

GOBESHONA 4

8 - 11 January 2018

Building local climate knowledge

Proceedings of the 4th Gobeshona Annual Conference on Climate Change Research in Bangladesh



This proceeding is based upon the sessions of the Gobeshona4 Conference. It has been compiled from the rapporteurs notes and events details. The publication is a summary from the organizer's point of view, and does not necessarily express the views of each individual participant.

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Conference Summary

The 4th Gobeshona Annual Conference for Research on Climate Change in Bangladesh successfully held on 8-11 January 2018. The conference was branded as “Gobeshona4”. It was divided into 2 sections: (1) Local Solutions and (2) Science Policy Dialogues with the theme “Building Local Climate Knowledge”.

The initiator of Gobeshona, Dr. Saleemul Huq inaugurated the conference at the auditorium of Independent University, Bangladesh (IUB). Throughout the conference, seven international keynote speakers presented their valuable views; four hundred and four (404) participants attended several sessions and discussed how to solve the impacts of climate change in Bangladesh.

Gobeshona4 consisted of twenty nine (29) sessions presenting forty-five (45) research papers. Each researcher had mentioned at-least one solution to a particular problem related to a local vulnerable area. They also mentioned the target beneficiaries of their research findings along with the target agencies who could possibly implement their given solutions.

Twenty-five organisations from the Gobeshona Steering Committee and four guest-institutions together contributed in organising this big event. Most of the participants represented the academia (47%) whereas the second largest group was the practitioners’ community (22%) with a significant number of international participants (15%) from ten different countries.

The webpage www.gobeshona.net/gobeshona4 had linked all the presentations, official photo album, videos and media articles related with Gobeshona4.

Like the previous years, there were participants coming from least developed countries universities to strengthen the South-South cooperation and share learning.

In the inaugural, Dr. Saleemul Huq updated the commitments Gobeshona made in the previous year, and he concluded the conference with a new set of commitments. There was an opening dinner engaging the participants in the first evening where the Gobeshona research-publishing fellows also got awarded.

The conference added two (2) video sessions as a tool for research dissemination. The intension was to inspire researchers in making short films with core messages and planning how to reach-out the target audience in order to make research into use.

The conference successfully ended on the 11th of January with the Science Policy Dialogue. The primary goal was to bring together global climate change professionals from around Bangladesh and the world in order to have an open dialogue to discuss the key climate change issues, develop possible strategies and strengthen the knowledge sharing platform. Gobeshona Team got positive comments and suggestions to make future conferences even more successful.

The Programme

DAY 1 – MONDAY, 08 JANUARY 2018 – DRY BARIND			
09:30-11:00	SESSION 1: INAUGURAL		
11:00-11:10	Inaugural Group Photo		
11:20-11:30	TEA BREAK	REGISTRATION for the participants of GOBESHONA 4	
11:30-12:50	Session 2: Plenary: Gobeshona Experience by ICCCAD		
12:50-13:50	LUNCH BREAK		
13:50-15:10	Session 3: Parallel: Agriculture and Food Security by CCDB	Session 4: Parallel: Health & Migration by ICDDR,B & IOM	Session 5: Parallel: Sustainable Growth By Adam Smith, EDGG;
15:10-15:40	TEA BREAK		
15:40-17:00	Session 6: Plenary: Dry Barind Areas by ICCCAD		
18:30-21:30	Opening Dinner and Gobeshona Young Researcher Fellows Certificate Award		
DAY 2 – TUESDAY, 09 JANUARY 2018 – WATER RESOURCES			
9:00 – 9:30	REGISTRATION		
9:30-10:00	Session 7: International Keynote by University of Manitoba.		
10:00-11:20	Session 8: Coastal (Vulnerable Area) by Christian Aid & ULAB.		
11:20-11:50	TEA BREAK		
11:50-13:10	Session 9: Parallel: Mitigation & Gender by BISR, Christian Aid & Oxfam	Session 10: Parallel: Urban & Modelling by Wageningen, ICCCAD, Practical Action & Islamic Relief	Session 11: Parallel: Resilient Livelihood by Oxfam, Christian Aid & Islamic Relief;
13:10-14:10	LUNCH BREAK		
14:10-15:30	Session 12: Parallel: Adaptation Technology by CCDB.	Session 13: Parallel: Disability by Maria Kett	Session 14: Parallel: Video as a Research Tool by ICCCAD
15:30-16:00	TEA BREAK		
16:00-17:20	Session 15: Plenary: River & Haor (Vulnerable Areas) by UIU & Jahangirnagar University		
DAY 3 – WEDNESDAY, 10 JANUARY 2018 – FOREST & HILLS			
9:00 – 10:00	Session 16: Plenary: International Keynote by John Furlow		
10:00-11:20	Session 17: Plenary: Forest & Hills (Vulnerable Areas)		
11:20-11:50	TEA BREAK		
11:50-13:10	Session 18: Parallel: Disaster Management by UIU IR, Jagannath & Jahangirnagar University	Session 19: Parallel: Ecosystem & Loss And Damage by ICCCAD, ULAB, JU & IR.	Session 20: Parallel: Renewable Energy by Gobeshona Renewable Subgroup
13:10-14:10	LUNCH BREAK		
14:10-15:30	Session 21: Parallel: NRM by FHRC	Session 22: Parallel: Climate Services by CIMMYT	Session 23: Parallel: Videos on climate Awareness, Mitigation & Justice by IRRI
15:30-16:00	TEA BREAK		
16:00-17:20	Session 24: Plenary: Least Developed Countries University Consortium on Climate Change by ICCCAD, Practical Action & Islamic Relief		
DAY 4 – THURSDAY, 11 JANUARY 2017 – SCIENCE POLICY DIALOGUE DAY			
9:30 – 10:20	Session 25: Plenary: SDG 13 by ICCCAD		
10:20-10:40	TEA BREAK		
10:40-11:30	Session 26: Plenary: Climate Finance by BCAS		
11:30- 12:20	Session 27: Plenary: Integrated Assessment in Deltas by DECCMA – Project, IWFM & BUET		
12:20-13:10	Session 28: Green Growth by Adam Smith, EDGG		
13:10-14:10	LUNCH BREAK		
14:10-15:00	Session 29: Plenary: National Climate Risk Assessment by MoEF, GIZ/Wageningen University & Research		
15:00-15:30	TEA BREAK		
15:30-17:00	Session 30: Plenary: Concluding Session		
17:00-17:30	TEA & NETWORKING		

Updates from Last Year's Commitments



Figure: Dr. Saleemul Huq updating last year's commitments

During the inaugural session, Dr. Saleemul Huq explained the different initiatives that arose from the third Gobeshona conference, and described what progress had been made. Those included:

1. LDC University Consortium on Climate Change (LUCCC): The idea of LUCCC was first unveiled at COP22 to build-up the long-term institutional capacity. It was found that universities are responsible institutions to build up the capacity and universities are proactively doing this job for centuries. Therefore, at Gobeshona3 several least developed countries' university formed LUCCC. At Gobeshona4, Dr. Saleemul Huq updated that 12

universities from the South has official become member of this consortium.

2. University Network on Climate Capacity (UNCC): UNCC was an open network of any university and think tank organisations. UNCC has two secretariats: Oregon State University and the Independent University, Bangladesh and was in the process of developing a working strategy and finalizing a steering committee.

3. National Mechanism on Loss and Damage: Scoping study was conducted in 2016 and has since been shared with the government. The government has in principle agreed to carrying a mechanism forward.

4. Climate Finance Transparency Initiative: This was initiated in January 2017 and is being implemented by a consortium which includes the International Centre for Climate Change and Development (ICCCAD), the Bangladesh Centre for Advanced Studies (BCAS), and Centre for Climate Change and Environmental Research (C3ER) from BRAC University in association with the British Council.

5. Research project on climate change and disability: Project between ICCCAD and CSID, which conducted field work in both Kenya and Bangladesh during 2017. The Leonard Cheshire Disability of the University College London (UCL) would be presenting a special session at Gobeshona4 to update the research findings.

Gobeshona4 New Commitments



Figure: Dr. Saleemul Huq announcing the commitment of Gobeshona4

During the Concluding session, Dr. Saleemul Huq presented the commitments for the next one year. Those were:

1. Reaching outside Dhaka to different Climate vulnerable zones of Bangladesh

For 2018:

- Barind Tract (drought prone zone): started in 2017 with Rajshahi University and Barind Multipurpose Development Authority (BMDA)
- South west zone , including Sundarbans (salinity intrusion and coastal floods and Cyclones) - with Khulna University
- Haor basin (flash floods): with Shahjalal University
- Other zones will be taken up later in phases

2. Gobeshona group on Communicating Research

- Including video and other visual tools
- Media outreach and capacity building
- Radio
- Social media

3. Developing a Green Growth Research and Action programme

- Focus on private sector actors
- Looking at funding Incentives
- Both mitigation as well as adaptation
- Develop a prize for best initiatives

4. Develop a Gobeshona Climate Services Academy

- Initial support for Columbia University and CIMMYT
- Include Bangladesh Meteorological Department (BMD)
- Department of Agriculture Extension(DAE)
- Krishi Gobeshona Foundation (KGF)
- Others to join

5. Youth Leadership Programme in Bangladesh, South Asia and Least Developed Countries (LDCs)

- Bangladesh under Gobeshona
- South Asia with Climate Action Network South Asia (CANSAs)
- LDCs with the LDC Universities Consortium on Climate change (LUCCC)
- Focus on innovative solutions to tackle climate change through a competition.
- Winners of the Competition will come to Gobeshona 5 next year for an award ceremony

Inauguration of Gobeshona4



Figure: The inaugural panel of Gobeshona4 Conference

Chair: Prof. M Omar Rahman, Vice Chancellor, IUB
Keynote: Dr. Alice Baillat Elsa Helene, PhD in Political Science and International Relations, IRIS
Special guests: Ms. Kerry Reeves, Deputy Director-Environment, USAID
Speakers: Dr. Atiq Rahman, Executive Director, BCAS
Dr. Saleemul Huq, Director, ICCCAD

Dr. Saleemul Huq officially inaugurated the 4th Gobeshona Annual Conference for research on climate change in Bangladesh. He began his opening speech by introducing the Gobeshona programme, explaining how it brings together scientists, researchers, implementers and policymakers. He described each of the components of the programme; the annual conference, monthly research seminars, Learning Hub Events with government officials, and the youth initiative, including the Gobeshona Young Researcher Programme, which helps young researchers publishing their paper at international peer reviewed journals. There are also now more than 2000 publications archived on the Gobeshona website that focus on climate change and Bangladesh.

Dr. Huq then finished his speech by updating the commitments that arose from the third Gobeshona conference. The updates have been described in the “Follow up of Gobeshona3 Commitments” section.

After Dr. Huq sat down, Dr. Atiq Rahman spoke highlighting that climate change was one of the world’s three most research topics; the other two being robotics and genetic engineering. He explained how the world is currently experiencing never-before extreme weather events; from wildfires to cold spells. He then proceeded to specify that the research on climate change in Bangladesh was climate change science research, and not climate science research, which is somewhat different.

He then linked this to the necessity to connect science research to policymakers; and added that the private sector also plays an important role, but their focus is split between people, planet and profit. Afterwards, he noted that ten years ago nobody believed solar energy would be possible, but the solar industry in Bangladesh has since gone to become one of the biggest in the world. He then segued into the fact Bangladesh is also working very hard at achieving the Sustainable Development goals.



Figure: Dr. Saleemul Huq, Dr. Atiq Rahman, Dr. Alice Baillat, Dr. Kerry Reeves and Dr. M. Omar Rahman speaking at the inaugural session

Dr. Atiq Rahman finished his talk by emphasizing the importance of research and advised young researchers to enjoy their work.

Following, Dr. Alice Baillat gave the inaugural keynote presentation on how a weak power like Bangladesh would be able to exert influence at the international climate negotiations.

Dr. Kerry Reeves then got up to speak briefly about the importance of research conferences, and that it was important to network and learn about the latest findings in different fields of research. He

encouraged participants to attend sessions they would usually not go to; and to ask difficult questions. He looked forward to the following week of the conference.



Figure: The inaugural panel of Gobeshona4 Conference

Then the university's Vice Chancellor Dr. M. Omar Rahman discussed the importance of research in the session's closing speech, arguing that research is needed to come up with innovative solutions to the complex problems the world now faces. However, he felt that developing countries lack not only the infrastructure to produce higher quality research, but also a culture of research that generates better academic publications. This is why he stressed the importance of teaching the next generation to think analytically, to ask the right questions and learn how those questions should be addressed. He argued that the current way of teaching researchers in Bangladesh was quite archaic and needed to improve. And while there is a lot of good research work being done in Bangladesh, a lot of it does not make its way to internationally peer-reviewed papers, which is where the research can be globally recognized. He ended by explaining that a lot of the intellectual work in the world was concentrated in a few countries, and countries like Bangladesh should make a greater contribution in the future, which is why he appreciates the Gobeshona programme.

Keynote 1

Dr. Alice Baillat



Dr. Alice Baillat is Research Fellow at IRIS where she works for the new Observatory on Climate and Defence funded by the French ministry of Defence. Her research mostly deals with migratory and security consequences of climate change, and international climate negotiations. She holds a PhD in Political Science and International Relations from Sciences Po Paris. She recently co-authored a chapter on the framing of migration and security issues during the COP21 in the book *Globalising the Climate. COP21 and the Climatisation of Global Debates*, edited by Stefan C. Aykut, Jean Foyer and Edouard Morena (Routledge, 2017).

Dr. Alice Baillat gave the keynote presentation on how a weak power like Bangladesh is able to exert influence at the international climate negotiations. She explained that Bangladesh has been able to use its dual identities as both one of the most vulnerable countries to climate change as well as a champion of adaptation to pull leverage at the international level. Furthermore, since Bangladesh was one of the first countries to enact a comprehensive adaptation strategy, as well as create a domestic fund earmarked particularly for adaptation, the country has 'first mover advantage' at the international stage. The country has also been able to draw on its climate experts to gain a better understanding of the issues at stake at the talks. Two strategies countries like Bangladesh can use in the international climate talks are moral leadership and coalition building. Moral leadership arises from the fact the poor countries often will be the foremost victims of climate change, but contributed very little to the problem. Whereas coalition building allows poor countries to pull their resources together and fight for a common platform. One example she gave is Climate Vulnerable Forum, a coalition of the most vulnerable countries to climate change, that successfully campaigned for the inclusion of the 1.5C goal in the Paris Agreement. However, as they countries are still weak, international climate negotiations are still ultimately determined by stronger players. Nevertheless, using these strategies, Bangladesh has shown it is not a passive victim, but a key player in the fight against climate change.

Keynote 2

Dr. C. Emdad Haque



Dr. C. Emdad Haque is a Professor of Natural Resources Institute at University of Manitoba in Canada. Dr. Haque's primary academic interest is to explore into the various facets of, and processes in the nature and society interface. His background is in the area of resource and environmental management, with concentrations in environmental risk assessment, hazard and disaster management, and water resource management. Dr. Haque offers courses in these areas by linking them to his experience in Manitoba and other parts of Canada, and many other countries of the world.

Dr. C. Emdad Haque presented the topic of “Relationships between extreme weather events and climate change, and their policy implications”.

He started his presentation with the recent irregular weather pattern and mentioned about the extreme events in 2017 and their effects. He talked about massive floods across India, Bangladesh, and Nepal which caused huge life loss, destruction of homes and damaged properties, Hurricane Irma destroyed the northern Caribbean and Florida and Hurricane Harvey caused catastrophic flooding across Texas in USA. Some scientists and then media claimed that they are related to climate change. If the global trends of temperature continue, then it is showing the increasing pattern but to find out the exact correlation, the causal link identification is necessary.

He raised three research questions about the connection between science and policy. He stated the first question as a highly debated one: whether climate change “causes” a given extreme weather event. Extreme weather events are causally linked with complex multiple factors. Natural variability cycles will happen, but global warming will continue in one direction such that its contribution to risk will reliably increase over time. It is figured out that the human induced emission and global warming more than doubled the risk.

The second question referred to the measurement of how much climate change (including human-induced or anthropogenic factors) “attributed” to an extreme weather event? Attribution can be done by variety of approaches. Researches showed that small increases in intensity will cause greater damage. Some events have a link to anthropogenic factors of climate change, some do not, and some cannot be explained. There are two major schools of thoughts of event attribution. The “Oxford” School

quantifies the change in probability of an extreme event of a particular observed magnitude caused by the human alteration of the climate system; and the “Boulder” School examines the human-induced change in magnitude of an extreme event.

Then he raised the third key research question on what policy-makers need to consider from science and learning regarding the above two questions. When the international papers are being reviewed, two-thirds of the papers have found some linkage of climate change impact and severity of an individual extreme weather event. Hence, measuring the attribution is hard and not every event is linked with climate change. The quality of the observational record, the ability of models to simulate the event, and our understanding of the physical processes that drive the event and how they are being impacted by climate change will enhance the confidence in results, while carrying out an attribution analysis. We have to measure climate change attribution for international negotiation. The Consortium of the Lower- and Middle Income Countries (LMICs) need to pay serious policy attention to these technical areas as well as local knowledge co-generation and procurement. Cogeneration of scientific and other knowledge from the local level message is needed through development of effective mass communication tools which will bridge the gap between science-policy and its application at the local level.

He concluded the session saying that, science cannot be the only answer, people must be on board. Developing effective mass communication should be given priority and he highlighted the scope of risk communication as an evolving area.

Keynote 3

Mr. John Furlow



John Furlow joined Columbia University’s International Institute for Climate and Society (IRI) in May 2017. As Deputy Director for Humanitarian Assistance and International Development, John works with IRI’s scientists to help apply their research and expertise to decision making in public health, agriculture, infrastructure planning and other vital sectors. John helped launch the Climate Services Partnership in 2011.

Opening up Day 3 of Gobeshona4 conference, John Furlow gave the International Keynote presentation on climate services. Climate services ensure that the best climate science is being communicated to and used by various sectors to develop and evaluate adaptation strategies. On this regard, the services produce, translate, transfer and use climate knowledge and information to support decision-making.

Focusing specifically on adaptation and climate services, he noted that the original conceptions of understanding climate change were focused on what happens when carbon is added to the atmosphere, not what a farmer should do to be more resilient. In order to re-conceptualize adaptation, we have to generate new understandings of climate adaptation by connecting development and adaptation goals

and bringing together all types of actors from the Global North and South. These different actors can bring different mindsets and approaches that allow for innovative thinking on adaptation.

Investing in climate services is a promising avenue for making populations more climate resilient and serving the interests of multiple sectors. Climate services projects have already begun in Madagascar and Jamaica, and have been successful. Now, Columbia University in the United States is working with Bangladesh and other nations to create a “Climate Services Academy” to provide training and convene producers and users of information to build climate resilience.

Keynote 4

Mr. Andy Parker



Mr. Andy Parker is the project director of SRM Governance Initiative. Mr. Parker has a background on climate policy and has worked on solar geo-engineering for over eight years at the Institute for Advanced Sustainability Studies (Germany), the Harvard Kennedy School (USA), and the Royal Society (UK). He was also a member of the UN Convention on Biological Diversity’s expert working group on geo-engineering.

Mr. Andy Parker, project director of SRM Governance Initiative, said solar radiation management (SRM) through geo-engineering should not be considered a solution to climate change; rather, it should be seen as a potential complementary strategy to mitigation and adaptation.

Geo-engineering is the deliberate large-scale intervention in the Earth’s natural systems to counteract climate change.

“SRM geo-engineering could be very helpful or very harmful, but no one yet knows which developing countries should be more centrally involved in research and discussions, as they are more vulnerable to the effects of climate change,” he said.

Mr. Parker also explained how the SRM approach would block out some solar energy in order to lower temperatures and reduce some of the risks associated with global warming.

“Modelling studies of SRM indicate that moderate use could lower global temperatures and reduce disruption to precipitation levels expected from climate change. Research has also indicated that it has the potential to slow sea level rise, although it can’t stop it altogether,” he said, adding that it has also some possible side effects such as disruption of the ozone layer, acid rain and health effects.

If a large amount of SRM cooling were ever stopped suddenly, models indicate there would be a sudden and potentially dangerous rise in temperatures, as SRM only masks the warming from greenhouses, gases, and does not remove them from the atmosphere, he said.

Parker said that a much wider global discussion is needed, especially in developing countries, about SRM research and how it is governed.

Keynote 5 & 6

Mr. Francesco Obino



Francesco Obino is the Head of Programs at the Global Development Network, as well as Fellow, Research Capacity Building & Institutions and Networks. He has eight years of experience in research, publishing and research capacity building in academia, international organisations, international and grassroots NGOs and academic publishing. He has studied and worked in the fields of international politics, political philosophy and international development in Italy, Portugal, the UK, Vietnam and India. His main research interest is the interplay of institutional development and organisational functioning for actors that focus on producing research across the global North and the global South. At GDN, he manages programs on institutional research capacity building and research training strengthening in Asia, Latin America and Africa.

Ms. Arianna Flores Corral



Arianna Flores Corral is the manager at Global Development Network and Fellow on climate change and education for sustainable development. Arianna Flores was born in Mexico City. She has a Bachelor in Political Science at the National Autonomous University of Mexico and a Master Degree on Environmental Management and Technology at Mahidol University in Thailand.

Mr. Francesco Obino and Ms. Arianna Flores Corral presented their international keynote together. They outlined the importance of promoting quality social science research in developing countries, particularly in least developed countries. The Global Development Network (GDN) works to support capacity building within institutions, research, and linking research and policy and as of 2016 had active

programs in over 60 countries. In their work, GDN has found that institutions are overstretched, that they are laboratories of change, and that they are focused on more than funding, also working on mentoring and project management support. It is critical that more social scientists are included in climate change discussions and are incorporated into the IPCC scoping process.

Keynote 7

Dr. Andrew Norton



Andrew Norton is director of IIED. He is an applied anthropologist who works to promote social and environmental justice.

His career spans both research and operational roles in academic and development contexts. He has worked extensively on the social dimensions of climate change, poverty, gender and social analysis, social policy and human rights in development practice.

Andrew has experience of working in Africa, Asia and Latin America.

Dr. Andrew Norton of IIED focused his keynote talk on the role of social science research and climate change action. He stated that he expects to see a more polarized and urgent debate around climate change in 2018. He then pointed out four priority areas for social science research: Improving the record of getting a decent amount of international climate finance to the places that need it most, documenting the social and human impact of climate change, better understanding the distributional impacts of climate change impacts and solutions to those impacts, and tackling the challenge of inclusive and sustainable urban development. Ultimately, he emphasized that we must work on making social science research on climate change count.

Gobeshona Experience: Past, Present & Future



Figure: The core team of Gobeshona

Host: International Centre for Climate Change and Development (ICCCAD)
Chair: Dr. Saleemul Huq, Director, ICCCAD
Presenters: Ms. Tamanna Haque, Coordinator, Gobeshona
Mr. Mohammad Nazmul Chowdhury, Content Manager & Research Officer, Gobeshona
Ms. Zinat Fatima Papia, Research Officer, Gobeshona

“Gobeshona Experience: The Past, Present and Future” was the opening session of the conference where the initiator of the Gobeshona programme and the core team members introduced how this climate change knowledge platform started, where it stands and what would be the next plan. It was a house full session with national and international participants at Independent University, Bangladesh (IUB).

The Gobeshona project officer Ms. Zinat Fatima Papia briefed about its past: what was the primary objective of establishing a climate change knowledge platform? She started from the brainstorming meeting held on climate change knowledge exchange in 2014. The International Centre for Climate Change and Development (ICCCAD) brought together representatives from national and international institutions in Dhaka, Bangladesh. Later in the planning meeting the initial objectives were set to inspire climate change research, to share knowledge and to encourage connectedness.

A network of multi-stakeholders formed the steering committee of Gobeshona based on institutions doing climate change research or interested in implementing research at their working areas.

To share knowledge, Gobeshona started gathering all journal articles on climate change in Bangladesh in an online searchable database. The portal started reaching out all over the world. Gobeshona then organised monthly research seminars. The steering committee members were requested to host one

research seminar based on their work and expertise at their premises. This was the starting of collaborative work among individuals and institutions. The annual conference was the biggest knowledge sharing event where Gobeshona gave the option to host sessions to the platform members. Conference opened climate change knowledge for a wider audience. From the first conference in 2015, Gobeshona attracted many government officials, policymakers and international participants with an increasing trend.

To inspire research on climate change, Gobeshona targeted the young professionals. It offered an annual fellowship for publishing research. The Gobeshona publishing fellows got the opportunity to develop their papers through a series of four workshops and assigned mentor for publishing research at peer reviewed scientific journals. The Gobeshona Young Researcher Project was conceptualized in 2014 to train Bangladeshi young professionals in publishing climate change research papers to peer reviewed journals by analyzing the authors of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). Gobeshona found that Bangladeshi researchers need significant improvement on quality writing and publishing in order to be cited in forthcoming IPCC reports.

The content manager of Gobeshona, Mr. Mohammad Nazmul Chowdhury then highlighted the present stand of Gobeshona. The number of platform members increased up to forty six (46) including government and non-government universities and research institutions, NGOs and international organisations. Collaboration among the the Steering Committee members opened new dimensions of doing research and using research in practice. Gobeshona arranged thirty five (35) interactive research

seminars in Dhaka where the members demonstrated their research findings to interested participants.



Figure: Interaction from the participants

Following the successful first science policy dialogue held at the first Gobeshona conference in January 2015, government officials demanded special capacity building events for them on burning climate change issues. Gobeshona began the Learning Hub Events (LHEs) with interested government ministries and authorities. So far sixteen learning hub events (LHEs) were organised with the General Economic Division (GED), The Economic Relations Division (ERD), The *Local Government Engineering Department* (LGED),

The Sustainable And Renewable Energy Development Authority (SREDA) and The Programming division of Planning Commission. These are ongoing regularly now.

Four batches of Gobeshona Young Researcher Fellows had successfully graduated the fellowship. The status of the last batch is tabulated in the Young Researcher chapter.

The Climate Youth Initiative targeted the young generation with Radio Show, Photo Voice, Youth Retreat and many interesting activities to inspire school-college-going students. Among all, the radio show

‘Amar Desh Amar Jolbayu’ (meaning ‘My Country My Climate’) was the awakening activity which connected Gobeshona with far distant youngsters.

The international academic publisher Springer Nature commissioned Gobeshona to make a book on the existing practices Bangladesh use to tackle climate change. Gobeshona circulated the call for abstract, collected book chapters and integrated into a book in 2015. The book is still under review to be published in hardcopies distributable to academic institutions worldwide.

Gobeshona Steering Committee members had formed four subgroups on adaptation technology, resilient livelihood, information and communication technologies and renewable energy. Interested institutions and individuals can join these subgroups to work together with Gobeshona. Gobeshona Subgroups welcomes not only institutions but also individuals to strengthen the climate resilience.

The coordinator of Gobeshona Ms. Tamanna Haque then shared the next five years plan of Gobeshona. Emphasizing the importance of climate change resilient agriculture, Gobeshona organised a plan with four components.

The first component would deal with capacity buildup of Bangladeshi young researchers. Passionate Bangladeshi youngsters would be eligible to apply for two fellowship opportunities: (i) Publishing Research and (ii) Conducting Research on climate change and agriculture. The call for fellowship would prefer researchers working on the betterment of the most vulnerable communities.

The second component would engage senior scientists in scaling up the best suitable research for selected climate vulnerable zones in Bangladesh.

The third section would develop a mobile application named “Krishani: Products from the climate vulnerable farmers” to introduce a pilot alternative digital market for the farmers cultivating in the climate vulnerable areas.

The Fourth component would be the continuation of the usual activities of the climate change knowledge platform.

Building Local Climate Knowledge

The geographic features of Bangladesh highly demand local area study to adapt with the changing world. Immense amount of water is funneled from the world highest and wettest mountain ranges of Himalayas and Meghalaya flowing over the dynamic floodplain of Bangladesh to the Bay of Bengal. These features influence the rivers, haors, Barind areas, hill tracts, forest and coastal zones with interrelation.

The impacts of Climate Change are different in these vulnerable regions and so are the adaptation technologies. The Gobeshona4 conference emphasized in-depth study of local areas to bring out scientific solutions. To obtain maximum research findings on the most vulnerable areas of Bangladesh, the central theme of Gobeshona4 was “Building Local Climate Knowledge” and four plenary sessions were dedicated on dry Barind zone, rivers and haors, coastal zone, forest and hills.



Plenary Session on Dry Barind Areas

- Host:** Barind Multipurpose Development Authority (BMDA), Ministry of Agriculture, Government of the People's Republic of Bangladesh
- Cohost:** Christian Commission for Development in Bangladesh (CCDB)
- Chair:** Dr. Akram H. Chowdhury, Chairman, BMDA
- Keynote:** Mr. Ilias Hossain; Principal Scientific Officer, Regional Wheat Research Station, BARI
- Presenters:** Mr. Md. Kamruzzaman: Climate Resilient Sustainable Agriculture Options for High Barind Tract in Bangladesh
Mr. Bjoern Ole Sander: Water Saving in Rice Production: Implementation of a Climate-smart Solution
Dr. Md. Ariful Islam: Soil Organic Carbon Sequestration and Greenhouse Gasses Emission as Affected by Tillage and Crop Residue in a Rice-based System of Bangladesh

The session discussed climate smart agricultural techniques that may help in addressing the major challenges of the agricultural sector in the Barind region in Bangladesh. Dr. Akram H. Chowdhury, Chairman, Barind Multipurpose Development Authority (BMDA) chaired the session. Mr. Ilias Hossain from BARI, the keynote speaker of the session, presented a study which demonstrates how climate smart agriculture (CSA) increases agricultural productivity and incomes and reduces GHG emission and

thus help to fight climate change. Mr. Md. Kamruzzaman presented a study jointly conducted with Mr. Abu M Musa which found that Climate Resilient Sustainable Agriculture (CRSA) in high Barind region can significantly reduce water usage and will also reduce GHG emission from the agriculture sector. Mr. Bjoern Ole Sander in his presentation recommended alternate wetting and drying (AWD) method which can reduce water use by up to 30% and may reduce CH₄ emissions by an average of 50% compared to continuous flooding. Dr. Md. Ariful Islam discussed showed how strip planting system and high residue can improve carbon sequestration and also reduce carbon losses through CO₂ emission, and thereby contribute to mitigation and improved soil health and crop yields.



Figure: The Chairman of Barind Multipurpose Development Authority (BMDA) summarizing the session on dry Barind area of Bangladesh.

Dr. Ilias Hossain, in his keynote presentation he demonstrated how CSA can significantly reduce production cost and at the same time assist adapting to climate change. The study, jointly conducted with Dr. Akram Hossain, recommended conservation agriculture (CA) as a CSA practice and showed how CA can address some of the major challenges that the farmers in Barind region are facing like shortages of labor, rising price of labor, declining water tables and uneven distribution of rainfall due to the effects of climate change. According to this study, CA can save up to 32 percent water usage in rice-wheat-mungbean cultivation. This technique can reduce production cost by 50-60 percent. Also, being less diesel intensive, it reduces CO₂ emission.

Md. Kamruzzaman in his study tested six cropping patterns at Saroil, Godagari, Rajshahi. Field experiments were conducted in randomized complete block design with three replications. The study found that CRSA practices can support conservation of scarce water resources as they require no / minimum irrigation. The study also recommended crop diversification and promotion of pulses and oil seeds as a good CSRA option. CRSA practices and sensible use of fertiliser can reduce GHG from agricultural sector.

Björn Ole Sander and Ahmad Salahuddin from International Rice Research Institute presented on 'Water Saving in Rice Production: Implementation of a Climate-smart Solution'. As a climate smart solution, the presenters recommended alternate wetting and drying (AWD) method. AWD can reduce water use by up to 30% and the farmers can save money on irrigation cost. The practice reduces CH₄ emissions by about 50% compared to continuous flooding but does not reduce yields.

Dr. Md. Ariful Islam was the last presenter of the session he mentioned that question that the he tried to address was 'How does SOC sequestration and greenhouse gasses (CO₂) emission affected by

minimum soil disturbance and increased crop residue retention in a rice-based cropping system?' According to the study, strip planting system and high residue improve carbon sequestration and reduce carbon losses, and hence reduce CO₂ emission and improve soil health and crop yields.

Plenary Session on Coastal Areas

Host: Christian Aid
Cohost: University of Liberal Arts Bangladesh (ULAB)
Moderator: Shantunu Kumar Shaha, Assistant Professor, ULAB
Chair: Shakeb Nabi, Country Director, Christian Aid, Bangladesh
Presenters: Mr. Abdur Rahaman: Climatic Depreciation, Changing Rural Socio-Ecological and Cultural Landscape: A Resilient Development Philosophy? Lessons from Southern Delta
Ms. Sonia Akter: Information, Risk Perception and Climate Change Adaptation: Evidence From a Randomized Experiment
Dr. Timothy J. Krupnik: Climate Change Skepticism and Index Versus Standard Crop Insurance Demand in Coastal Bangladesh



Figure: The panel of the Coastal vulnerable area session

Dr. Timothy J. Krupnik was the first presenter of the day, he started the talk with a remark on agricultural investment; according to him low purchase in agriculture might result in low production. If the production goes down it will definitely affect food security. For additional factors in food insecurity natural disasters like flooding, extreme rainfall and cyclones will be there. Two different types of crop insurance currently exist. One is traditional insurance, if the crop is being damaged, somebody will come to see the farm and the payment will be based on physical verification. Another one is Weather Index Insurance (WII) where losses in crop is measured relating to different climatic events, and also people who have experienced crop damage due to that events will get the insurance. Though the index based insurance is transparent to some extent, it is hard to measure. To do research and to identify the trigger level data is need of time.

He also mentioned about a case study on maize cultivation in Bangladesh. As maize get considered rapidly expanding crop with high profit but there is high risk also associate with it. The study has been

done with 120 recently adopting maize farmers in Bhola district. The intention of the study was to investigate the reality, weather the climate skepticism, maize farmer's understand index versus standard insurance or else.

In results it has been found that the wealthier households are more interested in insurance than poor. Climate science educational programs may boost farmers' understanding and demand for insurance.



Figure: The interactive session of the conference tries to bring out consensus in a participatory manner.

Sonia Akter, the second presenter discussed about the connection between risk perception and climate change attribution. Climate change risk perception is an important determinant for climate change adaptation. The research was mainly based on the hypothesis, the lack of concern about the negative impacts of climate change acts as a barrier to adaptation and low risk perception happens due to lack of information access. The experimental analysis of the study was done in Barguna. She concluded her presentation saying that the exposure to proper information can shift risk perceptions about climate change and thus information is needed to raise the awareness and enhance the capacity

M. Abdur Rahaman Rana, the third and last presenter initiated his talk saying that southern delta of Bangladesh is connected with a variety of climate induced deprecation. And many socioeconomic dimensions are associated with it. As rural economic custom, Socioecological and cultural landscape of the rural economy are changing, the hypothetical philosophy was adopting resilience interventions is best philosophy towards resilient rural microcosm. Multi-dimensional strategic methods have been followed and adopted while conducting the study. Participatory Vulnerability Assessment (PVA) tool has been used, the Soil, Water, Agriculture & Climate (SWAC) Model, and land use planning. Hatiya Island in Noakhali district was chosen as the study site.

In the conclusion he mentioned that the proposed local solution was to establish resilient information centre which will link the centre with the SWAC models and it will help to reach the beneficiaries.

In the discussion Dr. Atiq Rahman from the audience panel commented that it is necessary to understand what the community attributes and what are the environmental attributes. It is necessary to identify who knows how much about the climate change as perceptual issue varies at different level. The session chair, Shakeb Nabi stated his opinion for each of the presentation. The first presentation

mainly discussed that the Bangladesh is still focusing on index based insurance and then three types of skepticism on how they are related. The second presentation mainly discussed how we measure the risk perception on people and how we are going to work on them. The third presentation gave very comprehensive model focusing on soil, water, agriculture and keeping it linking with the climatic model.

Plenary Session on Rivers and Haors

Host: United International University (UIU)
Cohost: Jahangirnagar University
Chair: Dr. Hamidul Huq, Professor & Director, IDDC, UIU
Moderator: Dr. Amir Hossain Bhuiya, Professor and Head, Department of Environmental Sciences, Jahangirnagar University
Discussant: Dr. Sultan Ahmed, Additional Secretary, Ministry of Environment and Forest
Presenters: Mr. Md. Simul Bhuyan: Monitoring Assessment of Heavy Metal Contamination in Surface Water and Sediment at the Old Brahmaputra River, Bangladesh
Mr. Md. A. Halim Miah: Exploring Rights and Entitlement Situation of Marginalized and Poor Communities in Bangladesh
Dr. M.M. Majedul Islam: The impact of Climate Change and Socio-economic Development on Microbial Water Quality in the Betna River, Bangladesh



Figure: Dr. Hamidul Huq chairing the River and Haor session

This Vulnerable Areas session focused on River and Haor regions. Presentations focused on the threats to these regions threatened by climate change as well as other environmental contamination. Ultimately, people must work to protect river and haor areas for the sake of human and environmental health.

The first presentation by Md. Simul Bhuyan he explained how heavy metals bio accumulate through the food chain, from plankton to humans, and how those metals have various negative effects on the human body such as skin problems, thyroid problems, headaches, and depression. In

his research at the Old Brahmaputra River he found that most of the metals levels exceeded the permissible limit. More research is needed on this important topic.

Next, the second presentation by Md. A. Halim Miah examined people's perceptions about most common disasters, perceived arrangements to combat disasters, and capabilities. He also found that people don't understand their basic rights of citizenship and asserted that poor people need better access to power structures, which may occur through NGO-facilitated Community-Based Organizations.

The third presentation by Dr. M.M. Majedul in his presentation he explained that in Satkira, wastewater discharge goes directly into the Betna River and is then used by humans for domestic purposes, fishing, and other uses. This makes the population vulnerable to waterborne diseases. In his work he found that

concentrations for E coli in the Betna River were above safe standards, and demonstrated that adequate wastewater treatment is needed.



Figure: Dr. M.M. Majedul Islam presenting how climate change could affect the social economy

At the end, Dr. Sultan Ahman, from the Ministry of Environment and Forests served as the discussant for this session and summarized some of the key important points from the presentations. He noted the role of human action in heavy metal and toxics contamination in rivers, as well as the need for the government to provide resources to communities. The session chair, Dr. Hamidul Huq then pointed to the role of development interventions play in inducing hazards, rather than it being the fault of the local people. He stated that in the future we need smart planning that listens to local people and their knowledge and incorporates multi-disciplinary research in order to build resilience.

Plenary Session on Forest and Hills

Host:	Shahjalal University of Science and Technology (SUST)
Cohost:	Forestry and Wood Technology Discipline Khulna University, Khulna
Chair:	Dr. A. Z. M. Manzoor Rashid, Professor & Head, Department of Forestry & Environmental Science
Moderator:	Professor Dr. Mahmood Hossain, Past Head (Forest & Wood Technology Discipline)
Presenters:	Prof. Shahriar Khan: Deforestation Leads to Larger Biomass Generation per year, Which Supports Population Increase Dr. Shimona Annoor Quazi: Local Ecological Knowledge (LEK), Ecosystem Services and Resilience to Climate Change in Pacific Islands: Relevance to Forest Conservation in Bangladesh Mr. Abdullah Al Nayeem: Migration Impacts on Environment: A Case of Rohingya Refugees in Ukhia Upazila, Cox's Bazar



Figure: Academics from Shahjalal, Khulna and Independent universities gathered at the panel of Forest and Hills

First presenter Dr. Shahriar stated that in the competition for sunlight, trees have evolved to overshadow each other, maximizing height and accumulated biomass in forests. But paradoxically, the trees must have minimized biomass generation per year because of the difficulty in raising water and nutrients up to the tree tops. In comparison, grasses have much higher rates of biomass generation per acre per year, because there is no need to transport water and nutrients high above the ground. Paradoxically, artificial deforestation leads to loss of biomass in forests, but results in the creation of grasslands, with much higher rates of biomass generation per acre per year. For thousands of years, human populations must have been limited by biomass and food generation in the world. The ongoing artificial replacement of forests by grasslands in Bangladesh and elsewhere implies greater biomass production per year, implying more food production, more grazing animals, more meat in human diets, and larger populations. Deforestation may have led to mass extinctions from habitat loss, but must have supported the exponential growth and evolutionary progress in human populations.



Figure: The audience at the session

Second presenter of the session started the presentation explaining on how coastal communities cope with environmental change. She gave importance to the local place-based knowledge for maintaining

ecological stability in extreme events. Place-based knowledge matters because climate change will affect different places differently. The presenter also explained how the Biocultural Drivers in Fiji improved their resilience. Then she specifically mentioned the role of the Khasia paan jhum agroforest systems in building resilient forests and communities in the uplands of Bangladesh.

Third presenter of the session presented statistical information on Rohingya migration and the loss of the ecosystem. He mentioned Since the 1970s, more than one million Rohingya have fled to neighboring Bangladesh, as well as Malaysia, Thailand and other Southeast Asian countries, but in 21 November, an estimated 622,000 Rohingya refugees fled from Myanmar to Bangladesh. The consequence of this migration highly affected the hilly ecosystem in Cox's Bazar along with pollution in the water, soil and air. He showed GIS maps of Palongkhali, Balukhali, Thaingkhali, Kutupalong to representing the loss of the vegetation from January 2017 to November 2017. His message was to manage the emergency migration in sustainable ways that safeguard lives as well as the ecosystem and biodiversity. Otherwise the future consequences would be highly dangerous.

Exclusive Sessions of Gobeshona4

Gobeshona invited distinctive guest institutions and researchers to host some exclusive sessions in the conference. These sessions included the issues of disable people in climate change, how to get the climate finance, strengthening the South-South cooperation through a network of universities and establishing climate services academy. Dr. Maria Kett from the Leonard Cheshire Disability and Inclusive Development Centre of University College London (UCL) conducted the session on climate change and disability. The Economic Dialogue and Green Growth (EDGG) of Adam Smith International hosted a session on green growth. University representatives from Bangladesh, Bhutan, Ethiopia, Nepal and Tanzania paneled a session called LDC Universities Consortium on Climate Change (LUCCC). And, The International Research Institute for Climate and Society of Columbia University hosted the session on creating a Climate Service Academy in Bangladesh with BMD, CIMMYT-CSR and ICCCAD. The Gobeshona Climate Change Knowledge Platform has proactive role in collaborating South-South and North-South centres on these exclusive segments in the era of climate change.

Exclusive Session on Climate Change and Disability

Host: University College London (UCL)

Chair: Dr. Maria Kett, Head of Research, Leonard Cheshire Disability and Inclusive Development Centre, University College London

Presenters: Dr. Nazneen Islam Khan: Post -Natural Disaster Burden of Mental Health Challenges in Bangladesh

Ms. Shahaba Haque: Disability and Climate Resilience

Ms. Sadia Afrose: Climate Resilience and Disability: Bangladesh case study

Ms. Maria Kett open the session with the statement on minimum difference in global temperatures can have serious health-related consequences on disable people. She also shared some experiences during working in Kenya and Bangladesh. She showed how critical the after-effects of climate change could be over disable people particularly in developing countries.

The first presenter Ms. Shahaba Haque explained the purpose of the study on the condition of disable people and their experience in the changing climate. It analyzed the adaptation policy for them. Data was collected from Barishal. She shared that it was extremely difficult to empathize what they (disabled) experienced without actually going through it. Without having any authoritative connection, these needy people don't get any help. At the end she mentioned that the policy on disable people should be implemented soon to minimize their suffering.

Second Presenter mentioned the consequences of natural disasters over disable people's mental and physical health. The facilities for them are too limited whereas they demand some special aid. She also mentioned World Health Organization (WHO) estimated that every year, globally more than 350 million people are suffering from depression and rural people are suffering more. At last she mentioned the National Plans for Disaster Management, Bangladesh Climate Change Strategy and Action Plan, and Bangladesh Government Health Policy are now working on disability and climate change.



Figure: The Climate Change and Disability session was led by Ms. Maria Ket. This was the only session at Gobeshona4 with all female panelists.

Third Presenter Ms. Sadia Afrose disclosed that the inclusive protection and empowerment project for children with disabilities (IPEP) trained 8300 disabled children on building resilience. They conducted drama as a tool to explain child protection and their rights. She demanded higher protection for disable children as they are the most vulnerable population among the rest.

Chair of the session made some end notes that there are a lot of policies that covered a lot of issues and described a lot of problems that people were conducting but all these lots are covering very little proportion of disable people. She explained her findings and recommendations on how disable people could become resilient to climate change shocks.

Exclusive Session on Green Growth



Figure: The panel of the Green Growth session was chaired by Dr. Atiur Rahman, the ex-governor of Bangladesh Bank.

- Host: Adam Smith International, Economic Dialogue and Green Growth (EDGG)
Chair: Dr. Atiur Rahman, Ex-Governor, Bangladesh Bank & Professor, Development Studies, Dhaka University
Moderator: Mr. M Zakir Hossain Khan, Senior Program Manager, Climate Finance Governance, Transparency International Bangladesh
Discussant: Mr. Zafar Sobhan, Editor of Dhaka Tribune
Presenters: Ms. Remeen Firoz and Ms. Salma Islam: Green Growth Diagnostic: Bangladesh

Bangladesh has a lot of potential in the green growth sector. The term green growth does not hold the full meaning of what 'going green' emphasizes. Instead, it was suggested that the term should be 'green economy' which is more meaningful. Introducing green technology, adopting them into our regular lives and turning the economy environmentally sustainable will bring out the most benefit. A market based approach will be more useful to promote green technology where private sector could easily be engaged. Bangladesh needs a clear vision on green growth through innovation, creating new markets to support and foster it which will make its economy more effective at the local and global level. Policies are of no use without implement and its ongoing good practices. It is imperative to think out of the box to achieve a green Bangladesh. Climate change issues in Bangladesh are now at the tipping point in terms of taking action and how we are dealing with climate change. Behavior change is a key element to achieve an environmentally sustainable future in Bangladesh.

The presentation brought out study evidence on green growth potential in Bangladesh. Environmental sustainability should be aligned with a country's economic growth. Pursuing the green growth potential will also enable people to use existing natural resources more effectively. This method has cost-benefit as energy efficiency and ecosystem will be conserved. It was emphasized that green growth approach requires political ownership and a country-specific policy approach based on the need of the society. Bangladesh has made significant progress yet 32% of the total population still lives below the national poverty line. Bangladesh is also ranked lowest on the global Environmental Performance Index 2016 Sectors with increasing detrimental effects – agriculture, industry & manufacturing, transport, energy and construction. The findings show that Bangladesh has no separate green growth strategy but efforts are there through CSR activities and technological innovation. The government of Bangladesh has

invested over 400 million dollars on green growth in the year 2016, in terms of renewable energy and green technologies. A comprehensive set strategy in support of green growth is yet to be formulated. Behavior change is necessary to get a clear vision for green growth in Bangladesh.



Figure: The discussion session made complex economic terms easy and green.

Dr. Huq commented that the government of Bangladesh has policies but the question is how to implement those through good practices. First, we need to learn thinking out of the box for adopting the good environmental practices. Climate change issues in Bangladesh are now at the tipping point in terms of taking action because people are more active than ever before and the private sector can also be helpful in many ways. If we can establish good implementable examples, we would soon be able to teach the world tackling climate change.

The chair of the session made some concluding remarks. There are a lot of opportunities in the green growth sector in Bangladesh because we have gained much knowledge in dealing climate change. As a nation in the globe, we are in higher ground because we created our own climate change funds which had allocated to related ministries to tackle climate change. At the same time, individual attempts to save the environment are necessary for the world. Not everything should come from creating policies. For example, when importing solar panels proved uneconomical, Rahimafrooz was incentivized to implement the plan of manufacturing them. Moreover, Bangladesh Bank is the only state bank which has a green economy scheme in the world. This is an important step into the green economy sector.

Exclusive Session on LDCs Universities Consortium on Climate Change



Figure: UNEP funded several universities representative of Least Developed Countries to attend the Gobeshona4 Conference to inspire worldwide universities in climate change research and long-termed capacity development.

Host: International Centre for Climate Change And Development (ICCCAD)
Moderator: Dr. Saleemul Huq, Director, ICCCAD
Panelists: Dr. Mizan R. Khan, Professor, North-South University, Dhaka, Bangladesh
Dr. Zewdu Eshetu, Associate Professor, Climate Science Centre, African Center for Disaster Risk Reduction, Ethiopia
Mr. Om Katel, Lecturer, Royal University of Bhutan, Bhutan
Mr. Ajay Mathema, Managing Director and Associate Professor, School of Environmental Science and Management (SchEMS), Pokhara University, Nepal,
Mr. Noah Pauline, Lecturer, University of Dar-es-Salaam, Tanzania

The Least Developed Countries (LDCs) Universities Consortium on Climate Change session discussed about the initiative by the same name which is a south-south, long-term capacity-building programme by 10 Universities from the LDCs to exchange knowledge on climate change, with a particular focus on adaptation, primarily through training and research. These 10 Universities in the Consortium aims to form the core of the LDC Network of Universities which will include all 47 LDCs over time.

Dr. Saleemul Huq, Director, ICCCAD set the tone of the session highlighting that although climate capacity-building has garnered momentum followed by the adoption of Article 11 of the Paris Agreement, it has always been embedded into the Climate Change Framework under Article 6. The negotiation track on capacity-building under the United Nations Framework Convention on Climate Change (UNFCCC) became contentious around Paris on the issue of the fly-in-fly-out modality of consultancy based capacity-building led by the developed nations and received by the developing world.

This debate on the issue has Post-Paris, the global climate change status has been more focused than ever to build long term sustainable capacity to tackle the issues of climate change at all levels. The collective effort of this negotiating track on the Article 6 on Capacity-building of the UN Framework Convention has yielded a separate pillar on capacity-building under the Paris Agreement known as Article 11. To this end, a COP 22 in Marrakech, the International Centre for Climate Change and Development (ICCCAD) along with the Makerere University Center for Climate Change Research & Innovations (MUCCRI) in Uganda set up the Least Developed Countries Consortium on Climate Change (LUCCC) with 10 universities from the LDCs to build climate-related capacities for the region most vulnerable to the impacts of climate change.



Figure: Delegates from five different countries universities in the panel of LUCCC session.

The first speaker of the session, Dr. Mizan R Khan shared the vision of LUCCC which aims to capacitate all the 48 LDC countries through the universities by developing sustainable capacity on climate change to the future leaders. In the Paris Agreement there is an important new Article, namely Article 11 on Capacity Building which has put forward a new paradigm for Capacity building focusing on the need to develop in-country capacity building systems that can carry out long term Capacity Building and not just rely on short term fly-in and fly-out international consultant delivered workshops. Hence, this first of its kind LDC specific, South-South initiative for building climate capacity will eventually enable all the LDC countries to take care of themselves on climate impacts from the prevailing monopoly on knowledge by the industrialized countries owing to historical facts. LUCCC started its journey with 10 founding partners from Asia, and East, South, and West Africa who form the core of the LUCCC partnership. Launching in 2017, the LUCCC has framed two separate Workplans: 1) Workplan A which has already kick started comprises of activities that will be undertaken without external source of funding; and 2) Workplan B focuses on activities that will be implemented with external funding. The programme will primarily focus on knowledge exchange with a view to condensing the differences in knowledge between different parts of the world. Keeping this in mind, the LUCCC partners along with GIZ in Bonn Germany, UNFCCC, PCCB and UNU-EHS organised the first-ever “Capacity-Building Day” at COP 23 in Bonn, Germany.

Professor Zewdu Eshetu from Addis Ababa University representing LUCCC in Ethiopia sharing Dr. Saleemul Huq’s vision accentuated on the importance of capacity-building on climate change in the face of increasing opportunities for addressing climate change along with the potential threats facing the

climate hotspots. In order to climb up the knowledge ladder a combined effort should be exerted on the three basic components: development, adaptation, and mitigation. When it comes to taking into account the aspects of climate change, there are two important actors: service providers and service users. While initially carbon sequestration was widely regarded as climate service, with the adoption of global climate change treaties (such as the Kyoto protocol and the Paris Agreement), climate services now encompass a wider concept which comprises both adaptation and mitigation. With the evolution of the concept of climate services climate finance has become more imperative than ever and being considered as public expenditure. Paying for the climate services is where capacity-building can tap into. There is a lacuna in capacity development as the climate service users are the Annex I countries, while the non-Annex I countries are the service providers who have very little capacity to do so. There are unnecessary methodological difficulties for availing advantage of climate change opportunities (such as with REDD+), hence it is necessary to establish a scientific forum for leadership. In the light of this concept, Ethiopia undertook capacity-building training for about 50 professionals on different aspects of climate change, environmental management, along with preparation of training manuals and publications for different sectors (such as forestry, agriculture, soil, etc.).

The third speaker of the session, Mr. Noah Pauline from the University of Dar-es-Salaam in Tanzania introduced their role as the LUCCC partner taking a leading on the climate finance component. He highlighted on the capacity-building activities in Tanzania in a brief speech. In 2013, the African Climate Change Fellowship Program was conducted to capacitate youth on climate change issues through an exchange programme. One of the major steps towards climate finance in Tanzania includes the quantification of climate change related expenditures in national budget based on identification of budget estimates and actual expenditures of the relevant projects. Tanzania's budget for climate related activities grew from 2009 to 2013 with an estimated growth of 7% in 3 years. Another benchmark set by the Tanzanian government in the field of climate change is a fellowship program for officials and graduate students that aims to build capacity of future climate leaders in Africa.

Mr. Ajay Mathema from the School of Environmental Science and Management (SchEMS), Pokhara University in Nepal shared the Nepal experience on climate capacity-building. In 2012, the institute began offering credit course in climate change by introducing climate change into the curriculum in Nepal. Climate diplomacy and negotiation is the priority area for Nepal. The capacity constraint in this regard is due to lack of capacity retention in the ministries which causes a knowledge gap. Nepal sees LUCCC as a potential avenue to explore for providence of resources and training to prepare them for the negotiations.

Mr. Om Katel from Royal University of Bhutan spoke about his institute as being the oldest university in Bhutan which was only established 15 years back. The institute still not as old as some of its LUCCC counterparts is following the footsteps of ICCCAD to work on climate change related research. Despite its status as a Carbon Neutral Country, Bhutanese government has formed Bhutan's Commitmee to climate concerns that includes environment conservation; water and food security; climate change adaptation, mitigation, and resilient livelihoods.

Each of the 10 core partners is leading on different themes on which they have some level of expertise and capacity. LUCCC aims to grow in 2018 through extensive outreach in different international platforms which begins with the CBA in Malawi in June, Adaptation Futures Conference in Cape Town in June, 2nd installment of the Capacity-Building Day at COP24 in Katowice, Poland. In 2019, LUCCC will

introduce its first batch of LUCCC Youth Fellows through the platform of Gobeshona5 who will be selected through a national young climate leader's programme with a national competition run by each of the partners. At national level, each partner aims to plan one workshop on a designated topic at national level and invite other partners to join. In order to carry forward the Workplan B, LUCCC has already started to liaise with bi-lateral and multi-lateral donor agencies.

Exclusive Session on Climate Service Academy

- Host: BMD, CIMMYT-CSR, IRI (Columbia University) and ICCCAD
- Chair: Mrs. Mélody Braun, Research Staff Associate, Financial Instruments Sector Team (IRI)
- Discussants: Ms. Farah Kabir, Country Director, Action Aid
Dr. Saleem Huq, Director, ICCCAD
Mr. Mazhar Aziz, (DAE, Project Director Agro-Meteorological Information Systems Development Project Component-C of Bangladesh Weather and Climate Services Regional Project)
- Presenters: Mr. Wais Kabir: The Need for Climate Information and Services in Bangladesh in Agriculture, but With Specific Application in Field Crops, Aquaculture, and Livestock, Including the Need for Educational and Training Programs in Climate Services for Agriculture
Mr. Shamsuddin: Climate Data Available, Needs and Challenges.
Mr. Tim Krupnik: The Integration of the Two, Eluding to the Idea of the Climate Services Academy

Chair started the session with a brief on the four pillars of climate services, which are producing climate information, translating the info and disseminate it for the users. Climate services are essential in the climate change sector because the available information is subject to trust which is a matter of concern these days. In mentioning the Climate Services Academy, its aims be a platform to coordinate measureable and variable data access. Which is needed most in Bangladesh for the agricultural sector so that the farmers can access valuable information and take better cautionary methods for farming.

Chair also inform that this is a new field and more research is needed along with potential of capacitating female farmers, young people with knowledge of how to access that information. The information's which is available for everyone with the access and if it is trust-worthy are the concerns for today. The Climate Service Academy is being initiated to address these issues and to create a platform to coordinate this effort.



Figure: Participants gathered to know about the climate service academy

In the first presentation, the presenter Dr. Kabir narrated the existing scene of the agricultural sector which is changing due to several factors such as climate change, economic pressure, and the need to change livelihood. He also mentioned that Southern coastal region is vulnerable with climatic risks. Climate change has the most adverse effects in the agricultural field. The available data regarding the weather is still fixed in traditional knowledge. The farmers do not get any access in the data. It is necessary to determine how it translates at the farmer's level. Presenter recommended we need to focus on what information are missing about the agricultural sectors. Research and development is needed to further develop this sector in the terms of climate change. Presenter also mentioned recently the priority shifted towards addressing the climate risks. A combined effort of research and educational institutions are needed. Integration and better coordination will help us to use the natural resources properly in Bangladesh.

The second presentation covered different climate change risks in Bangladesh and how climate service academy can provide information to deal with it. The presenter, Dr. Ahmed, indicated that the exponential concerns due to climate change have been identified and Bangladesh Meteorological Department (BMD) played a crucial role in it. It has been understood that some natural hazards has been on the rise in recent years which has led people in climate change hot spots to be more vulnerable and exposed to risks. Seasonal and multiyear climate forecasting has advanced in Bangladesh with correct information for taking action. There is a need for better coping mechanisms in this regard with capacity development of professional and people of the vulnerable communities. The emphasis was put on better research on climate change vulnerability, management of disasters, dissemination of improved knowledge on the hazards, raising awareness through education, engagement of all

stakeholders and above all a better coordination among these criteria. The climate services concept can play an important role in this coordination.



Figure: The conference participants were highly curious to know about the function of the Climate Service Academy.

Mr. Krupnik in the third presentation explained how vulnerable sectors and people could benefit from the climate services academy. While the developing countries are striving to move ahead with economic development, the impacts of climate change continue to create multi-faceted problems. Countries like Bangladesh are dependent in the agricultural sector. Therefore, empowering the farmers with proper knowledge on the climate change impacts, how to cope with the change and different adaptation strategies are essential. The information generated by the meteorological departments are not easy to access nor is it free. Climate Services Academy hopes to take this challenge and find ways to share available information for vulnerable people, NGOs, policy makers and better translate it for ease of use. To make this concept a reality all relevant stakeholders need to have a clear understanding of the situation and work together in a holistic manner.

At the end Dr. Huq mentioned that adaptive capacity could be built by setting a time horizon, identifying the key changes in the environment, educating the next generation to increase national capacity. Long term programmes are needed instead of project work. The key is to make an investment in building capacity for the future which will leave something substantial behind. Ms. Farah Kabir talked about how building relations with local communities take time and that it is for long term. While bringing the issue of agricultural scene in Bangladesh she mentioned that the problem is not only about pesticides or cropping pattern, health services or livelihood but the sustainability of it. Communication is key in facilitating the dialogue between the communities and the expert level. A mechanism where we can convince the political actors is also necessary.



Figure: The speakers explained how climate services can be utilized in Bangladesh.

One participant from the audience pointed out that food security is one of the biggest concerns in times of climate change. Urbanization and new urban and industrial zones will be common for Bangladesh. Consider multi-cultural dialogue sessions to make a comprehensive climate service academy. Another suggested to build a climate services academy is to include social science research. Also, multidisciplinary research and integration between researches under ministries will be very beneficial. Dr. Fazle Rabbi explained that the Department of Agricultural Extension (DAE) has the largest agricultural network in Bangladesh. Practical data from the field is crucial to better determine the adaptation strategies in different spots. Available information is not user friendly nor is it reliable. Identification of sectors where building capacity and providing knowledge is needed. Afterwards this can move to an inter-disciplinary format. Ms Monica Bose made a point on emergency services due to climate change. She mentioned that this information could be delivered through mobile phone apps. It also needs to be in Bangla so everyone understands it at the root level.

Local Solutions

Gobeshona4 research sessions from 8-10 January were named “Local Solutions”. Researchers submitted their published research as well as findings from their on-going research based on specific vulnerability on several areas in Bangladesh. The Gobeshona committee restricted detailed discussion on problems rather than the solutions of identified problems. This section inspired solution for a small local area in Bangladesh, mentioning the target beneficiaries of the study as well as implementing agencies who could possibly take that research findings to solve problems.

Local Solutions on Agriculture and Food Security



Figure: Chair of the session discussing his experience on agriculture and food security.

Host: Christian Commission for Development in Bangladesh (CCDB)
Cohost: International Rice Research Institute (IRRI)
Chair: Dr. Humnath Bhandari, Interim IRRI Representative for Bangladesh
Moderator: Md. Kamruzzaman, Coordinator-Research, Climate Change Unit at CCDB
Presenters: Dr. Rafiqul Islam: Evaluation of Climatic Impacts on Crop Production at Paikgacha Upazila of Khulna District
Dr. Jatish Chandra Biswas: Methane Emission and Carbon Budget during Wet Season Rice Cultivation

At the beginning chaired mentioned that the agricultural sector in Bangladesh has been affected badly due to climate change. Not only the temperature and rainfall pattern has been changed but the traditional knowledge is no longer benefitting the farmers. Crops in the north-eastern region of the country which is a Haor (wetland) region suffers from flood and cold so flood tolerant and cold tolerant rice species have been benefitting farmers in that area. Mechanization of the agricultural sector is also

very important in this regard because farming tools are inadequate as well as manpower. Chemical fertilizers are considered hazardous for the crops and the need for producing more organic fertilizers were imposed. The idea of measuring methane emission from the agricultural sector in Bangladesh might help in building a more comprehensive carbon free country.

Dr. Islam presented on the 'Evaluation of Climatic Impacts on Crop Production at Paikgacha Upazila of Khulna District'. The NorthEast region of Bangladesh comprises Haors which suffer from regular flood, flash flood, and cold during winter times. To fight food shortage, flood and cold tolerant rice species were introduced and people have been benefitting from it. At the beginning, the early variety cold tolerant rice species could not withstand cold shock from mid-October to April which was the main problem in crop cultivation. A 30 years rainfall data shows that the average rainfall pattern has been changed. At the same time, farmers have noticed a change in the temperature. They are helpless and devastated as traditional agricultural knowledge and farming tools does not help to this change anymore. Mechanization is very important in this regard. Youth and women should be capacitated with the changed knowledge so they can help make things better.

Dr. Biswas briefly described the objective of this study 'Methane Emission and Carbon Budget during Wet Season Rice Cultivation' saying the aim was to find out methane and carbon dioxide emission from rice fields. Rice is the main crop in Bangladesh. But how much carbon emission has been associated with rice field is not yet been identified. As a developing country with low number of industries Bangladesh emits a very low amount of carbon dioxide to the atmosphere. Use of cow dung is one of the reasons for methane emission in the agricultural sector. Integrated cropping mechanism is crucial for better farming. Reducing methane emission lies in the better management of water, tillage, good balance of organic and non-organic fertilizers etc.

At last chaired mentioned necessary to measure the methane emissions from the agricultural sector in Bangladesh. At the same time, it is vital to determine which varieties of crops emit how much methane. A participant talked about the declining quality and nutrient of the soil in different parts of the country due to the usage of synthetic fertilizers. An example was given from Denmark where people use kitchen and organic waste to make organic fertilizers. The need for appropriate policy in Bangladesh to do the same was emphasized by another participant. Increased population in Bangladesh is a problem to future food security. To tackle this, young farmers as well as female farmers need to be equipped with updated knowledge of farming. Technology transfer and mechanization will help with the problem.

Local Solutions on Health and Migration



Figure: The panel and the audience of the session Health and Migration

- Host:** The International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) and International Organization for Migration (IOM)
- Cohost:** Bangladesh Institute of Social Research (BISR)
- Moderator:** Mr. Mofizur Rahman, Research Investigator, Climate Change and Health, Health System and Population Studies Division, icddr,b
- Panelists:** Dr. Quamrun Nahar, Acting Senior Director, icddr,b
Dr. M. Khurshed Alam, Trustee Chairman, BISR
Mr. Abdusattor Esoev, Senior Programme Manager/Deputy Chief of Mission, IOM
- Keynote:** Dr. Andrew Baldwin, Associate Professor, Department of Geography, Durham University, England
- Presenters:** Dr. Md. Sirajul Islam: Point-of-use Water Treatment as an Adaptation Option to Prevent Climate Change-induced Waterborne Diseases
Mr. Md. Hafiz Iqbal: Disparities of Health Service for the Poor in the Coastal Area: Does Universal Health Coverage Reduces Disparities?
Mr. Mohammad Mahbubur Rahman: Disasters and Forced Migration: A Case Study on Riverbank Erosion and Its Potential Impacts on Rural and Urban Bangladesh

The session discussed issues associated with climate change and health and also various aspects of migration. Dr. Andrew Baldwin from the Department of Geography in Durham, the Keynote speaker of the session, presented a comparative study which looks at four cities around the world to develop an agent based model to better understand the different forms of migrations that occur. Dr. Sirajul Islam discussed Point-of-use water treatment as an Adaption option to prevent climate change induced waterborne diseases. Mr. Md. Hafiz Iqbal in his presentation shows that the wise distribution of health care services and implements UHC can promote the health service disparities for the poor. Mr. Mohammad Mahbubur Rahman in his presentation on the potential impacts of riverbank erosion on migration showed how river erosion is causing increased migration. To tackle the problem, he proposed using local solution for tackling riverbank erosion, short term and long-term planning, improving livelihood, ensuring sustainable rural development and improved housing policy framework.

Dr. Baldwin, the Keynote speaker of the session, presented a comparative study which looks at four cities around the world to develop an agent based model to further based on data to understand the different forms of migrations that occur. The study used q-methodology which is not commonly used.

The research team met with a small group that represent the larger population to understand what it is like to live in the particular informal settlement. From this, there are statements developed with unique discrete information which can drive a number of different personality types which can be identified by a larger sample. Analysis of the survey responses indicated that there are four factor groups as to how the migrants perceive their location. These four factor groups are: i) unsafe and alone, ii) from bad to worse, iii) things are bad but positive outlook, iv) comfortable here with a strong community.

Dr. Sirajul Islam discussed the Point of use water treatment as an Adaption option to prevent climate change induced waterborne diseases. He mentioned that temperature rise in Bangladesh will make a conducive and favorable growth for algae and bacteria which will cause more cholera cases in the country. He informed that water filtration by using a 8 layers of old Saree, there was 50% reduction of cholera pests. Dr. Siraj mentioned that he has developed the “Siraj Mixture”- a water treatment mix which only costs 2 Taka and can treat highly contaminated and heavily turbid water within 30 minutes. He suggested that this could be an option which may help to reduce potential cholera outbreaks.

Dr. Md. Hafiz Iqbal discussed how poverty & ill-health go to the same direction. He showed that the country’s people who have lower income tend to have higher mortality rate. Mr. Iqbal showed that the health facilities are limited in various areas and suggested that government intervention is required to reduce the disparities of health and services for the poor. He concludes that the wise distribution of health care services and implements UHC can promote the health service disparities for the poor.

Mr. Mohammad Mahbubur Rahman in his presentation on the potential impacts of riverbank erosion on migration showed that the erosion rate is higher than accretion. The study used household surveys as a quantitative method, and Focus group discussions as the qualitative measure. From 2000 – 2006 there is great erosion from Char Monpura, Char Fassion and Char Tajimuddin and the total area of urban slums also increased as more people are migrating. To tackle the problem, he proposed using local solution is tackling riverbank erosion, short term and long-term planning, improving livelihood, ensuring sustainable rural development and improved housing policy framework.

Two Panelists, Dr. Kamrun Nahar from ICDDR, B and Mr. Abdusattor Esoev from IOM opened the floor for some discussions. Dr. Nahar briefly discussed about the three presentations. She talked about the role of migration and requested better ways to measure what percentage of the migration is climate related. Mr. Abdusattor talked about the journey of climate change and how COP21 is the first platform that brought forth the “human-face” in climate change. He mentioned the need for facilitating the mobility of climate migrants, to look at the knowledge and skills that these individuals can contribute to the society. Dr. Saleemul Huq, in the Q/A session emphasized on looking at the solutions rather than problems. Mr. Mofizur Rahman concluded the session commenting that more studies are required to explore links between climate change and human health.

Local Solutions on Mitigation and Gender



Figure: Panel at the Mitigation and Gender session

Host Bangladesh Institute of Social Research (BISR) and Christian Aid
Chair: Mr. Khurshed Alam, Chairman, BISR Trust
Presenters: Ms Nuzhat Imam: Challenges of Transition to Low Carbon Technologies: a Strategic Niche Management Analysis of Brick Manufacturing in Bangladesh
Dr. Ahmed Salauddin: AWD Technology Out-scaling Through Northwest Focal Area Network
Mr. Bodruddoza Zion: Flood Vulnerability, Local Perception and Gender Role Judgment Using Multivariate Analysis

The first presentation was by Ms. Nuzhat Imam on the *Challenges of Transition to low carbon technologies in brick manufacturing in Bangladesh*. She shares how brick manufacturing is polluting to the environment and has detrimental effects on health. The sector is fully run by private companies and is usually a seasonal affair. It employs people on a seasonal basis. As such it is not referred to as an industry. The technology used in Bangladesh is energy inefficient, usually coal based, emits 11.59 million tons of carbon dioxide per year. Highly polluting in terms of climate change. She then discusses the different technologies available and its energy efficiency. She then went on to discuss the main challenges of achieving low-carbon development such as frequent policy changes and the fact that the cost of new technologies is sometimes higher than the fine for not using them. Some recommendations are involving kiln owners in policymaking, creating a market for low-carbon bricks, and building technical and institutional capacity to improve this industry.

Dr. Salauddin then presented his pilot project, *AWD Technology Out scaling Through NorthWest Focal Area Network*. He shared that ground dependency must be reduced and rain water and surface water harvesting is encouraged by the government. The key question is: how can we get the same amount of rice using less water? The advantages of using AWD include reducing water, mitigating greenhouse gases, and increasing returns. This is not an old technology; it's a relatively new one. Although it started in 2004, it is not popularized yet and farmers are not fully aware of this method. The challenge has been in determining who gets the benefit of saving the money. The pump owners are usually the ones that get benefits from this project and they do not share the benefits with the farmers.

The chair, Mr. Alam then added his own experience, sharing how farmers do not know how much water is needed for different varieties of crops. He introduced a new method for boro rice irrigation. A crucial

issue is negotiation between farmers and the tubewell owners. They need to sit together and argue their cases with evidence.

The last presentation was by Mr. Bodruddoza Zion on *Flood vulnerability, local perception and gender role*. The study focused on flooding and how it impacts different gender groups. He shared that char land is usually more vulnerable than the main land. Most people in the area are illiterate and the average income of the area is quite low. There is a social response towards flood management. Women play a significant role at the time of the flood. They are socially appreciated but they do not get family appreciation. He then proposed the solution of problem-based PFM and flood risk capacity building.

The moderator summed up the session by discussing women and gender issues in Bangladesh. He shares that women's contribution in agriculture and many other sectors is not acknowledged as much as it should be. The chair took the floor to conclude the session. He shared that during floods there is less agricultural productivity. He highlighted the fact that men do not appreciate the effort of women in the household and this is a deep rooted cultural issue. We need to solve this issue from its core.

Local Solutions on Urban and Modelling



Figure: The session on Urban and Modelling

Host: Wageningen University and Research and ICCCAD
Cohosts: Jointly hosted by Practical Action and Islamic Relief
Chair: Ms. Hasin Jahan, Bangladesh Country Director, Practical Action
Moderator: Mr. Munirul Islam, Programme Manager, Islamic Relief
Presenters: Mr. Rafiul Islam: City-Wide FSM Service for Improving Water Security and Public Health in Faridpur, Bangladesh
Mr. Nabir Mamnun: Forcing Ocean Model with Atmospheric Model Outputs to Simulate Storm Surge in the Bangladesh Coast

The parallel session on Urban and Modelling focused on two aspects of Climate Change adaptation and disaster management: Fecal Sludge Management (FSM) and Ocean Atmospheric Model for storm surge prediction. Both the keynote presentation was widely praised by the audience which brings attention to both SDG 6.2 (Water and Sanitation) and an urgent call for early warning system. The FSM model is a pilot project initiated by Practical Action in Faridpur District which brings together municipal authority, informal solid waste management sector and public under one roof to make FSM sustainable. The Ocean Atmospheric Model is a research project of Chittagong University which can predict the Storm Surge and wind speed in a timely and accurate manner that can effectively reduce loss of lives and properties in coastal areas of Bangladesh.

The Moderator of the session Mr. Munirul Islam welcomed all the participants and keynote presenters in the session and forwarded to Ms. Hasin Jahan, Session chair to tell about the objectives of this session.

The chair emphasized two aspects of Climate Change during her speech: One is Human perception of Climate Change and another is the overall disaster management framework. People, especially farmers in the coastal areas do not get the jargon used by climate Change experts, but they can perceive the changing scenario in the weather pattern. They can perceive temperature and humidity increase, or a decrease in production due to unpredictable weather. Scientific basis and scientific analysis is needed to properly address these problems. She called for action in urban resilience issues regarding climate change and closed her welcome speech.

Mr. Rafiul Islam, presented a paper titled “City-Wide FSM Service for Improving Water Security and Public Health in Faridpur, Bangladesh.” He started with a question, “We achieved 100% sanitation in 2014, but is it sustainable?” In Faridpur, the municipality was under capacity to emptying the fecal sludge. But when they did, they disposed it to canals and water bodies, affecting the environment. The FSM project was taken by Practical Action for reducing the risk associated with fecal sludge. Among various methods, onsite sanitation management technology was undertaken by the implementing authority to provide better value for money. Mr. Rafiul presented the value chain of the project. He also presented social mobilization and demand reaction, encouraging public engagement in the whole process.

Mr. Nabir Mamnun presented a paper on “Forcing Ocean Model with Atmospheric Model Outputs to Simulate Storm Surge in the Bangladesh Coast.” At first he provided a brief outline of the intensity and vulnerability of people during disasters like cyclones and storm surge. Then he focused on the urgent need of atmospheric modelling to tackle these problems. He stated that for modelling storm surge, sea level pressure is crucial. So he incorporated the state of the art ocean atmospheric coupled model to simulate Aila and Sidr, two well-known cyclones that had tremendous effect in Bangladesh. The main advantage of this model is that it can capture rapid change of wind direction. The most important contribution is the integration of real time weather with the model. Public and concerned authorities can take necessary actions given the data and information.

At the conclusion of the session, the Moderator gave example of Japan as how they are making resilient cities. Plan and development should be inclusive with all stakeholders to build a resilient city. Ms. Hasin Jahan delivered her concluding speech emphasizing on SDG 6.2: Water and Sanitation, where it is mandated that safe sanitation is essential for achieving SDG. Without proper FSM it is not achievable. Project investment cannot be recovered to within the project period. But it is the duty of municipal authority because people are paying taxes. So the responsibility lies to the government and

municipality. She is also optimistic about the Public Private Partnership in Fecal Sludge Management in the near future.

In case of disaster, forecasting is essential. Right information at the right time to target people who are the possible victim of disaster should be propagated efficiently. The chair thanked all the participants and closed the session.

Local Solutions on Resilient Livelihood



Figure: The Resilient Livelihood session panel and audience at Gobeshona4 Conference

Host: Oxfam
Cohost: Jointly hosted by Christian Aid and Islamic Relief
Moderator: Mr. Tapas Ranjan Cahkraborty, ICT and Development Coordinator, Oxfam
Presenters: Mr. Saleh Ahmed: Does Systems Thinking Improve Our Understanding on Resilient Livelihoods? Insights from Coastal Bangladesh
Mr. Md. Hafiz Iqbal: First-and Second-order Adaptation to Salinity and Water Logging: Case of Coastal Embankment in Satkhira District of Bangladesh
Mr. Md. Manjurul Islam: Measuring Resilience of Two Coastal Fishing Communities of Bangladesh
Mr. Munirul Islam: Making Livelihood of Vulnerable Communities More Resilient

Mr. Saleh Ahmed shared his PhD work from Patuakhali district on “Does Systems Thinking Improve Our Understanding on Resilient Livelihoods? Insights from Coastal Bangladesh” as different vulnerabilities are associated with the coastal region, such as sea level rise, water logging, salinity intrusion, and coastal erosion. He wanted to know the development challenges and selected Kalapara as his site. He interviewed the farmers to find out the way for working in a comprehensive manner. The region was chosen to identify the unequal access to the power and resources. He analyzed the social network to find out who connect with whom when any stressors happen. Climate change is an issue of social injustice. If the small farmers cannot access the phone, they cannot have access to the information. It is needed to understand the dynamic interactions among various components of “systems” that will shape the use of climate information (or other resources) for livelihood decisions of a farmer. As farmers work in a social space, their behavioral pattern needs to be understood in which way they could understand as they prefer to go to the local market and have the information from there and these information needs are based on the local climatic stressors.

Mr. Hafiz Iqbal presented on the “First-and Second-Order Adaptation to Salinity and Water Logging: Case of Coastal Embankment in Satkhira District of Bangladesh.” Comprehensive adaptive programs are essential to protect climate- and human-induced hazards. First order adaptation will have the case for water logging and accumulation of salinity. The cumulative effects of the first order adaptation sparked the second order impacts. Second order adaptive measures are required for restoration of the normal livelihood, building resilience and enhance coping capacities. He discussed the idea of floating gardens, aquaculture, seed variety, and pit system gardening. The message from the research is adaptation measures are very important for survival. It should be closely allied to flexible, resilient, effective, environment-friendly, sustainable, and suitable. Indigenous knowledge with collaboration to use resources wisely can be a solution to improve livelihoods. First-order adaptive measure should be taken into consideration of the spatial geo-physical set up. Second-order adaptive measure should focus on diversified and new opportunity generated activities so that affected people can easily adapt themselves with the unexpected hazards or disasters.

Mr. Manjurul Islam presented on the study regarding “Measuring Resilience of Two Coastal Fishing Communities of Bangladesh.” Coastal Fishing Community Resilience refers the capacity to absorb disturbance due to Climate Change Activities by the coastal fishing community. He selected 20 fishermen randomly from two fishing communities in Sitakunda and Dhonia Union and analyzed his study under six fields: natural, human, physical, financial, social, and institutional. The geographical location, number of the family member, resource supply and availability, ability to saving and access to credit, social security and cultural involvement and advocacy, disaster recovery, warning and response are the issues which determine the resilience of a community. Measuring Coastal Fishing Community Resilience is very effective to poverty reduction and alleviation.

Mr. Munirul Islam’s study was presented by Mr. Mohiuddin on “Making livelihood of vulnerable communities more resilient” was done in Monirumpur upazilla under Jessore district to study the livelihood practices and to apply different adaptive and alternative agro-farming practices to produce and multiply higher amount of crops throughout the year using limited homestead resources to cope with water logging. FGD, KII, Farm HH surveys, and validation of resilient livelihood assessment tools have been identified to follow the methodology of the research. Households receive training on how to make their livelihood. Most vulnerable communities remain detached from the service providers, so proposed local solutions include training for HH head on how to make their livelihood resilient through different adaptation technique, linking the communities with Upazila, Union Parishad and linking vulnerable households with Disaster Management Committees. They have been able to demonstrate techniques like: bag gardening, sapling production from water hyacinth boll, portable vertical floating gardening, and cage fish culture. All these increase their average productive assets. Through consultation with local communities involving government service providers, it is easy to identify adaptive solution to livelihood which is more resilient. Area specific analysis of livelihood problems in the face of water logging, climate change and other associated problems and plan of solutions is required at macro level government planning. Involvement of local government institutions makes households more prepared to disasters which make them more resilient. Vulnerable families become stronger through groups. Hence it is required to do advocacy and networking with line agencies and policy makers. The presenter concluded that if the resilient livelihood approach is replicated and scaled up through the government, livelihood of most vulnerable communities will be more resilient.

The chair concluded the session saying that resilient livelihood is a dynamic kind of thing. It is always changing as the technology is changing continuously. And because of this changing situation, we all should keep up working.

Local Solutions on Adaptation Technology



Figure: The panel of Adaptation Technology

- Host: Christian Commission for Development in Bangladesh (CCDB),
Moderator: Md. Muhammed Atikul Haque, CCDB
Chair: Md. Ziaul Haque, Director, Department of Environment Ministry of Environment and Forests, Government of Bangladesh
Presenters: Dr. Md. Kamrul Islam: Sustainable Intensification of Rabi Cropping through Cotton + Lentil Intercropping in Southern Bangladesh
Mr. Muhammad Manjurul Karim: A Novel Bacillus Aryabhatai MS3 Promotes Growth in Rice Under Salinity Stress
Mr. Carlo Montes: Seasonal Prediction of the Monsoon Onset in Bangladesh

The Cotton Development Board (CDB) supports and provides service to the farmers. They also ensure that the price of cotton is equal all throughout the country. There are new technologies to support the farmers. They have several stations and research centers in Bangladesh. Farmers cultivate and harvest seed cotton. Machines separate fiber (lentil) seed. Seed is used to make oil cake (food for poultry and fish) and edible oil and fiber is sent to textile industry. Cotton is a significant factor for the Bangladesh economy. Cotton can be a crucial crop in Bangladesh. Cotton production should be increased because demand is high.

Due to climate change such as more flooding in some areas, unexpected droughts, increase in salinity intrusion and extreme temperature, the yielding of rice crop has decreased. It is expected that by the year 2020, 2% of the land will be under water and 7% by the year 2050. The solution to this problem is Plant Growth Promoting Rhizobacteria. Many experiments have been carried out proving that Bacillus aryabhatai MS3 is the most effective fertilizer. It is not only saline resistant. It also grows in different plant hazardous soil condition. It has a robust effect on DNA as well.



Figure: The audience is listening to valued presentation on Adaptation Technology

The season is directly proportional to topography. Bangladesh is more fortunate to have the infamous monsoon season. Aman rice (Rabi crop) needs lots of water to grow and yield. Since the 56% of the rain occurs during the monsoon season, farmers are heavily dependent on it. If the farmers can seed the crop plants predicting the monsoon rain then rice production will bloom. A software is developed by which it can predict the approximate date of the monsoon rain with previous database from the weather stations in Bangladesh. Some elements such as sea temperature, wind direction and its speed can help forecast the monsoon rainfall. A test has been carried out and the software proves itself to be 62% accurate on overall.

Building a bridge between researchers and policy makers is being built which is very essential. US funds DoE so anyone can do research and carry out experiments. Technical support from CTCL is also necessary.

Local Solutions on Disaster Management



Figure: Panel of the session Disaster Management

Host: United International University (UIU)
Cohost: Jointly hosted by Islamic Relief, Jahangirnagar University and Jagannath University
Chair: Dr. Hamidul Huq, Professor & Director, IDSS, UIU
Moderator: Mr. Munirul Islam, Programme Manager, Islamic Relief
Presentations: Mr. Abu-Hena Mostofa Kamal: Role of Disaster Governance in Disaster Risk Management
Mr. Md. Hafiz Iqbal: Disaster Preventive Geodesic Dome: The Best Home for the Coastal People of Bangladesh
Mr. James Totton: Lived Experiences in Constructing Vulnerabilities: A Discussion Within the Sirajganj District, Bangladesh

Bangladesh is susceptible to a variety of disasters including cyclones, earthquakes, droughts, storm-surge and flooding. The country also encounters other manmade hazards such as fires and infrastructure collapses. In Bangladesh now in research, policy process in teaching we find disaster is the main barrier to our sustainable development. In addition, climate change is driving force of intensifying disaster. Though the history of disaster it shows social disaster is much more influential than the natural disaster but we often deal with natural disaster than the social disaster for development process. In relation to climate change it is more of our responsibility to deal with the natural disaster management.

Although Bangladesh exceeded the regional averages for the Asia-Pacific in the Hyogo Framework for Action (HFA) progress report (2013) and scored a higher than the average score in every category including early warning systems, risk assessment, DRR policy, and preparedness for effective response.

But the presentations brought some new concern. The three presentations have some good findings and recommendations focused on the affordability, local knowledge and our support. Though we are doing well in disaster management but perhaps still we do have a big gap linking the climate change adaptation and disaster management. There is always a gap between local knowledge and outsider knowledge remaining policies and practices. We need to look for the practices they do have their own way of resilience for managing disaster. So we need to give more focus on research and to disseminate

the research findings with the policy maker and government and other stakeholders and take more comprehensive and integrated action for disaster management.

The first presentation was by Mr. Abu-Hena Mostofa Kamal, Lecturer, Khulna University of Engineering & Technology (KUET), on Role of Disaster Governance in Disaster Risk Management. He addressed that 28% of the total population who lives in coastal areas are in the risk of absolute increasing level of climate change and disasters. His study concern is to explore the efficacy of the existing disaster governance system in the coastal communities to mitigate the vulnerabilities of the disaster prone people of the coastal area. Achievement of Bangladesh in disaster management (CDMP, FFWC, CMS). The study found that successful operations of GOs, NGOs and Community based organizations have reduced disaster risk and vulnerabilities of the study area. Although GOs are working in collaboration with NGOs and community people but GO initiatives required intensive monitoring and supervision to avoid politicization, nepotism.

He suggested a detailed understanding of local politics, power relations and resources are required to ensure that international funds and policy frameworks are accessed by the most vulnerable groups. Findings indicates less domination of gender identity during disaster but women's participation in decision making processes requires further consideration. More research is needed in this nascent field of study on factors that contribute to effective governance and on other topics, such as the extent to which governance approaches contribute to long-term sustainability.

Md. Hafiz Iqbal, PhD Researcher, Bangladesh University of Professionals (BUP) has presented Disaster Preventive Geodesic Dome: The Best Home for Coastal People of Bangladesh. Coastal housing sector of Bangladesh is highly affected by cyclones and storm surges. Total housing damage was estimated BDT.57.9 billion (US\$ 839 million) Nearly 537,775 house holds' dwelling (15%) of the 3.5 million households were completely destroyed by SIDR.

The study objective was to evaluate the effectiveness of a 2V frequency geodesic dome with respect to sensitivity (cost-benefit) analysis. The model is convenient and suitable for small households, more energy efficient and minimize the wastage of land. Net Present Value analysis was done for comparison between 1284.81 feet rectilinear home (Semi permanent home) and geodesic dome. Which shows the individual cost units of TK.150,000 and Tk. 65,000, Return in period 10 Tk. 333,333 and Tk. 277,778, and NPV Tk. 183,333 and Tk. 212,778. Proving more return generated from geodesic dome. Government intervention, perception and motivation of coastal people are highly required for more construction of geodesic dome in the coastal region of Bangladesh.

Last, Mr. James Totton, Visiting Researcher, International Centre for Climate Change and Development (ICCCAD), presented on the topic of Lived Experiences in Constructing Vulnerabilities: A Discussion within the Sirajganj District, Bangladesh. He mentioned lived experiences are involved in exacerbating or reducing constructions of vulnerability. Place plays a critical role in generating both lived experiences and constructions of vulnerability. These constructed vulnerabilities were being reinforced. Approaches like paying closer attention to the practical use of preliminary scoping studies conducted in communities, respect communities own hierarchy of needs. By using existing networks within communities more efficiently and through pursuing more research driven by social studies alongside science.

Local Solutions on Ecosystem and Loss and Damage



Figure: The panel of Ecosystem and Loss & Damage session

Host: ICCCAD and University of Liberal Arts Bangladesh (ULAB)
Cohost: Jointly hosted by Jagannath University and Islamic Relief
Chair: Mr. Shafiqul Islam, Center for Sustainable Development, ULAB
Moderator: Mr. Joy Bhowmik, Center for Sustainable Development, ULAB
Presenters: Mr. Md. Maksudur Rahman: Action Research on Eco Village in the Sundarbans Coastal Region of Bangladesh
Mr. Shantanu Kumar Saha: Cultural Resilience in Complex Mangrove Ecosystem Affected by Climate Change: Lessons from Sunderbans in Bangladesh
Mr. Habib Torikul: Assessing Climate Induced Non-Economic Loss and Damage in Coastal Fisher Folk Communities of Bangladesh

The session started with a short description of the Center for Sustainable Development, ULAB, which has been working from the very beginning for loss and damage, ecosystems, teaching sustainable agriculture, and green business. The session included three presentations regarding the issues related to ecosystem and loss and damage. The first paper described how eco-villages can be created through action research whereas the second paper talked about the linkage between cultural resilience and climate change adaptation in Sundarbans Bangladesh. The last presenter showed the non-economic loss and damage in coastal fisher folk communities of Bangladesh through a video and highlighted that non-economic loss and damage are in ways higher than economic loss and damage but often not properly calculated.

The first presentation on Action Research on Eco Village in the Sundarbans Coastal Region of Bangladesh, mainly described a project called Eco-Village which has been implemented in Dacob, Khulna. The project had three components: green housing, green business, and green education. Under green housing the main activity was to support the community with pure drinking water and renewable energy; under green business, eco-tourism activities; and under green education, teaching green harvesting techniques. The main message of this presentation through the example of Eco-Village project was that, for sustainable development measures should be taken keeping the conservation of ecology in mind.



Figure: The participants are learning the Loss and Damage on the Ecosystem

The second presentation was “Cultural Resilience in complex mangrove eco system affected by climate change: Lessons from Sundarbans in Bangladesh”. The main purpose of this study was to link cultural resilience with climate change adaptation. The project location was Botiyaghata and Dacob, Khulna. For protecting the mangrove ecosystem through cultural resilience three silent features are needed- selective extraction, limited access and metaphors to accept apex predators. The final message of this study was- traditional ecological knowledge can lead to appropriate cultural adaptation and through ecological resilience we can develop better climate resilience.

The last paper was “Assessing climate induced non-economic loss and damage in coastal fisher folk communities of Bangladesh.” It was based on a qualitative study which covered 2 villages of Barguna Upazila. For assessing the non-economic loss and damage of fisher folk communities they determined loss of life, culture, and dignity. Finally, educational, cultural, psychological, religious impacts of climate change were identified through the variables. To reduce these losses the study came up with some recommendations, such as ethnographic study, and the provision of risk insurance.

Local Solutions on Natural Resource Management



Figure: The panel on Natural Resource Management

Host: Flood Hazard Research Centre (FHRC)
Chair: M. Anisul Islam, Director, Center for Natural Resource Studies (CNRS)
Moderator: Dr. Paul Thompson, Senior Research Fellow, Middlesex University
Presenters: Mr. Md. Emdad Hossain: Nutrient-rich Fisheries Enhancement in Seasonally Flooded Rice Fields in Southern Coastal Bangladesh
Dr. Parvin Sultana: Cooperation and Conflict Over Swamp Forests in Bangladesh
Ms. Fatima-tuz-Zahra: Integrated Water Resource Management of Catchment Consisting Kushiyara River and Haors, Sylhet, Bangladesh

Dr. Paul Thompson from Middlesex University moderated the session by giving an overview of natural resource management issues in Bangladesh, as well as introducing each of the speakers. Approximately 25 people were in attendance at this session.

Mr. Md. Emdad Hossain began his presentation by giving background information on how biodiversity in the country is changing. While seasonal rice yields have increased, fish production and overall biodiversity has desecrated as has the number of aquatic species migration into the floodplains during the monsoon floods. The objective of his study was to increase the number of small indigenous species of fish in rice fields through developing microhabitats. For his study, he chose three sites in southern Bangladesh: Noikathi-Kathipara, Shuktagar, and Joykul-Biraljuri. In these sites, he set up sets of three rings (1m deep with a diameter of 76cm). By creating these microhabitats, fish production was 49% higher than controlled environments; individual farmers harvested an average of 6.6kg fish from each ring; a rare fish species, *Notopterus notopterus*, was found in one of the study sites after 10 years; and 10 small indigenous species contributed above 57% of the fish production. Mr. Hossain then talked about the possible impacts of climate change on overall fish production: that rising temperatures, prolonged drought and/or erratic rainfall would likely affect the quantity of fish production. He

explained they have data for fish that died that were located close to dry or near dry rice fields, where higher temperatures were recorded. He suggested constructed microhabitats might be one solution since they offer favorable and even better conditions; and may allow for fish production to continue in the face of climate change.

The next presentation was by Ms. Parvin Sultana and focussed on swamp forest cooperation and conflict in Bangladesh. She started by explaining that the freshwater swamp forest of *Hijal* and *Koroch* is unique to the northeast haors [wetlands] of Bangladesh. While these forests once covered much of the haors, they have largely been cleared and almost disappeared. Only recently have initiatives emerged to restore these forests. Ms. Sultana explained the various ecosystem services these forests contribute, including acting as a carbon sink, building the resilience of the overall ecosystem and protecting nearby villages from floods. She then gave a few examples of these conservation forest projects in Hakaluki haor, Sunamganj haor, and Ratargul. Hakaluki haor is the single largest haor in the country. Although in 1950 the haor contains a mature forest, by 1999 most of the trees had been cleared for timber, fuel, and brushpiles. Various projects since have attempted to restore the forests. Currently, the new growth is protected by guards who provide constant surveillance, and marked with red flags to indicate buffalo and cattle are banned from grazing in this area. While the swamp forest is recovering, there is still some conflict in the region: outsiders will still cut trees and attempts to enforce protection using local informal village courts have failed since parts of the new growth areas were initially allocated to landless people for agriculture. She then gave similar case studies of three other forests where conservation efforts are being challenged by local land contestations. She concluded that while communities need to play a leading role in swamp forest restoration, in themselves they are not sufficient because of internal conflicts that exist within communities. Ultimately, long term tenure rights and responsibilities need to be formally recognized by the government to ensure successful restoration, which will require the challenging coordination of multiple agencies.

The final presentation was given by Ms. Fatima-Tuz-Zahra on creating an Integrated Water Resource Management plan to manage and resolve water conflicts in both Kushiya river and the haors of Sylhet in Bangladesh. She explained that Kushiya is a very dynamic river that stretches more than 130 km, and provides to many livelihoods and ecosystems. At present, likely issues the catchment area of this river will be face are increased population, increase river erosion that she attributed to climate change, and the management of water flow in countries upstream. Her study found the best solutions were to create a storage basin to address insufficient flow during the lean periods; and sandbags to prevent river erosion. Given the importance of the catchment area, it is important to optimize the ecosystem's jubilation for the future safety of people living in the area. For this to occur, the water management issues need to be addressed from a holistic perspective, as opposing to different implementing agencies focusing on one or two issues.

During the question and answer session, one member of the audience asked about the challenging of needing an interdisciplinary approach for both natural resource management and climate change — given researchers and practitioners need to know about both ecosystem sciences, as well as local political economy. In general, the speakers responded by explaining they attempt to produce knowledge in collective settings so that different disciplines are represented and contribute to the overall understanding of a natural resource management problem.

The session chair, Mr. M. Anisul Islam, concluded the event by explaining while Bangladesh has reached many development indicators, the country has not reached the indicators for everyone and that studies indicate the poorest of the poor have not been reached, which is important because their lives still depend directly on natural resources. As such, proper natural resource management is required to secure their livelihoods.

Local Solutions on Renewable Energy



Figure: The panel of Renewable Energy session

Host: Gobeshona Renewable Energy Subgroup
Chair: Mr. Shakeb Nabi, Country Director, Christian Aid Bangladesh
Discussants: Professor Dr. Hamidul Huq, United International University
Professor Dr. Mizan R Khan, North South University
Professor Dr. Khosru M. Salim, Independent University of Bangladesh
Presenters: Mr. Sami Shahid Al Islam: Governance of Solar Mini-grid: A case study of Shouro Bangla Solar-Diesel Hybrid Mini-grid in Raipura, Narshingdi
Mr. Ankon Ivan: Stakeholder Scenario and Mapping in the Renewable Energy Sector of Bangladesh
Ms. Aziza Sultana: Peer-to-Peer Solar Trading in Remote and Climate Vulnerable Area

Recent study has shown that fossil fuel consumption has increased to 70%. Among several types of renewable energy, Bangladesh has access to ocean and solar energy. 51.4% of the rural area do not have access to power. There is national policy named SREDA which is Energy Efficiency and Conservation Master Plan up to 2030. Stakeholder mapping is the root of the tree of sustainability. Methodology: WHO, WHAT, HOW, WHY. There are more loans that grants. IDOL and GIZ gives loan or funds to NGOs or institutions. \$1 million was given for research from World Bank. Other sectors can be included with this project and further research can be done.

With Bangladesh government and NGOs partnership, solar power projects were planned. Using solar energy, direct current electricity is produced. Methodology: Individual interview and key informative interview. The project initiated 550 homes, but only 500 connections were established and now 851 homes are connected to solar power that is around 12km radius coverage. The rate of use of electricity is 30 Bangladesh Taka per kilowatt. Negative factor are extreme load due to increased dependency.

Therefore, the cost of production rose. Excessive pressure on inverter caused efficiency issue, overheating, lacks ventilation and interruption. The positive sides are the capacity is higher and high powered appliances are used, it's expensive and uninterrupted (if not overloaded).

There are 5 million homes accessed to solar power yet 28 million without power. Average rent for light and mobile charging is US\$ 3.5/kWh and US\$ 10.5/kWh respectively. The problem is that solar power gives us opportunity to use 300,000 kWh which cannot be stored and the solution Energiewende 3.0 which creates platform where solar powered home user and non-user can exchange electricity. This will save money, gain flexibility and have home income. Using peer-to-peer box with solar grids which is built bottom-up. The device is plug and play, net monitoring and mobile money enabled. Non-SHS saves money twice as much as SHS.

Theories are generated from practices. Char people have remittance from abroad as a result the demand has increased (high consumption behavior) where they use solar power. There are unpaid dues of the installment fee process taken for the use of solar power. Green behavior will result in effective use of renewable energy. People or communities are moving towards renewable energy. The demand for coal has already to decrease. Coal has more cost due to the pollution it causes when burned. It was a commitment that by the year 2050, least developing countries will achieve 100% renewable energy use. In reality, currently it is 3% and it will reach to 7% by the year 2020. We can make things happen by pushing the government. In the beginning, solar power was a test of 10watt/20watt. Now, solar power run big home appliances. Peer-to-peer is practically difficult and not feasible financially. Finding more ways to use renewable energy and formulate policy to maximize efficiency and benefit.

Video as a Research Tool

The Video Sessions were added for the first time at Gobeshona Conference. The objective was to use the video as a tool to disseminate research among mass population. The researchers were requested to explain the plan of how to reach the target audience and the possible implemented agencies.

Host: International Centre for Climate Change and Development (ICCCAD)
Chair: Dr. Saleemul Huq, Director, ICCCAD
Presenters: Ms. Priodarshine Auvi: A Selfie Brings About Happiness
Mr. Habib Torikul: Boyati's Story: Climate Induced Loss and Damage of the Coastal Fishers in Bangladesh
Mr. Michael Chew: Solution based photo-storytelling: participatory visual approaches to North-South dialogue in urban climate resilience
Istiakh Ahmed and Tasfiq Mahmood: "Foresaken Land: A story of land losses in Bangladesh"

This session, facilitated by Dr. Saleemul Huq highlighted film as a medium for telling stories to enhance knowledge about climate change. Video was a new type of session for Gobeshona and was very successful. Four films were presented by amateur filmmakers who approached the issue of climate change in different ways.



Figure: Dr. Saleemul Huq explaining how videos can be utilised as a research dissemination tool

The first, by Ms. Priodarshine Auvj, titled, “A Selfie brings About Happiness” promoted a project focused on getting female farmers connected with technology to change their lives. Women were given smart phones which helped them connect with local government offices to get information about their rights and opportunities. This was an example of participatory action research put together by Monash University. <https://youtu.be/s4EIAaGJp3c>



Figure: Researchers are explaining how video would reach out mass people to aware climate change and riverbank erosion.

The second, “Boyati’s Story: Climate Induced Loss and Damage of the Coastal Fishers in Bangladesh” by Mr. Habib Torikul focused on one fisherman’s experience with depleting fish stocks where he lives on the coast of the Bay of Bengal. Furthermore, increased frequency of cyclone warnings have prevented them from fishing more than three months out of six. Heavily featuring Boyati discussing his struggles in an individual interview, the video also noted that many fishermen are now drowning in loans because of their deteriorating financial condition. <https://youtu.be/eW1VT1qG6yQ>

The third, Michael Chew’s film “Solution based photo-storytelling: Participatory visual approaches to North-South dialogue in urban climate resilience” told the story of a photo-voice project bringing agency to children to tell their own perspective on climate change solutions. Photo-voice is a visual method that grants agency to the individuals who use it. The video primarily featured shots of children learning how to use cameras, taking photos, and preparing ways to present their photos with solutions for the future.

The last film by Istiak Ahmed and Tasfiq Mahmood, “Foresaken Land: A story of land losses in Bangladesh,” explored riverbank erosion and the displacement of communities. Studies suggest

preparing displaced people for more riverbank erosion in future whereas people are living in great anxieties. To watch the video online: <https://www.youtube.com/watch?v=sI09q3DdKl0>

The session revealed that video is a powerful research dissemination tool which can easily transfer knowledge. It requires a strategic plan to reach-out the target audience in order to create an impact.

Video on Climate Awareness, Mitigation and Justice

Host: International Rice Research Institute (IRRI)
Chair: Mr. Rezaul Karim Siddique, Anchor of BTV's Mati- O-Manush Program
Presenters: Dr. Ahmad Salahuddin, Consultant, IRRI: Alternative Wetting and Drying (AWD),
Mr. Nabir Mamnun: The Citizens' Science of Climate in Sylhet Division,
Mr. Mizanur Rahman Bijoy: Deserving Climate Justice: The Tale of Climate Induced Loss and Damage in Bangladesh



Figure: The panel of the second video session and the video screen

Dr. Ahmad Salahuddin showed Alternative Wetting and Drying (AWD) technology which can save water usage in rice production and reduce GHGs emission. The video targeted Scientists, environmentalists, extension agents to be promoted among the farmers. Especially, farmers from the drought-prone areas could be benefited. The video publicly visible at YouTube <https://www.youtube.com/watch?v=tfKWKfagfFs&t=14s>

Mr. Nabir Mamnun's video showed how the 'citizen science' is helping in co-producing climate knowledge with communities in northeast Bangladesh. The initiative highlighted the learning and capacity building associated with citizen science. It enlisted a network of non-scientist volunteers to help collect and analyse data. To watch the video <https://www.youtube.com/watch?v=sMuvVq-4ICo>

Mr. Mizanur Rahman Bijoy showed that the people of this country have long experiences in dealing natural disasters with tremendous spirit and competence. Now Bangladesh is facing changing pattern of climatic system, appears as uneven and untimely disasters, increasing loss and damage of lives and properties and of course hindering development.

To deal with the climate-induced loss and damage, people seek for climate justice. It has shown experts opinions, field level experiences of community people who suffer extreme due to adverse impacts of

climate change and showcase stakeholder opinions who deal with matters of climate-induced loss and damage and help people to cope with this undesirable situation.

To watch the video online: <https://www.youtube.com/watch?v=UKJwuugcgGE>

Science Policy Dialogue on Climate Finance



Figure: The panel of Climate Finance in the Science – Policy Dialogue day

Host: Bangladesh Center for Advanced Studies (BCAS)
Chair: Dr. Atiq Rahman, Executive Director, BCAS
Key Note: Mr. Khandaker Fokhrul Alam, Climate Change and Finance Expert, BCAS

Dr. Atiq Rahman, executive director, Bangladesh Center for Advanced Studies (BCAS) started the session stating that, climate finance has become one of the most discussed topics in international climate negotiations. In Bangladesh, there are three leading organizations: ICCCAD, BCAS and C3ER have brought the issue forward. Government of Bangladesh is also doing well in managing the climate finance. The Keynote of this session was on the state of climate finance in Bangladesh, the prevailing problems in this sector and possible solutions of these problems.

The key note paper showed the state of climate finance in Bangladesh. Developed countries have been financing and mobilizing the funds for developing and under-developed countries. The money has to be new and additional, it should finance mitigation and adaptation measures, the financing instrument should be grants, the source of funds be public or private, and developed countries should provide this money to developing countries. The prevailing problems in this sector are that the majority of the money is allocated for mitigation measures, not adaptation measures, and there remains a huge financial gap between the money given and the money used. The main message of this study was to ease up the bottlenecks, and to increase transparency and accountability both on the donor's side and the receiver's side.



Figure: The audience taking the key-points of climate finance in Bangladesh

The second presenter, professor Dr. Mizanur Rahman, highlighted the current problems of the financing mechanism. The developed countries who are the main emitter of GHG gases are indifferent towards the global formats taken to follow for transparency.

The discussion session was very comprehensive where many of the participants were keen to know how much money actually goes to the target community, and whether there is any study which shows how much the local people contribute from their own for adaptation. Dr. Atiq Rahman replied in response to this, saying that in Bangladesh no such study has been done but globally IIED studied that only 10% of the total fund goes to the target community and local community contributes more than 200 billion per year for taking adaptive measures.

Science Policy Dialogue on Integrated Assessment in Deltas

Host:	DECCMA Project, IWFM, Bangladesh University of Engineering and Technology (BUET)
Chief Guest:	Dr. Shamsul Alam, Member (Senior Secretary), GED, Bangladesh Planning Commission
Key Note:	Dr. Md. Munsur Rahman, professor, IWFM, BUET
Moderator:	Dr. Mashfiqus Salehin, Professor, IWFM, BUET

The keynote speaker began his presentation saying that deltas are sensitive and delicate environments, and considered to be food baskets for many nations. The paper showed how integrated assessment has been done in ESPA and DECCMA Project. In both cases a particular framework has been followed which has socio-economic, bio-physical etc. aspects. DIEM model has been used for integrated assessment

which is an interdisciplinary tool. This integrated assessment process not only has improved the quality of assessment process in our country but also helped building the capacity of both the researchers and government officials.



Figure: The panel of the science – policy dialogue session named Integrated Assessment in Deltas

All the panel discussants have highly appreciated the paper and said that, this experience of these two projects have not only been able to bring changes in decision making but also have brought scientific results. One output of DECCMA project was migration. It showed that people migrate for climate change. The panelist also added that in order to bring major changes in policy making a nexus between the researchers and policy makers should be made. Data availability, institutional rearrangement, and policy leadership are also important.

All the participants actively joined the discussion session by appreciating such initiative. Miss Tazrin Ahmed from Bengal Institute mentioned that, similar kind of integrated assessment has been done in neighboring countries like China, so taking lessons from their experience might help our work. In the issue of creating nexus between the scientists and the policy makers. Dr. Saleemul Huq said, Gobeshona has been creating a platform for it for the last four years by having science conference and science policy dialogue. The session chair also praised Gobeshona for building bridges among the students, practitioners, policy makers, and private sectors.



Figure: Dr. Saleemul Huq asking question to the panel in the science policy dialogue day

Science Policy Dialogue Towards Green Growth Strategy

Host:	Adam Smith International, EDGG
Keynote:	Dr. Sadiq Ahmed, Vice Chairman, Policy Research Institute
Chief Guest:	Dr. Shamsul Alam, Member, General Economics Division (GED), Bangladesh Planning Commission
Moderator:	Mr. Suvojit Chattopadhyay, Country Manager, Adam Smith International
Discussants:	Mr. Mejbah Uddin, Former Senior Secretary, ERD Dr. Saleemul Huq, Director, ICCCAD

This session focused on developing a green growth strategy for Bangladesh. Speakers highlighted the nexus between climate change and development and emphasized the need for Bangladesh to pursue climate solutions along with its goals for economic growth. As moderator Suvojit Chattopadhyay of EDGG noted, this conversation on green growth goes beyond addressing climate change.

Dr. Sadiq Ahmed of the Policy Research Institute noted that Bangladesh has had great development success so far, but that it faces many obstacles to sustainable development such as high vulnerability to disasters and climate change risks. Furthermore, he pointed out that Bangladesh has been rated 169th out of 178 countries in environmental performance, despite having an abundance of environmental policies in place. For this reason, he said, the 2041 Perspective Plan is a huge opportunity to put the country's development goals in line with the Sustainable Development Goals and ensure that future

growth is green. Finally, Dr. Ahmed argued that a green growth strategy cannot be run exclusively out of Dhaka, and that it must be decentralized.



Figure: The panel in the science-policy dialogue on developing a strategy towards green growth in Bangladesh

Majbah Uddin also underscored the point that Bangladesh needs to work on the implementation of policies, and emphasized that getting the price right was extremely important in terms of strategies. He noted that the “whole of government” has not been working for Bangladesh and that there is still great need for coordination on green growth across government ministries.

Dr. Saleemul Huq then made three key points: Bangladesh must work on attracting investment from the private sector, that the country needs to be accountable for its own pollution, and that Gobeshona will develop a new program on green growth focused on the private sector and youth. He also emphasized that Bangladesh has been largely dependent on policy and regulation, and that implementation must be improved.

Finally, the honorable guest Shamsul Alam wrapped up the session, stating that Bangladesh’s growth could be higher if the country adopts a green growth strategy. He stated that the primary thing needed to do this is political buy-in, though there are also issues with budget in this area. He concluded by noting that the parliamentary committee and political masters must be brought into these conversations, even if it is difficult to get them at the table.

Concluding Session



Figure: Dr. Saleemul Huq was summarizing the Gobeshona4 Conference

Host:	Independent University, Bangladesh (IUB) and ICCCAD
Chair:	Prof. M. Omar Rahman, Vice Chancellor, IUB
Conference summary:	Dr. Saleemul Huq, Director, ICCCAD
Keynote:	Dr. Andrew Norton, Director, International Institute for Environment and Development (iied)
Speakers:	Dr. Atiq Rahman, Executive Director, BCAS
Chief Guest:	Sudipto Mukerjee, Country Director, United Nations Development Programme (UNDP)
Vote of Thanks:	Mr. Rashed Chowdhury, Chairman, Board of Trustees, IUB

The concluding session began with Dr. Saleemul Huq noting the highlights of the successful Gobeshona 4 conference. He summarized that there were 29 sessions, featuring 45 research papers, 6 keynotes, and 7 videos. In total 404 people attended the conference, and about 30 of those were international participants. In keeping with the norms of Gobeshona, Dr. Huq then outlined four commitments for next year: reaching outside Dhaka to different climate vulnerable zones on Bangladesh, creating a green growth research and action programme, developing a Gobeshona Climate Services Academy, creating a Gobeshona group on communicating research, and developing a multi-scalar youth leadership programme.

Dr. Atiq Rahman then emphasized the importance of building on research and promoting innovation because the impacts of climate change are not going away, even if the country successfully develops. He noted that Bangladesh literature on climate change has so far been written largely by non-Bangaldeshis, so we need to work on Bangaldeshis getting research into peer-reviewed journals. Finally, Dr. Rahman pointed to the need to pursue intervention and enterprise to turn the negative impacts of climate change into an opportunity.

Next, was the keynote of Dr. Andrew Norton, the director of IIED, focused on the role of social science research and climate change action. His speech is described in the keynote section.

Mr. Sudipto Mukerjee of UNDP then drew attention to the nexus between poverty and climate change which is summarized in the “UNDP's Interest on Gobeshona” section.

Next, Dr. Omar Rahman of IUB emphasized the importance of accepting uncertainty in research and of effectively communicating that uncertainty to policymakers in a way that does not limit the information’s credibility. He also noted the importance of universities in building capacity and creating the next generation of thinkers. Dr. Rahman then pointed to the potential for Gobeshona to reach larger constituencies, not only those who are doing climate change research, so that broader groups can have a better understanding of climate change and what is at stake. He summed up his comments saying the research is complicated because the world is complicated, and we shouldn’t dumb it down.

Last, Rashed Chowdhury gave the final word of thanks and expressed his delight at being able to have the university host the Gobeshona conference from its inception. He expressed his pride that IUB is associated with ICCCAD. Finally, he acknowledged the distinguished guests and closed the conference.



Figure: The group photo with the conference concluding panel and Gobeshona Team

International Participants



No	Name	Institutional Affiliation	Country
1.	Mr. Ajay Mathema	Principal, School of Environmental Science and Management (SchEMS) Pokhara University, Kathmandu (sponsored by UNEP)	Nepal
2.	Om Nath Katel	Senior Lecturer, College of Natural Resources, Royal University of Bhutan	Bhutan
3.	Zewdu Eshetu Asfaw	Climate Science Centre, Adis Ababa University	Ethiopia
4.	Dr. Noah Makula Pauline	Associate Director, Centre for Climate Change Studies, University of Dar es Salaam	Tanzania
5.	Dr. Andrew Norton	Director, International Institute for Environment and Development(iied)	UK
6.	Mr. Andy Parker	Project Director, SRM Governance Initiative	Germany
7.	Dr. Maria Elizabeth Kett	Head of Research, Leonard Cheshire Disability and Inclusive Department Centre	UK
8.	Dr. Alice Billiat	Docteure associée / Sciences Po-CERI Research Fellow / IRIS	France
9.	Daniele Falzon	PhD Student, Brown University, USA	USA
10.	James Joseph Totton	Visiting Researcher, ICCCAD	UK
11.	Arianna Flores Corral	Climate Change & Education Fellow & Blog Manager, Global Development Network, New Delhi	Mexico
12.	Francesco Obino	Head of Programmes, Global Development Network, New Delhi	
13.	Ms. Mélody Braun	Columbia University	USA
14.	Mr. John Furlow	Deputy Director, Humanitarian Assistance and International Development International Research Institute for Climate an Society, Columbia University	USA
15.	Mr. Nachiketa Acharya	Associate Research Scientist, International Research Institute for Climate an Society, Columbia University	USA
16.	Ms. Maya T Miller	Masters of Arts Candidate, Science Concentration Columbia University Graduate School of Journalism	USA
17.	Dr. Andrew Baldwin	Associate Professor in the Department of Geography, Durham University	UK
18.	C. Emdad Haque PhD	Professor, Natural Resources Institute, University of Manitoba	Canada
19.	Mr. Saleh Ahmed	Ph.D. candidate at the University of Arizona	USA
20.	Mr. Bishwajit Roy	Ph.D. Candidate, Arid Lands Resource Sciences & Global Change Graduate Research Associate, Joint University of Arizona & Columbia University International Research and Applications Project The University of Arizona	USA

UNDP's Interest on Gobeshona



Mr. Sudipto Mukerjee

Country Director, UNDP Bangladesh

With over two decades of experience in international development, Mr. Mukerjee joined UNDP Bangladesh as Country Director in December 2016. Previously, he worked as Country Director in UNDP Sierra Leone and Deputy Country Director in UNDP Iraq.

As an architect and urban planner, before joining United Nations, Mr. Mukerjee worked for the Government of India and the UK Department for International Development (DFID).

Mr. Sudipto Mukerjee of UNDP was a special guest at the concluding session at Gobeshona4 conference. He drew attention to the nexus between poverty and climate change, and highlighted some of the UNDP programs in Bangladesh that bridge these two issues. He praised the success of the Gobeshona conference and committed UNDP's sponsorship for the youth competition that Dr. Huq outlined in the commitments for the coming year.

Young Researcher Certificate Award Ceremony



Figure: Gobeshona Young Researchers receiving certificate from Dr. Saleemul Huq

The Gobeshona Young Researcher Programme was conceptualized in 2014 to train Bangladeshi young professionals in publishing climate change research papers. It started by analyzing the authors of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC). It is found that Bangladeshi researchers need significant improvement on quality writing and publishing to be cited in forthcoming IPCC reports. To fill up the gap, Gobeshona designed a year-long fellowship programme of publishing climate change research through four workshops along with one-to-one mentorship.

The first workshop provides valuable information on how scientific research gets published in peer reviewed journals. It helps the participants on making a one year plan for publishing their manuscript. The second workshop analyzes whether the data collection method supports the research findings. The third workshop focuses on quality writings and submitting to journals. In the final workshop, participants share experiences with reviewers and editors on the pathway of publishing.

Status of the fourth batch of Gobeshona Young Researchers

Name	Research Title	Journal Name	Update
Mohammad Mahbubur Rahman	Linking Rural-Urban Migration and Changing Urban Land Use and Exploring its Impact on Dhaka City, Bangladesh	Migration and Development	Published
Md. Sanaul Haque Mondal	Interacting effects of population and climate dynamics on changing land cover of Sundarbans mangrove forest in Bangladesh	Acta Geographica Debrecina Landscape and Environment	Published
Md. Arif Chowdhury	Community Based Management in Village Common Forest in Chittagong Hill Tracts of Bangladesh: Adaptation against Climate Change	Forest Science and Technology	Responding the comments
Md. Ekhtekharul Islam	School Readiness and Adaptation of School-age Children to Climate Change in Some Selected Areas of Bangladesh	International Journal of Climate Change Strategies and Management	Responding the comments
Kazi Nabila Haque	In consideration of climate change, characterization and evaluation of monsoon rain water for drinking purpose in Khulna city corporation area, Bangladesh	Journal of water and climate change	Under Review
Md. Hafizur Rahman	Case Study on Climate Change Loss & Damage and Migration Pattern in Satkhira District.	Springer	Under Review
Naimul Islam	Scenarios of Climate Change Impact and Vulnerability on Hilsa Fish and Fishermen Livelihood; A Billion Dollar Fishery in Bangladesh	Not Submitted	Working on the manuscript
Marzia Shafin	Loss and Damage Perspective of Tropical storm ROANU	Not Submitted	Working on the manuscript
A. S. M. Nadim	Climate Induced Migration: Understanding the Status of Basic Humanitarian Needs and Responses to Poor Migrant People of Barisal City	Not Submitted	Working on the manuscript
Hasan Mohammed Asiful Hoque	Assessment of soil quality in the southern coastal region of Bangladesh	Not Submitted	Working on the manuscript

Conference Dinner

In the evening of 8th January 2018, the opening dinner and the young researcher certificate award ceremony held at Ascot Palace, jointly organized by the Christian Commission for Development in Bangladesh (CCDB) and the International Centre for Climate Change And Development (ICCCAD). All the conference participants were invited at the ceremony and around 200 participants attended the dinner. Ms. Ina F. Islam facilitated the event and thanked the participants for their enthusiastic support; she also welcomed the guest to stay with Gobeshona for the upcoming days of the conference. Then she briefed the young researcher project and Dr. Saleemul Huq awarded the researchers of the fourth batch. The dinner exclusively engaged the participants in discussions which could bring up new ideas and solutions for building climate resilient Bangladesh.



Figure: Opening dinner with all participants

Gobeshona4 at the Media

Dhaka Tribune

[Global warming pose risk of cholera outbreak in Bangladesh](#) by Afrose Jahan Chaity on January 08, 2018



[Climate change is a matter of survival](#) by Meraz Mostofa on January 11, 2018



[Experts: Haor regions need short-duration rice varieties to avoid crop damage in flash flood](#) by Mahadi Al Hasnat on January 08, 2018



[Gobeshona conference stresses capacity building to tackle climate change](#) by Mahadi Al Hasnat on January 11, 2018



[Experts: Geoengineering, quality research can help mitigate climate change](#) by Afrose Jahan Chaity on January 11, 2018



[Creating climate services in Bangladesh](#) by Melody Braun & John Furlow on January 11, 2018



[We need a holistic approach to combat climate change and extreme event vulnerability](#) by Afrose Jahan Chaity January 10, 2018



[Taking the lead on green growth](#) by Suvojit Chattopadhyay on January 11, 2018



[Study: Bangladesh has green policies but lags in execution](#) by Mahadi Al Hasnat on January 10, 2018



[LDC universities build alliance to stop dependence on western climate experts](#) Mahadi Al Hasnat January 10, 2018



Microhabitat plays an important role in indigenous fish production

By Afrose Jahan Chaity on January 10, 2018



Disability: A neglected issue within climate change?

By Maria Kett, Ellie Cole on January 11, 2018



Experts: Climate induced non-economic loss needs to be addressed

by Mahadi Al Hasnat on January 10, 2018



Pathways to a low-carbon, hunger-free Bangladesh

by Tribune Desk on January 11, 2018



Social science research and the climate action challenge

by Andrew Norton January 11, 2018



To read these articles:

<http://gobeshona.net/gobeshona4/>

The Daily Star

[Enhancing knowledge for research-backed policymaking](#) by Saleemul Huq

January 17, 2018



[2018 may be the tipping point for tackling climate change](#) by Saleemul Huq on January 10, 2018



[Bangladesh has taken some important steps for long-term planning at the national level in order to achieve development goals](#) By Saleemul Huq on January 24, 2018



Gobeshona4 in the Web



[DECCMA Special Session on Science-Policy Dialogue at the 4th Gobeshona Conference](#) by Mashrekur Rahman On 18 January 2018



[Creating Climate Services in Bangladesh by](#) Elisabeth Gawthrop on January 31, 2018





[The 4th Annual Gobeshona Conference: Steps](#)



Independent University,
Bangladesh
(IUB)

[4th GOBESHONA Annual Conference concludes at IUB](#)



Social Media Insight: #Gobeshona4

Most Active Social Media Authors			
Author	Site	Influence	Mentions
Gobeshona		2936	21
ICCCAD		6835	16
06Nahian		113	13
SaleemulHuq		19234	10
Cnazmul78		2690	8
Sadman22Monsur		136	7
MakameMahmud3		233	7
ICCCAD		78	7
MathemaAjay		37	5
Danielle_Falzon		101	5

Video Live Streaming & Feedback

Live Streaming



Overview



#Gobeshona4



Visit our YouTube channel:

<https://www.youtube.com/ICCCADB>

Feedback



Visit our YouTube channel:

<https://www.youtube.com/ICCADB>

List of Contributing Members at the Conference

Institution	Hosted session/Contribution at Gobeshona4
International Centre for Climate Change And Development (ICCCAD)	Inaugural, Gobeshona Experience, Dry Barind Areas, International Keynotes, Video as a Research Tool, SDG 13, Concluding session, Young Researcher Awards
Christian Commission for Development in Bangladesh (CCDB)	Agriculture and Food Security, Adaptation Technology, Adaptation Technology
The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) and International Organization for Migration (IOM)	Health & Migration
Adam Smith, EDGG	Sustainable Growth
Christian Aid and University of Liberal Arts Bangladesh (ULAB)	Coastal Areas
Oxfam, Christian Aid & Islamic Relief	Resilient Livelihood
Wageningen University and Research, Practical Action & Islamic Relief	Urban & Modelling
Bangladesh Institute of Social Research (BISR), Christian Aid & Oxfam	Mitigation & Gender
University College London (Dr. Maria Kett)	Climate Change & Disability
International Rice Research Institute (IRRI)	Videos on Climate Awareness, Mitigation and Justice
United International University (UIU) & Jahangirnagar University	River & Haor
Shahjalal University of Science and Technology (SUST) and Khulna University	Forest & Hills
United International University (UIU), Islamic Relief Bangladesh, Jagannath University & Jahangirnagar University	Disaster Management
University of Liberal Arts Bangladesh (ULAB), Jagannath University and Islamic Relief Bangladesh	Ecosystem & Loss And Damage
Gobeshona Renewable Energy Subgroup	Renewable Energy
Flood Hazard Research Centre (FHRC)	Natural Resource Management
CIMMYT	Climate Services
Practical Action & Islamic Relief	Least Developed Countries University Consortium on Climate Change
BCAS	Climate Finance
DECCMA – Project, IWFM & BUET	Integrated Assessment in Deltas
Adam Smith, EDGG	Green Growth
MoEF, GIZ, Wageningen University & Research	National Climate Risk Assessment
CCDB and ICCCAD	Conference Dinner
ICCCAD	Conference Bags
Oxfam	Paper Folders
Practical Action	Pen and Notepad
International Rice Research Institute (IRRI)	Volunteer T-shirts
USAID	Gobeshona Programme Fund

Gobeshona4 Volunteers

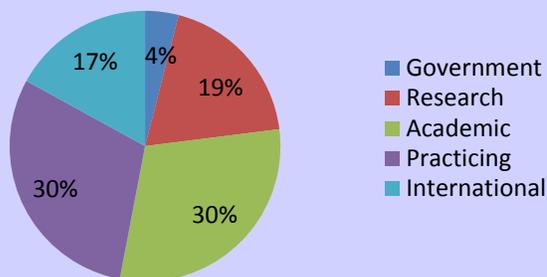


Name	Affiliation	Institutions
Md. Sohanur Islam	Student	South Asia University
Mir Hosnay Tamanna	Student	North South University
Tania Rahman	Student	North South University
Md.Junaed Hossain	Student	Dhaka University
Maliha Tabassum	Student	Independent University, Bangladesh
Anamika Bari	Student	North South University
ABM Alif Hassan	Student	American International University, Bangladesh
Inzamamul Haque Alif	Student	Independent University, Bangladesh
Md. Fahad Elahi Mohian	Student	Eastern University , Dhaka
Benayok Sikder Shams	Student	Independent University, Bangladesh
Anika Tabassum	Student	Independent University, Bangladesh
Md. Tanvir Ahmmmed	Student	South East University
Sumaiya Tahmin Bushra	Student	Independent University, Bangladesh
Autoshi Tanzim	Student	BRAC University
Reevu Austin	Student	Independent University, Bangladesh
Noor-Elahi Nahiyen	Project Assistance	ICCCAD
Hafizur Rahman	Project Officer	ICCCAD

Publication



Gobeshona Steering Committee Members Type



To join Gobeshona visit



www.gobeshona.net

Gobeshona booklet was printed in hardcopies and distributed among the conference participant to aware how Gobeshona is making research into use. It compared the scoping report of January 2014 with the present status of January 2018. The booklet is named "Research into Action" as the present motive of Gobeshona Climate Change knowledge Platform is to implement research based solutions.

The booklet describes the activities of Gobeshona did in the past four (4) years. Gobeshona is governed at The International Centre for Climate Change And Development (ICCCAD) with a Steering Committee of 46 members. It hosted 35 seminars on pressing climate change research solutions studied by different member institutions. Gobeshona organized four conferences bringing together stakeholders and globally recognized climate change speakers.

The platform emphasizes on the youth of the country. The Young Researcher workshop trained young professionals on publishing climate change research on international peer reviewed journals. Besides it works with the school going children with interesting activities and competitions.

The Learning Hub Events are special workshops series organised for the Government Ministries dealing with national planning, economy, environment and local governance.

Gobeshona platform is expanding by forming sub-groups on resilience livelihood, adaptation technologies, information and communication technologies and renewable energy.

Dr. Saleemul Huq summarized the outcome at the end of the booklet focusing on Science Policy Dialogue, Compendium on Adaptation Technology, LUCC initiatives and Climate Finance Transparency Mechanism.

Photo Gallery



Figure: Gobeshona Core Team



Figure: Networking and collaboration



Figure: The vibrant volunteers at the registration desk



Dr. Maria Kett updating her research findings on how climate change affects disable people



Figure: Comms Team of Gobeshona4



Figure: Confirming attendance of the participants



Figure: Interactions among the international participants



Figure: Organisers' caught in a good mood during their busy time

Gobeshona4 Album at **flickr**

<https://www.flickr.com/photos/icccadarchive>

The proactive Gobeshona4 participants -1



The proactive Gobeshona4 participants -2



The proactive Gobeshona4 participants -3





Figure: A group photo of the concluding session panel at Gobeshona4



Figure Part of the audience at the concluding session of Gobeshona4

Steering Committee of the Gobeshona Climate Change Knowledge Management Platform



Exclusive session's hosts



Media Partners



Supporting Organisations

