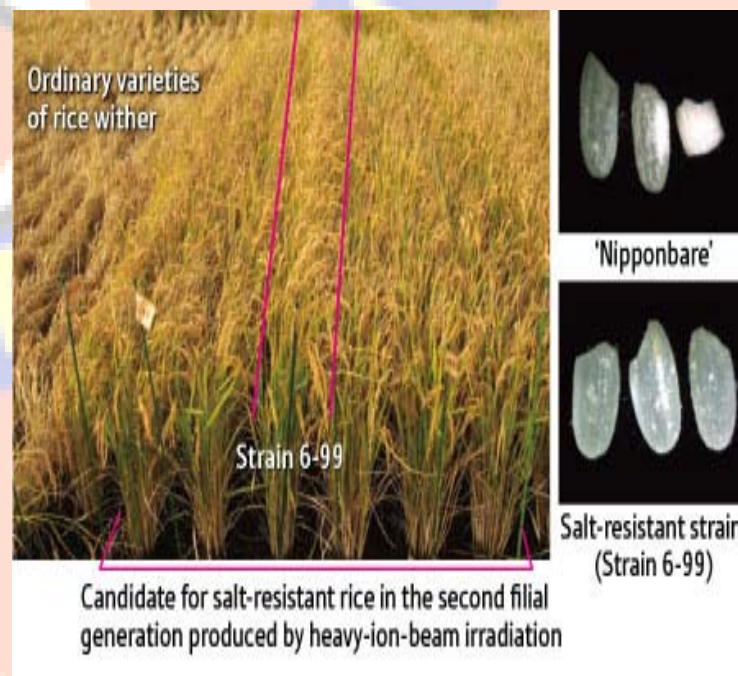
Ethnic minority of Bangladesh And projected conflict with climate change refugees

- **Perceived „empty“ areas like the Chittagong Hilltracts with its Adivasi tribes will appear an attractive solution to a future climate change refugee crisis, despite the small percentage of cultivatable land there. Overpopulation and the political idea of having ethnic Bengalis in border areas, has already led to around 100,000 Adivasi tribes people being forced off their land to make way for the resettlement of 400,000 Bengalis in the hills and has already reduced the percentage of Adivasis in the Hilltracts to only just over half (Mohsin, 2000). Similar policies and processes have led to the loss of ancestral land by other ethnic minorities such as the Adivasis like the Santal and Oraon in the north-west of whom 85% are now landless (Gain, 2005b).**

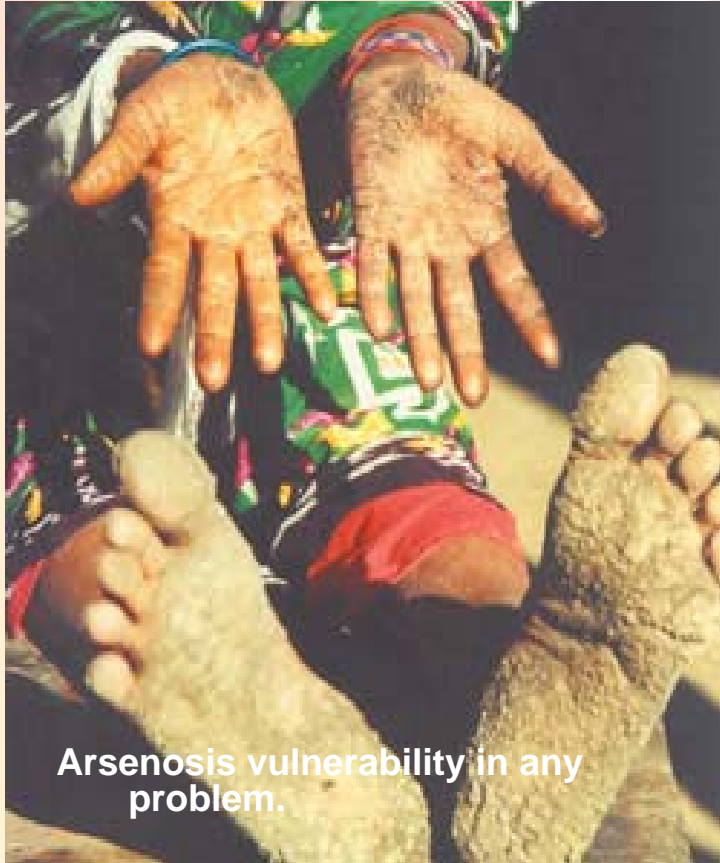


Effect on Rice Cultivation

- 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)



Climate change effects on health



Arsenosis vulnerability in any problem.

Climate Change exposes Bangladesh to more tropical diseases

The Health impacts from climate change would be far reaching in the country with more people suffering from water borne diseases. It might be in jeopardy in near future.

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Action by Church of Bangladesh: Advocacy

It would be a serious catastrophe for my country and for the whole region if much of the land in Bangladesh disappears under the sea. I become frightened to think that my grandchildren will have no place to live on this planet earth. I really want to be sure that they, and their children after them, will be able to enjoy the beauty of my country that I have enjoyed, and be able to have enough land to live and enough land for food".
(Bishop Michael S. Baroi)



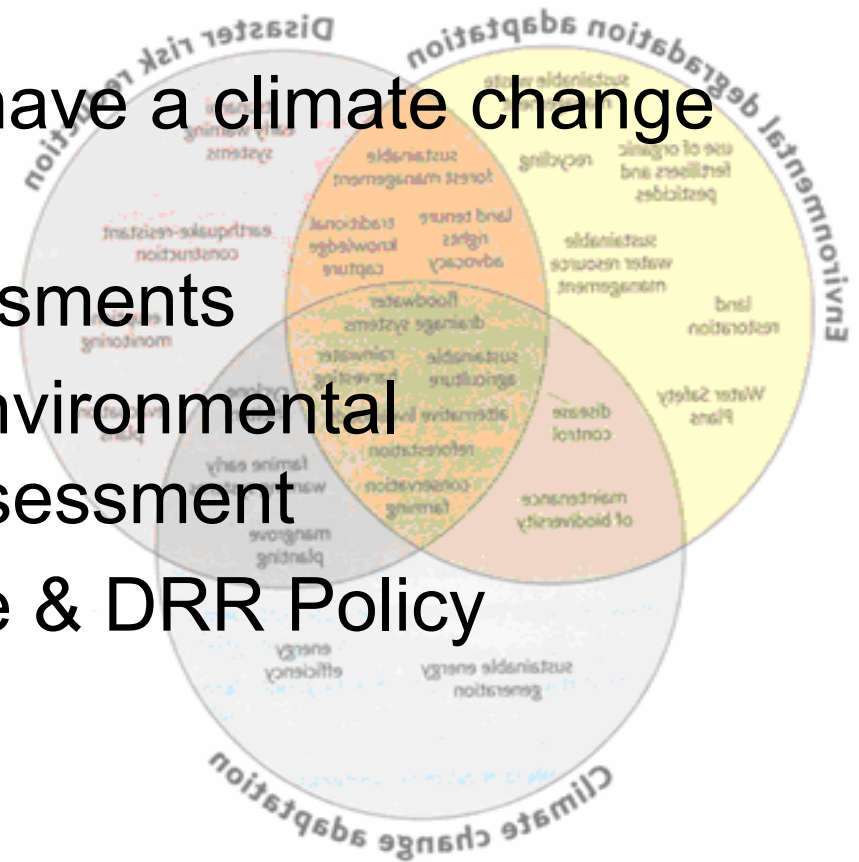
Action by Church of Bangladesh: Advocacy

Faith in God helps us to understand our responsibility to take care of the creation and the people of this wonderful earth as stewards. We are living in a planet that can't be compartmentalized. We are one human family living together in God's world, for we not only depend on each other but also learn from each other. Thus to protect this planet from destruction we need to take necessary and bold action together as one international family without delay! ". (Bishop Paul S. Sarker)



Action by Church of Bangladesh: Mainstreaming

- All our projects now have a climate change component
- Environmental Assessments
- Climate Change & Environmental Degradation Risk Assessment
- Draft Climate Change & DRR Policy



Action by Church of Bangladesh: Tree Planting

- 67.5 km roadside plantation
- household trees over one hundred thousand.



Action by Church of Bangladesh: Adaptation to a dryer climate

- Bottle-drip irrigation
- Polybag gardening
- composting
- wild vegetable cultivation
- Medicinal plant.



Action by Church of Bangladesh: Adaptation to more floods

- Floating gardens
- flood/cyclone shelters
- raised tube wells
- Disaster Management Committees
- Outreach to non-Christians through sharing climate change/DRR awareness



Action by Church of Bangladesh: Adaptation to higher salinity

- rainwater harvesting
- flood/cyclone shelters
- alternative livelihoods
- raised bed gardening
- Disaster Management Committees





Action by Church of Bangladesh: (Theology)

- CWM Sarc conference, in Bangladesh
- Restoring Creation Conference
- Catechist training for all parishes of Bangladesh
- Creating awareness among congregations.
- Theological college doing study on ecology and climate change and exploring possibilities to work with people of different faiths.
- South Asian Church Coalition Meeting around environment and climate impact, Ladhak, India.
- Church initiating dialogue individually and through NCCB to work with communities of faiths on the issue of Environment, global warming and impact of climate Changes.



Can we Church stand together Like most obedient
& the faithful - **JOB** ?

"When I went to the gate of the city and took my seat in the public square, the young men saw me and stepped aside and the old men rose to their feet; the chief men refrained from speaking and covered their mouths with their hands; the voices of the nobles were hushed, and their tongues stuck to the roof of their mouths. Whoever heard me spoke well of me, and those who saw me commended me, because I rescued the poor who cried for help, and the fatherless who had none to assist him. The man who was dying blessed me; I made the widow's heart sing. I put on righteousness as my clothing; justice was my robe and my turban. I was eyes to the blind and feet to the lame. I was a father to the needy; I took up the case of the stranger. I broke the fangs of the wicked and snatched the victims from their teeth.

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Job 29 : 7-17



Any question or comment please

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THANK

YOU

MUCH!

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