



Policy Recommendation for Strengthening Capacity for Urban Disaster Management through Open and Distance Learning in Bangladesh

Saima Ahmad*

School of Social Sciences, Humanities and Languages, Bangladesh Open University, Gazipur-1705, Bangladesh.

Abstract

The adverse effects of climate change-induced geo-environmental changes have turned Bangladesh prone to intensifying recurring hazards like- floods, erratic rainfall, landslides, cyclones, storm surges, riverbank erosion, deforestation, droughts, and many more. Earthquake has also been identified as a hazard in Bangladesh. In addition, congested and unhealthy residential areas with high population density, inadequate infrastructural transport and communication facilities, and limited urban disaster management capabilities have been worsening the situation. The main theme of the study was to explore the ways of capacity building of disaster management in Dhaka City Corporation (DCC) through the Open and Distance Learning (ODL) approach offered by the School of Social Sciences, Humanities, and Languages (SSHL), Bangladesh Open University (BOU). The BOU has extensive access to communicate and spread knowledge to its large number of learners within the shortest possible time. Hence, the present research attempted to explore the prospects of the Open and Distance Learning (ODL) approach for strengthening the capacity of urban disaster management through BOU by forming skilled Urban Disaster Volunteer (UDV) teams in different parts of the DCC. Creating and incorporating an Urban Disaster Management (UDM) knowledge pool regarding the hazard and disaster modes, types, seasons, and patterns should be developed to strengthen the Urban Disaster Management Capacity (UDMC). A dynamic cooperation between the national policymakers and local stakeholders has to be accomplished to establish improved awareness through acquiring hazard and disaster-relevant knowledge, and the ability to cope with inevitable disasters.

Keywords: Capacity Building, Open and Distance Learning (ODL), Urban Disaster Management, Urban Disaster Volunteer.

1. Introduction

The geo-environmental disasters in the urban areas of Bangladesh are heavy monsoon rain, floods, waterlogging, surface and groundwater depletion, earthquakes, subsidence, climate change, fire incidents, chemical explosions, gas explosions, building collapse, environmental pollution, unhealthy, and dense settlements. The KIIs and the questionnaire survey showed that densely populated and congested settlements, with unplanned substandard infrastructures, have been developed in the geo-environmentally vulnerable areas of Dhaka City Corporation (DCC). According to Karim et al. (2019), Hussaini et al. (2015), Shaha (2015), Bilham (2014), Mowla and Islam (2013), Adelia and

*Corresponding author: Saima Ahmad (saima.ahmad68@bou.ac.bd)
Journal homepage: <https://jstr.bousst.edu.bd>

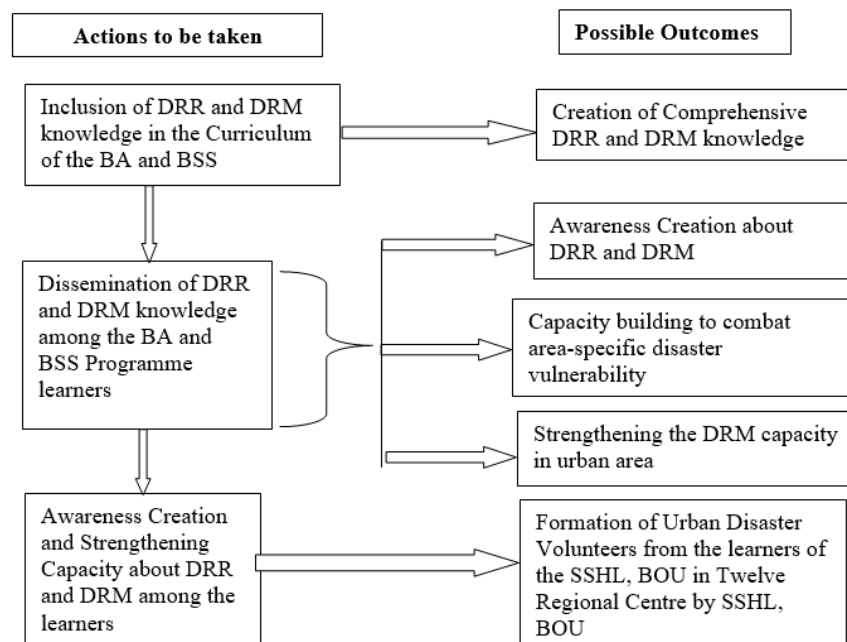
Khorshiddoustb (2011), JICA (1991) geomorphology and geology directly or indirectly influence the disaster preparedness of an urban area. Hence, the Rajdhani Unnayan Kartripakkha (RAJUK) emphasized the conservation of water bodies, land elevation, and vegetation coverage in the Dhaka Structure Plans for 1990-2015 and 2016-2030 to reduce the hazard risks in the DCC (RAJUK, 1995 and RAJUK, 2015). Accordingly, the significance of disaster management capacity building in a Sustainable Development Goal (SDG)-approach in a country like Bangladesh resulted in the formation of the Department of Disaster Management (DDM) following the enactment of the Disaster Management Act (2012) (DDM, 2012). The Comprehensive Disaster Management Program (CDMP) Phase -1 (2003-2009) (PPDU, 2009) and CDMP Phase -2 (2010-2014) (CDMP II, 2010), the National Plan for Disaster Management (NPDM 2010-2015) (Ministry of Food & Disaster, 2010), followed by the NPDM 2016-2020 and 2021-2025 which aim for a paradigm shift from conventional 'Response and Relief' to a 'Comprehensive Disaster Risk Reduction' (DRR) approach with a 'whole of Government' approach, including the private sectors (MoDMR, 2017 and MoDMR, 2020). The outcomes of NPDMs are the incorporation of the DRR and emergency response strategies into the Disaster Management policy in alignment with recent national, regional, and international frameworks encompassing the 7th (FY 2016-2020) (GED, 2015) and 8th Five-Year Plan (FY 2016-2020) of the GoB (GED, 2020), the Sendai Framework for Disaster Reduction (SFDRR) (UN, 2015¹), The Paris Agreement (UNFCCC, 2015), and SDG (UN, 2015 2). Focused on multi-hazard and hazard-specific disaster management, these plans deal with the geo-environmental and anthropogenic disasters in Bangladesh. These plans aim to create, disseminate, and implement comprehensive and informative scientific disaster management knowledge through national and global academic and research organizations. The KIIs with the officials and volunteers of the Bangladesh Fire Service and Civil Defense (BFSCD) and the Cyclone Preparedness Program (CPP) mentioned the involvement of the community people in a 'Bottom-Up Process', from the Local to National level stakeholders regarding disaster management. To mainstream the goals of DRR and DRM, the central National Disaster Management Council (NDMC) and the MoDMR have been leading the disaster management committees (DMCs) at district, upazila, and union levels including the representatives from the government, NGOs, communities, and vulnerable groups. All stakeholders of the disaster management system in Bangladesh are concerned with Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) in alignment with the Standing Orders on Disasters (SOD) - 2019 and the Disaster Management Act, 2012 (CFE-DM, 2013).

Besides national organizations like the 'National Youth Policy' (Ministry of Youth and Sports, 2017), the BFSCD, the International Federation of Red Cross and Red Crescent (IFRC), the Bangladesh Red Crescent Society (BDRCS), the CPP, the World Bank and JICA (2015), the United Nations (UN), the Save the Children, and the Social and Economic Enhancement Programme (SEEP) have been encouraging youth volunteerism to develop knowledge, skills, awareness, and leadership skills on environmental challenges and opportunities to build urban disaster resilience in the DCC. These organizations also provide financial and other logistic support to reduce disaster risk, build climate change-induced (CCI) resilience, and strengthen the DRR and the DRM capacities of the DCC (GDPC, 2011, Palma, 2018). The BDRCS formed the 'Dhaka Urban Unit' of volunteers in 1981, and 75.6% of the total volunteers worked in urban areas of Bangladesh (BBS, 2011). Sreezon et al. (2019), Haq (2015), Ahmad and Numan (2015), Ahmad (2018-2019), Ahmad (2018), Ahmad and Numan (2015), Ahmad (2014), Ahmad (20091), Ahmad (2009 2), Parvin and Shaw (2011), Ahmad (2008) recommended community-based disaster management and youth urban disaster volunteer teams to train and incorporate pre, during, and post-disaster situations in the DCC. According to Kuddus et al. (2017), though the National Curriculum Board (NCTB) and Disaster Management Bureau (DMB) have been jointly conducting DRR-oriented learning content in the national textbooks, more practical training-based disaster management education has to be included. Though the national plans and policies include formation of the urban disaster volunteers at the community level, inclusion of the learners from higher levels of education has not yet been done. Accordingly, the literature raised the question of how more educated people can be involved as skilled volunteers for the pre, during, and post-disaster management

in the DCC to strengthen the City Corporation Disaster Management Community (CCDM) (SOD-2019). The literature indicates that, through the ODL approach of teaching offered by the School of Social Sciences, Humanities, and Languages (SSHL) of Bangladesh Open University (BOU), systematic studies through a well-designed curriculum, creation, inclusion, and dissemination of disaster-related study materials for a large number of learners within the shortest possible time can only be achieved. Hence, the objectives of the study were to assess the capacity of strengthening urban disaster management in the DCC through the ODL approach, to determine the prioritization level regarding urban disaster management learning by the SSHL faculties teaching in the BA and BSS program through the ODL approach, and to explore the ways to form urban disaster volunteers from the learners of the BA and BSS program of the SSHL, BOU. The prospect of Bangladesh Open University (BOU) to create and disseminate UDM knowledge to its learners in the shortest possible time, in a cost-effective way motivated to conduct the research. Accordingly, investigating and assessing the disaster management capacity of the SSHL in creating and disseminating disaster management knowledge through the ODL approach justify to the conduct of the research.

2. Conceptual Framework of the Research

The conceptual framework of the research shows that in case of the actions like inclusion, creation and dissemination of DRR and DRM knowledge is taken for the BA and BSS learners of the SSHL, there is a high potentiality to form skilled urban disaster volunteer from the learners. The SSHL has the capability to work in collaboration with the public and government and non-government organizations in alignment to the national plans and policies to strengthen the urban disaster management in DCC.



3. Materials and Methods

Study Approach

Both Qualitative and Quantitative research approaches were followed for the study. The Key Informant Interview (KII) of different stakeholders and the Questionnaire survey among the SSSL faculties were conducted.

Data Sources, Analysis, and Presentation

The Primary data were collected from the Student Support Service division (2018), BOU, the multiple-choice questionnaire survey among a total of 23 SSSL faculties of different subjects offered in the BA and BSS program, the KIIs with the Dhaka North City Corporation (DNCC) and Dhaka South City Corporation (DSCC) officials, the Deputy Director and volunteers of the Cyclone Preparedness Program (CPP), Dhaka. The secondary data were collected from the Master Plans and Structure Plans of the DCC, the BOU Regional Centre Map, relevant books, reports, journal articles, the national Plans and Policy Frameworks, and the BOU study regulations.

Data Analysis and Presentation

The collected data were analyzed by statistical software MS Excel and presented in tabular and graphical forms. The satellite imagery of the DCC in 2018 was collected and transformed into a map of the BOU Regional Centre with ArcGIS, showing the absolute location.

Study Area

The DCC was selected as the study area (305.75 km²), with over 10.2 million and an average density is 34,913 / km² (BBS, 2022). Most of the built-up areas are situated on the gently sloping lower tip of the southern Madhupur Terrace (1.5 to 13 meters AMSL), known as the ‘Madhupur-Bhawal Garh’ Region (Ahmad, 2018). The central part is mostly flood-free, and the lower parts are filled up for urban structures (Ahmad, 2009²). The average temperature of the DCC is 17.8° C, and the monthly total rainfall is 1777 mm (BBS, 2017).

Study Focus

Though the SSSL offers high-level degrees like Three years of Graduation and Four years of Honours, Master’s, M.Phil., and PhD degrees, the study focused on the BA and BSS programs as this degree offers courses on ten subjects, to the largest number of learners (4, 11,696 learners in 2020-2021) through ODL approach (BOU, 2023). The capability of the SSSL to create disaster-related knowledge and disseminate it through twelve Regional centres (Fig.1 and Table 1) located all over the country within the shortest possible time inspired the study to focus on the BA and BSS Programme.



Table 1: Regional Centers of BOU

| Regional Centers | | | |
|------------------|----------------------------|----|----------------------------|
| 1 | Barisal Regional Center | 7 | Jashore Regional Center |
| 2 | Bogura Regional Centers | 8 | Khulna Regional Center |
| 3 | Chattogram Regional Center | 9 | Mymensingh Regional Center |
| 4 | Cumilla Regional Center | 10 | Rajshahi Regional Center |
| 5 | Dhaka Regional Center | 11 | Rangpur Regional Center |
| 6 | Faridpur Regional Center | 12 | Sylhet Regional Center |

Figure 1: Map of Regional Centers of BOU, 2020

4. Findings and Analysis

Geo-environmental and Anthropogenic Disasters

The geo-environmental and anthropogenic disasters in the DCC are subsidence, narrowing of rivers, water body depletion, waterlogging, erratic rainfall, accelerated magnitude and frequency of thunderstorms (nor’ Westers), cold and heat waves, air, water, and soil pollution, and vegetation coverage depletion. There are seven faults and thirteen lineaments, which might worsen the disaster situation if any earthquake of 4/5 Richter scale occurs in the adjacent area (Ahmad, 2014). The western part of the DCC, from Mirpur-Kallyanpur-Pagla along River Buriganga, and the areas from Uttar Khan-Badda-Demra along the River Balu in the eastern region are the High-Risk Zones of earthquakes (Rahman, et al., 2018, Hussaini, et al., 2015, and Shaha, 2015). The anthropogenic activities such as unplanned land use patterns, depletion and blockage of natural water bodies, violation of geomorphic features, inappropriate industrial waste treatment plants, and other toxic emissions from the vehicles, industries, and brick kilns in the DCC aggravate the magnitude and frequency of geo-environmental disasters. The aftermaths are congested settlements, long enduring waterlogging, air, water, and soil contamination, building collapse due to subsidence and earthquake, lightning, and fire incidents.

Strengthening Urban Disaster Management (UDM) Capacity through the ODL Approach of the SSSL

Necessity to Create and Include UDM Knowledge in the BA and BSS Program

The majority (91.3%) of the SSSL faculties opined to create and include disaster-related knowledge in the BA and BSS course curriculum to strengthen UDM, while only 8.7% considered it as ‘Inconsistent with their curriculum’ (Fig.2).

Reasons to Support Inclusion of UDMC Building Knowledge in the BA and BSS Program

The majority (40.3%) of respondents supported the inclusion of UDM knowledge in the subject curriculums to build UDMC, while only two respondents stated that UDM knowledge is needed to relate previous adverse experiences with that of the present and sustainably conduct all activities (Fig.3).

Prioritization of Learning Method for UDM Knowledge Creation and Dissemination

The highest priority for the ‘Face-to-Face’ learning method was given by 56.3% of and the lowest priority was given by 34.8 % of respondents. For the ‘Two-year diploma course’ for UDM knowledge dissemination, 17.4% prioritized the highest, and 43.5% the least. In the case of offering ‘Certificate courses’ for UDM knowledge dissemination, 17.4% of respondents prioritized the highest, while 65.3% gave the least priority to the learning method (Fig.4).

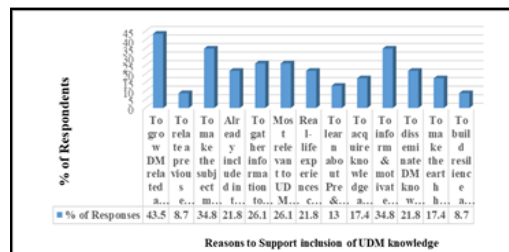


Figure 2: Necessity to Create and Include UDM Knowledge

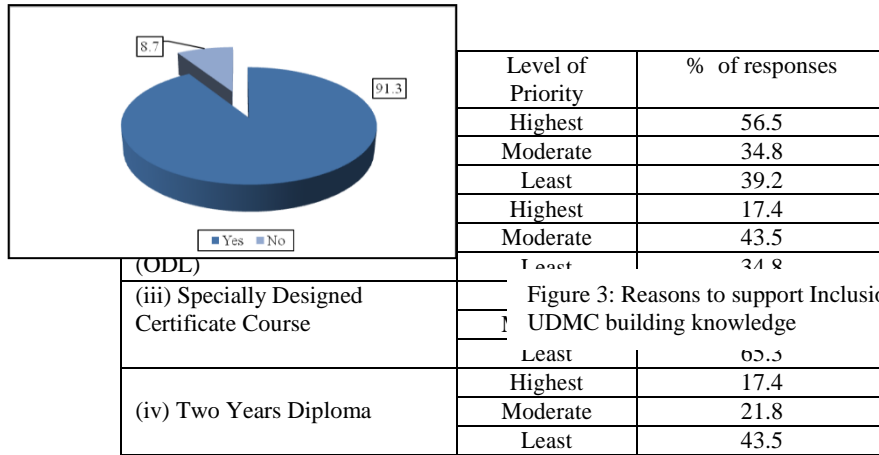


Fig.4: Prioritization of Learning Method for UDM Knowledge Creation and Dissemination
 * H= Highest, M= Moderate, L = Least

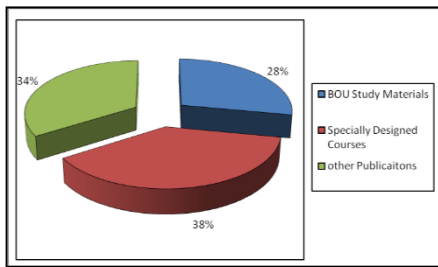


Figure 5: Preferred Types of Study Materials for UDM knowledge

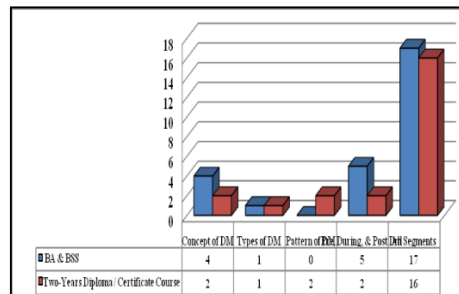


Figure 6: Preferred Learning Contents for UDM Knowledge Creation and Dissemination

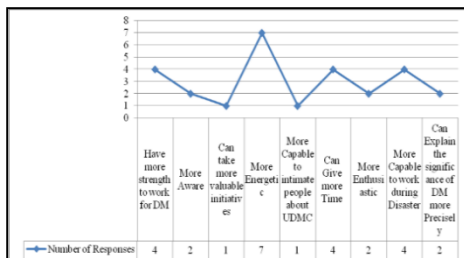


Figure 7: Reasons to support UDV Teams from Youth Learners

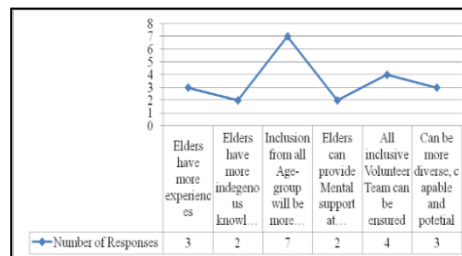


Figure 8: Reasons to support all-age-group inclusive learners to train as UDV teams

Preferred Types of Study Materials for UDM Knowledge

The highest percentage (38%) of respondents preferred to create ‘Specially designed’ courses for UDM to form UDV teams, while 28% of respondents supported utilizing the BOU study materials to create UDM knowledge and disseminate it throughout the country (Fig.5).

Preferred Learning Contents for UDM Knowledge Creation and Dissemination

Most respondents (90%) opined on the inclusion of Concepts, Types, and Patterns of UDM knowledge, along with pre, during, and post-disaster management in the BA and BSS Program. For the ‘Specially Designed Certificate’ and ‘Two-year Diploma’ courses 84.2 % preferred the inclusion of all segments of the UDM knowledge (Fig.6).

Reasons to Support UDV Teams from Youth Learners

A total of 52.2% supported training the ‘Youth Learner as UDV’, as the Youth learners are more energetic, physically strong, more capable of working in pre, during, and post-disaster management phases, have more time to spend disseminating UDM awareness, and more enthusiastic and aware about the UDM (Fig.7).

Reasons to support all Age-group Inclusive Learners to train as UDV

A total of 21 responses supported the inclusion of all age-group learners as UDV trainees. The highest percentage of respondents (47.8%) supported the ‘all age-group inclusive learners to train as UDV’s’, with the lowest respondents showing ‘indigenous resilience, the capability of dealing the Post disaster trauma’, and ‘providing mental support for the community’ (7.4% each) as the reasons for supporting the incorporation of all age groups of learners (Fig.8).

5. Result, Discussion and Conclusion

The study delved into the prospects to enhance the UDMC in the DCC through the ODL learning approach for the existing and conceivable forthcoming geo-environmental disasters. The study found that the strong knowledge dissemination network of the SSHL with its twelve Regional centres might be utilized for creating and disseminating urban disaster management knowledge and awareness in the shortest possible time, to the most comprehensive range of BA and BSS learners (4, 11,696 in 2021) in the most cost-effective way. The majority of respondent faculties prioritized creating and disseminating urban disaster management knowledge by incorporating new lessons in the existing learning materials and designing specially designed courses for forming all age-inclusive community-based volunteer teams in the DCC from its learners. The SSHL can strengthen disaster management activities more functionally and effectively in each ward of the Dhaka City Corporation (DCC). Collaboration with national and international stakeholders will enable SSHL to form well-trained volunteer teams through the vast dissemination network among a large number of its learners.

Based on the study, the following recommendations might be given: i) An area-specific and fully functional urban disaster management plan has to be developed for the DCC. ii) The urban disaster-related knowledge pool has to be created and disseminated through the dissemination network of the BA and BSS programs of the SSHL, BOU. iii) The adverse impacts and the ways to mitigate the socioeconomic losses due to urban disasters might be tutored to a large community through different course curriculums offered by the SSHL, BOU. iv) The SSHL, BOU might create area-specific urban disaster volunteer teams by offering one and two-year diplomas to combat urban disasters.

Conflict of Interest

The author declares that there is no conflict of interest.

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