Training for Building Capacity on Climate Change Adaptation

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Introduction

The Institute of Water Modelling (IWM) organized a 5 day training program on behalf of the Bangladesh Water Partnership. The training was held from 19th to 29th March, 2015 at the IWM training center in Mohakhali DOHS. The 10 trainees who participated in the program came from different organizations: LGED, BARC, BWDB,BADC, DAE, BARC,LGED and IWM.

The aim of the training program was to increase awareness of the key critical issues related to capacity building on climate change adaptation. Furthermore, trainees were able to develop an understanding of some of the main challenges that Bangladesh is likely to face in the future.

Training Program

The training comprised of primarily class-room sessions. The 10 trainees who participated in the program came from different organizations .i.e. LGED, BARC, BWDB,BADC, DAE, LGED and IWM .(full list of participants provided below).

The training program mainly consisted of class-based discussions. The trainers included local and international experts from different disciplines: engineering, economics, public health, agricultural, etc. Topics of training sessions included the following issues which were presented by various experts from respective fields given below:

Presentation outline on Few Topics

Adaptation for Gender

Mrs. Majeda Hoque presented on Gender and Climate change. She pointed women as the worst victims of natural calamities and that is even being intensified by extreme poverty and male dominance.She pointed towards some of the key points for changing of the current situation.

First of all, understanding of gender and climate change has to be ensured. Eventually this awareness is going to promote woman education. Awareness towards the negatives Impacts of climate change has to be ascertained up to the local women members. She added further involvement of women members in design of policies,promoting and developing non farm activities as alternative livelihood options for women,providing extension services to women farmers on appropriate technological innovations, improved storage facilities and resource management services.

Figure 1:Ms. Majeda Haque,Program Analyst,UNDP is presenting on Gender and Climate

Adaptation for Crop Diversification

Dr.Wais Kabir presented on crop diversification related to the climate changed issues. He focused on crop diversification related to the irrigation requirement. He sressed on the biodiversity of agricultural based business development, export earnings and so on, incorporation with the climate change issues related to ground water depletion due to excessive irrigation purpose.

Figure 2: Dr. WaisKabir, EC, BARC (Retd) is presenting on Crop diversification

Adaptation for Rural Water Supply

Mr. Emaduddin Ahmed, TL, Rajshahi WSP, DPHE; presented on the adaptation for rural water supply incorporation with the climatechange. He stated that the absence of proper drainage & sanitation, Surface Water pollution from industrial waste disposal, encroachment, makes it difficult for the availability of safe water. He suggested for the cooperation among departments, stakeholders of both upstream and downstream to be of great necessity in the availability of sustainable supply of safe water. Moreover he added that the local Govt. Institutions with required capacity and experience sharing can solve many obstacles for safe water. Lastly but not the least, a definite Master Plan for rural water supply is in unavoidable he pointed out.

Adaptation for Market Chain Infrastructure

Dr. Dwijen Mallick, BCAS, presented on the adaptation for market chain infrastructure regarding climate change. According to his presentation, various tiers of rural, urban markets should be provided with climate-proof infrastructure facilities including road accessibility and energy supply, storage, cold storage, loading-unloading, drainage etc. He added that the roads and highways should be made in a climate resilient manner. Moreover, he focused on the incentive for development and use of more efficient vehicles, electric vehicles, bio-fuels, changes in modes of transport, reductions in travel are inevitable. He pointed towards the increased importance of water management, including pricing and allocation.

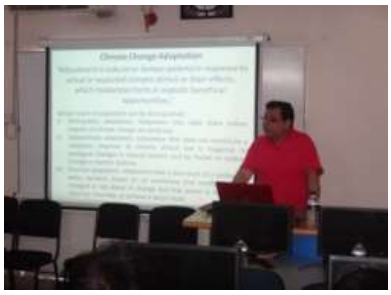

Figure 3: Dr. DwijenMallick, BCAS is presenting on Market Chain Infrastructure

Last but not the least, he said that the planning, designing and managing all market chain infrastructure should be done in a climate resilient manner which should have coherence with the economic development and that must be environmentally and socially sustainable.

Adaptation for Health

According to Dr.Showmik, Research Investigator, ICDDRB, small climatic changes can have a considerable effect on the transmission of malaria, and epidemiology of this disease appears to be related to changes in global temperature.
He sated that ,Dengue is seasonal and usually associated with warmer, humid weather. There is evidence that increases Rainfall in many locations can affect vector disease which increases due to climate change. density and transmission. Certain rodent borne diseases are associated with flooding, including leptospirosis, tularaemia and viral haemorrhagic diseases. Other diseases associated with rodents and ticks include plague, Lyme disease, tick borne encephalitis and hantavirus pulmonary syndrome. Kala Azar is another vector born disease.

Figure 4: DrShowmik, Research Investigator, ICDDRB is presenting on Adaptation for Health

Adaptation for Urban Water Supply

Dr. Asif M Zaman, WRP, IWM, presented om the Adaptation for Urban Water Supply. He stated the components of urban water supply, components that are sensitive to climate change and adaptation measures. For climate change both sources, infrastructures and users of urban water supply system components will be affected. He stated the adaptation measures that includes demand management, impounding, artificial recharge, diversify supply sources, durable materials, monitoring network, early

Figure 5: Dr Asif M Zaman, WRP, IWM is presenting on Urban water supply

warning system, desalination, increased technical capacity in Govt. departments. He also stated on emerging challenges as Increasing salinity trends, Water supply for growing urban population, GW salinity, Land salinisation, Data management and Monitoring network, Upstream flow changes, Detailed modelling of impacts (downscaling), Uncertainty in socio-economic changes, Integration of physical and socio-economic modeling and Knowledge-base management.

Urban Flood Management Adaptation

Ismat Ara Pervin, WRP, IWM, presented urban flood management adaptation. She focused on causes of flooding as prolonged and intense rainfall / Flash floods, High outfall water level, Low-lying area, Unplanned urbanization is the key cause of urban flooding, Intervening the natural hydrological system, Poor management, Lack of infrastructure , Lack of coordination between authorities, For adaptation she stated that we need to Widen/deepen drains, Lay new drains, River dredging, Sluice gate, Developed pumping system or increase capacity and Increase embankment height.

Figure 6: Presentation by IWM drainage specialist, Ismat Ara Pervin, WRP, IWM

Adaptation for Urban Sanitation

Prof. Dr Md Ashraf Ali, Civil Engg, BUET, presented on the Adaptation for Urban Sanitation. He stated the sanitation status, impact of climate change and adaptation measures. The general impacts on sanitation systems for climate change are less water for safe sanitation, additional stress on already degraded water due to poor sanitation, further aggravation of water/environmental pollution from poor sanitation, damage to sanitation infrastructure. For floods he stated that damage of WatSan infrastructure and environmental pollution; both urban (particularly slums) and rural areas are susceptible**.** For droughts he addressed lack of availability of water in winter months especially in drought-prone northwest region, hand pumps & many DTW become inoperable. He stated the strategies to overcome climate change impacts on sanitation system to prioritise improved sanitation coverage through addressing existing gaps and challenges, increased, equitable resource allocation for improved

sanitation, consideration of more technological options for both urban and rural areas, extensive research to develop climate resilient sanitation systems considering technologically challenged areas, e.g., water logged and coastal areas, adequate sanitation facilities in flood and cyclone shelters, raising mass awareness for improved sanitation.

Climare change adaptation for transport infrastructure

Prof Dr Hasib Mohammed Ahsan, Civil Engg, BUET, presented on the climate change adaptation for transport infrastructure. He stated the the present scenario and future climate change impact and adaptation for transport infrastructure. According to him responding to climate change requires two kinds of action 1) We need to mitigate climate change by reducing greenhouse gases and 2) We need to plan ahead and adapt to climate change due to past, current and future greenhouse gas emissions.

He stated that it is important for mitigation and adaptation actions to be taken forward together. For example, creating a new low carbon infrastructure network is vital to reduce greenhouse gas emissions, but it is also vital that it is able to adapt to the impacts of climate change to ensure it can operate under a different climate from today. Ensuring infrastructure resilient to potential increases in extreme weather events such as storms, floods and heat waves as well as extreme cold weather. He stated the possible adaptation measures in ensuring investment decisions taking account of changing patterns of consumer demand as a result of climate change, building in flexibility so infrastructure assets that can be modified in the future without incurring excessive cost, ensuring that infrastructure organisations and professionals have the right skills and capacity to implement adaptation measures.

Adaptation for Energy / Power supply

Md. Shazibul Hoque, DD, Powercell, presented on adaptation for Energy / Power supply. He stated that electricity is the precondition of all development and we need electricity for agriculture, commercial, domestic, industrial, official, transport and other economic activities. According to him the challenges are enhanced in gas exploration and production, domestic coal development, coal import (long term contract) and deep sea port for coal handling LNG import, safe nuclear technology. He stated the options for Bangladesh are gas, liquid fuel, coal based power plant, regional power trade (Hydro Power), LNG, nuclear power, renewable energy and wind power. He also focused on Energy Efficiency Action Plan, which is 10% of Primary and Secondary Energy Saving by 2015, 15% by 2021and 20% by 2030.

Irrigation Management & climate change

Md. Rezaul Hasan, former Senior Specialist, Irrigation Management Division (on-leave) IWM, stressed on the climate change impacts on agriculture.

Figure 7:Md Rezaul Hasan is presenting on Irrigation management and climate change

During his presentation he said that the summer is becoming hotter (High temperature), Monsoon has become irregular with untimely rainfall,Increased river flow and inundation during monsoon, Heavy rainfall over short period causing water logging, increased frequency, intensity and recurrence of flood. These are the calamities which are happening to crop damage, Crop failure, prolonged cold spell, salinity intrusion along the coast region.

Coastal Flood ManagementAdaptation

Mr.RubayatAlam stated on the storm surge model, Bay of Bengal Model (BoBM), cyclone modeling sytem, Storm surge flooding, Wind Wave Modelling, Projection on Cyclonic Wind Intensity, Storm Surge Model, Inundation Risk Mapping and Tsunami Modelling.

Post-2015 Development Agenda

Dr. Khondaker Azharul Haq, Vice president, BWP was absent to present on this topic. However Saad Siddiqui, Principal Specialist & Head, HRD, IWM delivered the presentation. He spoke about the impressive achievement of the MDGs and emphasized towards the responsibility for sustaining these achieved goals in accordance with the changes associated with internal and external affecting factors. He said that the sustainable development of water is the basic question of survival. He outlined on the economics of water shortage. Insufficient financial support for having proper access should be a global concern to overcome the water crisis. He highlighted towards the point number six of sustainable development goals. He stressed on explicit participation, voluntary involvement of all concern in order to enhance proper water management.

Concluding Session

The concluding session was participated with an appreciation speech from Mr M Shahidul Hasan, President of BWP to IWM for arranging such an informative training programme in partnership to BWP. He also thanked the participants for taking part in

the sessions to make it become successful. Participants taking active part in training session was given the floor to share their views in terms of the usefulness of the programme topic and suggestions for future improvements. Almost all of the participants expressed the

Figure 8: President, BWP is presenting the concluding speech

advantages of the topic they learned in regard to theoretical aspects and hoped to utilize the knowledge within practical field. Finally the participants thanked BWP and IWM for providing them the opportunity for being the part of the training sessions.

Certificate giving ceremony

The programme ended by handing over of certificates among the trainees. Trainees received certificate for successful completion of the training programme.

Figure 9:Handling of certificates to the participants

Accomplishment of the training

Some of the key factors that contributed to the success of this program were: high motivation of participants, who attended despite a general strike being called on the first day of the training program; careful selection of trainers and participants from different fields of expertise; IWM's capabilities and experience in delivering high quality training programs; IWM's experience in the field of climate changes related projects and active support from IWM and BWP management for the training program

Conclusion

The diverse range of topics made the program interesting. The multi-disciplinary background of the participants lead to a fruitful exchange of ideas. In the future, similar training programs can be extended by 1 or 2 more days to allow for more discussions and hands-on exercises.

Annex-1: Name, Designation and Contact Numbers of the Trainers

Sl No	Name of Trainer	Designation	Organization	Contact Number & E-mail
1	Ms MajedaHaque	Program Analyst,	UNDP	01715771137; Majeda.haq@undp.org
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5	Emaduddin Ahmed	TL, Rajshahi WSP	DPHE	01711531141 eua@iwmbd.org
6	Md. ShazibulHoque	DD	Powercell	01552480523 shazib@powercell.gov.bd
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19	RubayetAlam	Senior Specialist,CPE	IWM	01841930017 rba@iwmbd.org
20	Saad Siddiqui	Head HRD	IWM	0184193009 sas@iwmbd.org

Annex-2:Name, Designation and Contact Numbers of the Trainees

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5	Dr. M. Baktear Hossain	BARC	01711201441	baktear@gmail.com
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10	N D AtiqurRhaman	IWM/IRM	01716049123	atq@iwmbd.org

Annex-3:Topics of training session

Topic	Remarks
Adaptation for Gender	MsMajedaHaque, Program Analyst, UNDP;
Adaptation for Crop Diversification	Dr. WaisKabir, EC, BARC (Retd)
Adaptation for Market Chain Infrastructure	Dr. DwijenMallick, BCAS
Long Lead Time based Flood Forecasting	Md. Abdulla Hel Kafi,AS,IWM
Adaptation for Rural Water Supply	Emaduddin Ahmed, TL, Rajshahi WSP DPHE
Adaptation for Energy / Power supply	Md. ShazibulHoque, DD, Powercell
Adaptation for Road /Railways	Prof DrHasib Mohammed Ahsan
Adaptation for Industries	Prof Dr. Mafizur Rahman, CE, BUET;
Adaptation for Navigation	PintuKanungoe, Director, CEGIS
Adaptation for Rural Sanitation	MdSalahuddin, ProjEngr NGOF
Adaptation for Urban Sanitation	Prof. DrMd Ashraf Ali, Civil Engg, BUET
Adaptation for Irrigation Management	Mr. RezaulHasan, Research Fellow IWFM
Adaptation for Health	DrShowmik, Research Investigator,ICDDR,B;
Policy and Strategies for Adaptation	Dr. Md Abu Saeed, Research Fellow, BCAS;
Negotiations for Adaptation	MirzaShawkat, Director, Int. Neg., DOE
Adaptation for Urban Water Supply	Dr Asif M Zaman, WRP, IWM
Flood Insurance & Early Warning Dissemination	TarunKantiMagumdar, FMG, IWM
Urban Flood Management Adaptation	IsmatAraParveen, WRP, IWM
Coastal Flood Management Adaptation	RubayetAlam, CPE, IWM
Climate Change: Post-2015 Development Agenda	Saad Siddiqui, Head HRD, IWM