

REPORT

on

National Seminar

of the Project “Developing Dynamic Web-GIS based Early Warning System at Landslide Risks in Chittagong Metropolitan Area, Bangladesh”



SEPTEMBER, 2015



BUET-Japan Institute of Disaster Prevention and Urban Safety (BUET-JIDPUS)
Bangladesh University of Engineering and Technology (BUET), Dhaka-1000,
Bangladesh.

Email: jidpusinfo@jidpus.buet.ac.bd, Phone: +8802-9662975, Fax: +8802-9662975

NATIONAL SEMINAR

on the Project “Developing Dynamic Web-GIS based Early Warning System for the Communities at Landslide Risks in Chittagong Metropolitan Area, Bangladesh”

SERVIR-Himalaya is a joint initiative of USAID (United States Agency for International Development) and NASA (National Aeronautics and Space Administration). Under the SERVIR-Himalaya program, ICIMOD has initiated a competitive Small Grants Program. In this connection, BUET-Japan Institute of Disaster Prevention and Urban Safety (BUET-JIDPUS) is implementing one of the projects under this program since August, 2014. The project is being conducted namely ‘Developing Dynamic Web-GIS based Early Warning System for the Communities at Landslide Risks in Chittagong Metropolitan Area, Bangladesh’. The International Centre for Integrated Mountain Development (ICIMOD) assisted the project.

The National Seminar on the project was held on 17th September, 2015 at BUET-JIDPUS building and organized by BUET-JIDPUS. A total of 35 participants from different organizations related to landslide research and mitigation program were present on this occasion. Representatives from Chittagong Development Authority (CDA), Chittagong City Corporation (CCC), Department of Environment (DoE), Fire Service and Civil Defence (FSCD), Bangladesh Meteorological Department (BMD), Geological Survey of Bangladesh (GSB), The University of Chittagong, Chittagong University of Science and Technology (CUET), Bangladesh University of Science and Technology (BUET) were present on the occasion.

The activities and the outcome of the project were presented on the seminar. Professor Dr. Tahmeed M. Al-Hussaini gave the introductory speech and welcomed the guests. At first, a video documentary on the landslide scenario of the hills in Chittagong, socio-economic condition of the people and overall activities of the project were shown.

Figure 01: Introductory speech by Dr. Tahmeed M. Al-Hussaini, Director of BUET-JIDPUS.



Figure 02: Presentation by Mr. Bayes Ahmed, GIS Specialist of the project.



Mr. Bayes Ahmed, GIS Specialist of the project, gave a brief presentation on the present scenario of landslide as a disaster, the need of a scientific early warning system of landslide. He said that every year people die during landslide and according to the local people, it is increasing because of huge rainfall in a short period of time and housing on the hills. According to him, in future, landslide and its damage will be increased as there are rapid population growth, increased urbanization and uncontrolled hill cutting. He thinks that after 20 years the landslide will be the most vulnerable natural and man-made damaging disaster and for this, we should be alert from now on and develop a scientific early warning system for the people. He explained that at landslide inventory stage, previous landslide locations,



their mechanism and soil type were identified for 57 places. The socio-economic condition of the people was learnt in coordination with the community people. He added that the people living in the hills are more interested to live there as they get all the necessary facilities nearer like school, college, market, kitchen market, clinic etc. He said that the stakeholder organizations like Chittagong Development Authority (CDA), Chittagong City Corporation (CCC) and others should pay attention to these issues promptly.

Figure 03: Participants in the National Seminar Organized by BUET-JIDPUS.



In his presentation, Mr. Bayes Ahmed showed the gradual change of land cover from 1990 to 2010 in Chittagong. After analyzing the daily rainfall data from 1960 to 2012 it is seen that probability of rainfall of 10mm and 20mm per day is increased. Later, he explained different methodologies followed and challenges met during the project period. He also showed the web-GIS based early warning system practically to the participants, which was the main outcome of this project. He said *“Our project purpose was not only to give an early warning system but also to specify the exact location where landslide may occur on an exact day”*. He also added that the hilly areas with no settlement are not vulnerable to the people at all and we need not give a warning for those areas. He said, *“We wished to give the warning from door to door, but it needs more fund to buy high resolution satellite images, which was beyond the capacity of this project fund.”*

After that, a discussion session was moderated by Dr. Md. Zoynul Abedin (Professor, Dept. of Civil Engineering, BUET), Dr. Tahmeed M. Al-Hussaini (Director, BUET-JIDPUS) and Dr. Sarwar Jahan Mohammad Yasin (Professor, Dept. of Civil Engineering; and Director, Planning and Development, BUET). Total 11 of the guests shared their knowledge, experience in this session and gave some suggestions for future.

Figure 04: Moderators of the discussion session on National Seminar in BUET-JIDPUS.



Figure 05: Speech by Major A K M Shakil Newaz (Director, Op. and Maint., FSCD).



At first, Major A K M Shakil Newaz (Director, Operation and Maintenance, FSCD) shared his experience on operation and rescue mission during different disasters in home and abroad. He exclaimed that early warning system is a must for these types of disasters as they would not give us enough time to save people and we should add these things in pre-disaster phase. If we get proper warning and provide them to the local people, then lives can be saved. He added that warning tower (height: 200-300 feet) can be set up as like as Philippines and

Thailand, from which we can warn people within a fraction of time upto 4-5 kilometre distance. According to him, evacuation is an important factor to consider here and shelter, sanitation system should be designed considering gender issues. He emphasized that the community level volunteer group should be formed and active as they are the first responder during any disaster. Besides, public awareness building through drill, coordination with the rescue stakeholders and the prompt rescue system are also important to him. He focused on reducing information gap among the stakeholders.

Figure 06: Speech by Md. Zafar Alam
(Member, Admin and Planning, Chittagong Port Authority)



Mr. Md. Zafar Alam (Member, Admin and Planning, Chittagong Port Authority; Former Director, Department of Environment) said that the triggering factors of landslide were identified; soil investigation and mapping have been done in this project. The Law of Disaster Management, 2012 was published. Now we need to focus on disaster management and saving life through tuning the early warning process. He congratulated BUET-JIDPUS and Mr. Bayes Ahmed to do this splendid job within the short budget. He added that the early warning system of this project is already technically developed but it can be more helpful for the people in hills if high quality satellite image may be used in near future. After the devastating landslide in 2007, a Hill Management Committee was formed headed by Divisional Commissioner and it is empowered to handle the hill related issues. He suggested that it will be more benefiting if the committee can know about this project's outcome and refer this to the ministry. He thinks that the modern technology should be introduced to mitigate the risks of landslide. Finally he said that the people of Chittagong will remember this contribution of BUET-JIDPUS.

Figure 07: Speech by Mr. Mir Ahmed, Director of Department of Disaster Management



Mr. Mir Ahmed, Director of Department of Disaster Management, said that his organization is working on mitigating the loss during any disaster as well as the pre-disaster issues and early warning. He said that after disseminating the early warning to the people, the evacuation procedure should be added to the system. For this, the Department of Disaster Management is always ready to coordinate with BUET-JIDPUS, he added. He appreciated the work of BUET-JIDPUS about the early warning system.

Figure 08: Speech by Mr. Ali Ashraf
(Consultant and Civil Engg, Southern University, Chittagong)

“BUET-JIDPUS has done a good work formulating the landslide early warning system which will be able to give warning for individual house in future if further funding is included,” said Engg. Ali Ashraf (Consultant and Civil Engg, Southern University, Chittagong). According to him, people live in the hilly areas mainly for employment, so the authority should be focused on resettlement instead of relocating the people.

Mr. Rashid Ahmed (Secretary, Chittagong City Corporation) appreciated the work successfully done by BUET-JIDPUS. He thanked Mr. Bayes Ahmed for his lively presentation on such a topic which is highly necessary for the people living in hills in Chittagong. He liked the idea of identifying vulnerable households which will be possible with higher resolution satellite images.

Figure 09: Speech by Mr. Rashid Ahmed (Secretary, Chittagong City Corporation).



Figure 10: Speech by Md. Azadur Rahman Mollick (Director, Dept. of Environment, Chittagong)



Md. Azadur Rahman Mollick (Director, Dept. of Environment, Chittagong) proposed, *“If we can adapt this early warning system and warn the people of a particular location then they will realize the importance to leave the place before landslide. If we know the exact location of landslide happening, we can be prepared with our full team before the occurrence.”*

Figure 10: Speech by Reshad Md. Ekram Ali (Director, Geological Survey of Bangladesh)



Reshad Md. Ekram Ali (Director, Geological Survey of Bangladesh) congratulated the presenter and said that it is a very good beginning towards Digital Bangladesh. He appreciated the proposed web-GIS based early warning system having several layers (parametres). He suggested it should be implemented immediately for the betterment of people living in landslide prone areas,” he added.

Mr. Rezaul Karim (Chief Architect and Town Planner, Chittagong City Corporation) said that it was a nice approach towards mitigating the loss due to landslide. He proposed a planned housing for those people residing in the vulnerable areas.

Figure 11: Speech by Mr. Rezaul Karim
(Chief Architect and Town Planner, Chittagong City Corporation).



Md. Shameem Hassan Bhuiyan (Meteorologist, Bangladesh Meteorological Department) said that this system will be useful to the Officials which are mainly responsible for the response during landslide. This system is very impressive, he added. Mr. Shameem proposed that nowcast can be incorporated here to give the warning before 6 or 12 hours. He thinks that Bangladesh Meteorological Department has data image of 25 kilometres resolution made from Meteorological model which may be more helpful in this project.

Figure 12: Speech by Md. Shmeem Hassan Bhuiyan
(Meteorologist, Bangladesh Meteorological Department)



Figure 13: Dr. M. A. Taiyeb Chowdhury
(Professor, Dept. of Geography, University of Chittagong)



Dr. M. A. Taiyeb Chowdhury (Professor, Dept. of Geography, University of Chittagong) said that this system is a good initiative. He suggested to run this warning system as a pilot project for at least 2 years and based on the feedback another project should be initiated with proper funding.

Figure 14: Speech by Ms. Salma Akter (Deputy Director, Geological Survey of Bangladesh)



Figure 15: Concluding speech by the moderators in the National Seminar.



Ms. Salma Akter, Deputy Director, Geological Survey of Bangladesh, appreciated the methodology developed in this project and she thinks that this system can be applicable for other disasters especially for earthquake. She suggested to incorporate the road network showing the evacuation route.

At the last of the discussion session, the moderators gave their speech. Dr. Tahmeed M. Al-Hussaini (Director, BUET-JIDPUS) thanked the guests who came from different universities, Government organizations of Chittagong and Dhaka.

Figure 16: Valuable feedback provided by the researchers, teachers and senior officials from different government institutions of Bangladesh.



Figure 17: Researchers, teachers and officials from different institutions who attended the National Seminar on the landslide project.



In the national seminar the researchers, teachers and officials from different organizations appreciated the early warning system developed in this project. They congratulated BUET-JIDPUS for establishing this sophisticated system within the time and budget constraint. They hope that this system will be developed further with new budget after having the feedback from practical field and field calibration. They were very much satisfied with the presentation and happy for being a part of this program.

APPENDIX

National Seminar on the Project "Developing dynamic Web-GIS Based Early Warning System for the Communities at Landslide Risks in Chittagong"




List of Participants

Date: 17.09.2015

No.	Name	Designation and Organization	Contact No. & E-mail	Signature
1	MD. AZADUR RAHMAN MOLIER	Director, Department of Environment, Chittagong Metropolitan	01558308469 agadus.molier@gmail.com	
2	Wah. Rozaul Karim	Chief City Planner, CCC.	01715070708. archrozul@gmail.com.	
3	Prof (Engr.) M. Ali Ashraf	Professor & Head Department of Civil Engineering Southern University, Bangladesh	01819386308	
4	PROF. DR. N. A. Taiyeb Chowdhury	Professor Dept of Geography and Environmental Studies University of Chittagong	01711032377 n.a.taiyeb@yaho.com	
5	Dr. Muhammad Muhibbullah	Chairman Dept of Geography & Environment University of Chittagong	01195180628 md.muhibbullah@yahoo.com	
6	Md Kamrul Hassan Senior Chemist	Department of Environment Chittagong	01718177369 rajb_sandwiper@yahoo.com	

No.	Name	Designation and Organization	Contact No. & E-mail	Signature	
7	Debanjali Saha	Lecturer, IWFM, BUET	debanjalibuet@gmail.com 01674769280		✓
8	Pranhanta Acharye	Student, CE, BUET	0219-953143 pranuvrta@gmail.com		
9	Ishbiaq Ahmed	Student, CE-BUET	01715082173 Ishbiaq-Ahmed_26@yahoo.com	Ishbiaq	
10	Md. Zafar Alan	Member (A&D) Chittagong Port	01711205423 zafar.alan@gmail.com		✓
11	Rehmad Md. Erna Au'	Director Geological Survey of 130	01712149323 rehmad.erna@gmail.com		✓
12	Rashid Ahmed	Secretary Chittagong City Corporation	0171335191 rashidahmaddo@gmail.com		✓
13	Salma Akter	Deputy Director Geological Survey of Bangladesh	01726706755 salma.akter_jib@yahoo.com		✓
14	Md. Anifur Rahman	Assistant Professor, Dept. of WRE, BUET	01552015727 anifur@wre.buet.ac.bd		

No.	Name	Designation and Organization	Contact No. & E-mail	Signature	
B	15 Mohammad Anisur Rahman	Assistant Director Gr. SB	01716098185 anis_du_geo@ yahoo.com		✓
C	16 Maharina Jafin	Senior Architect Chittagong Development Authority	01711385682 karon819@yahoo.com		✓
C	17 Prof. KRISHNA MAZUMDER	Asst. Prof., IEER, CUET	01712862281 rkmaazumder@ gmail.com		✓
C	18 Md. Rafat Ahmed Bhuiyan	Asst. Prof., Dept. of Civil Engg. CUET	01716892289 rafat_ah@yahoo.com		✓
C	19 Md. Abul Hasen,	Lecturer, Dept of DEE, CUET	01623446257 hasannatu0601036@gmail.com		✓
	20 Sabbir J. M. Yaw	Professor, CR Dept, BUET	01817036073 yasin.sabbir@yahoo.com		
D	21 Hirul Ahmed	Director, BDM	01684999029		✓
D	22 Major AKM Shakil Newaz	Director (Op & Maint) FSCD	01730002322		✓

No.	Name	Designation and Organization	Contact No. & E-mail	Signature
23	Md. Shameem Hassan Bluizyan	Meteorologist Bangladesh Meteorological Department.	01750000456 shameem_dd@70kms.com	
24	Dr. A. MUQTADIR	Civil BUET	01701453869	
25	Sharmila Ara	Lecturer, Dept. of URP, CUET.	01779574522	Sara.
26	Dr. Md. Forquid Abedin	Professor, Dept of Civil Engg. BUET	-	
27				
28				
29				
30				