Evaluation of the Standing Orders on Disaster (SOD) Implementation: A Study on Flood Affected Areas of Rangpur, Bangladesh

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ABSTRACT

Present study was designed to evaluate the status of Standing Orders on Disaster implemented at the local level of flood-affected areas of northern Bangladesh. Both primary and secondary data were utilized and data were collected from the members of Upazila Disaster Management Committee, Union Disaster Management Committee, and general inhabitants, respectively through interview and questionnaire survey. The majority of the respondents agreed that the orders were carried out using the current guideline of standing orders and implemented immediate tactics. The results showed that 66.25% and 58.63% orders were implemented at the warning stage by Upazila Disaster Management Committee and Union Disaster Management Committee respectively. Again, during disaster stage, all orders were carried out by both committees. Members of both committees claimed that the number of appropriate persons and lifesaving materials were insufficient. Counseling psycho traumatize victims to overcome their trauma was absent. Again general people said they received services 12.5%, 86.75% and 52% in three phases of disaster. Average performances of Standing Orders implemented at three stages of disaster were 83.12% and 81.17% by Upazila and Union disaster management committee, whereas general inhabitants received average 50.42% services. It was revealed that all aspects of standing orders on floods in the study area are not adequately addressed in different stages of flood management. The findings of this study are likely to help guide government agencies and policymakers to strengthen their SOD implementation mechanism to ensure improvement in northern Bangladesh and other regions with similar concerns.

Keywords: Flood, Standing orders, Risk reduction, Resilience.

INTRODUCTION

Bangladesh is one of the most vulnerable nations to flooding due to its unique geographic location and high river flow during the monsoon season (Khosravi et al. 2018). Flooding occurs regularly and frequently during the rainy season in Bangladesh. As a result, there has been a great deal of property damage, infrastructural failure, and human casualties. Floods are typically one of the most devastating natural disasters, but in underdeveloped countries like Bangladesh, flooding is a worse problem. In light of climate change, scientific evidence indicates that a third of the country may experience floods on a yearly basis. Furthermore, it is one of the most populous and disaster-prone nations in the world (Talukdaret al. 2020).

To address the negative effects of natural and human-induced disasters, the Bangladesh government has adopted a number of plans and programs. Bangladesh is committed to implementing interventions that will help communities lower their risk of catastrophe in accordance with the Sendai Framework for Disaster Risk Reduction (SFDRR) goals, objectives, and priorities. Building appropriate policies and plans would be the first step in having a comprehensive disaster management framework. It is evident that Bangladesh has made progress in creating inclusive and effective disaster management plans (Chisty et al. 2022). Besides Bangladesh

have a robust institutional structure, clear legal frameworks, a vibrant civil society, a permanent cluster mechanism, a powerful UN system, and a very adaptable population. Particularly newly developed documents are based on the priority areas, direct national policy documents like NPDM, SOD, etc. are more aligned with Sendai Framework for Disaster Risk Reduction (Mannan et al. 2021).

Bangladesh is dedicated to implementing a socially and gender-inclusive disaster risk management strategy harmonization with regional and international management framework such as Sustainable Development Goals (SDGs), the Sendai Framework for Disaster Risk Reduction, and other international agreements and charters. The SOD has given careful consideration to and complies with these commitments. The SOD ensures involvement of all stakeholders and emphasizes the engagement of women, children, the elderly, and people with disabilities in all levels of disaster risk management in the spirit of "Leaving No One Behind" (SOD 2019). Thus, coordinated or integrated management systems are used globally to reduce catastrophe risk factors. Bangladesh has built a regulatory framework in light of this. The Bangladesh government has adopted standing rules on disasters as part of the regulatory framework. SOD was initially launched in 1997, and it was updated in 1999, 2010, and once more in 2019. For the risk or emergency management of disaster management committees and various organizations, SOD has specific tasks and responsibilities. Under SOD, every committee, ministry, or organization has created an action plan for each phase: normal, pre-disaster, warning, alert, post-disaster, and recovery. There is no hazard present during normal phase, but long-term activities are planned for the future. A new impending disaster and its effects are spread during the alert period. In this time, safety precautions are done. People experience the effects of natural calamities during disasters. When a crisis arises, steps are done to restore infrastructure and other utilities, allow people to resume their usual lives (SOD 2019).

In Bangladesh several studies were conducted on flood and riverbank erosion (Khatun et al. 2020, Ali et al. 202) from geographical and geomorphological point of view. On the other hand impact of flood and riverbank erosion such as socio-economic, health and sanitation status, and livelihood were addressed in different studies (Bhuiyan 2017, Hassan 2018, Mamun 2022). Recently Rerolle et al. (2022) studied about the risk associated with infant mortality in flood-affected areas of Bangladesh. Again Nayem et al. (2021) identified the influential factors for flood resilience in rural areas of northern Bangladesh. Hossain (2021) studied mental health problems associated with flood and riverbank erosion. Rahman et al. (2017) conducted a study on Standing orders on disaster implementation by Upazila and Union disaster management committee. But it was in Aila affected areas of Satkhira and Khulna situated in southern Bangladesh renowned for cyclone affected areas.

Standing Orders on Disaster (SOD) were developed with the goal of educating people about disaster preparedness and their roles in it. Standing Orders outlines all disaster management plans in order to reduce disaster risk and harm (Ansary and Hore 2009). SOD's effective and proactive approach has a big impact on disaster risk reduction. In order for SOD to be effective across all sectors and is crucial to understand how SOD is currently being implemented in flood affected countries of Bangladesh. To our best knowledge there is no study of evaluating SOD at flood prone area. To close this literature gap present study is designed to evaluate the level of SOD implementation by UDMC and UzDMC. Present study also assesses the people's opinions on different standing orders that are being implemented.

MATERIALS AND METHODS

Study area

Rangpur is located between latitudes 25º 18" and 25º 27" North and longitudes 88º56" and 89º32" East. Nilphamari and Lalmonirhat district are in the north of Rangpur's district. Again on the east sides are parts of Lalmonirhat, Kurigram, and Gaibandha. On the south, it is also bordered by Gaibandha and Dinajpur. Rangpur is home to several significant rivers. The topography and land formation of this region are greatly influenced by these rivers.

Teesta, Jamuneswari, Karatoya, Ghaghat, Akhira, and Chikli are some of them (BBS 2011). In this area, the minimum mean temperature is 6º C and the maximum mean temperature is 36.3º C. In this district, there are

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eight upazilas: Rangpur Sadar, Kaunia, Gangachara, Pirgachha, Mithapukur, and Pirgonj. of the eight upazilas, Gangachara, Kaunia, and Pirgachha are flood-prone.

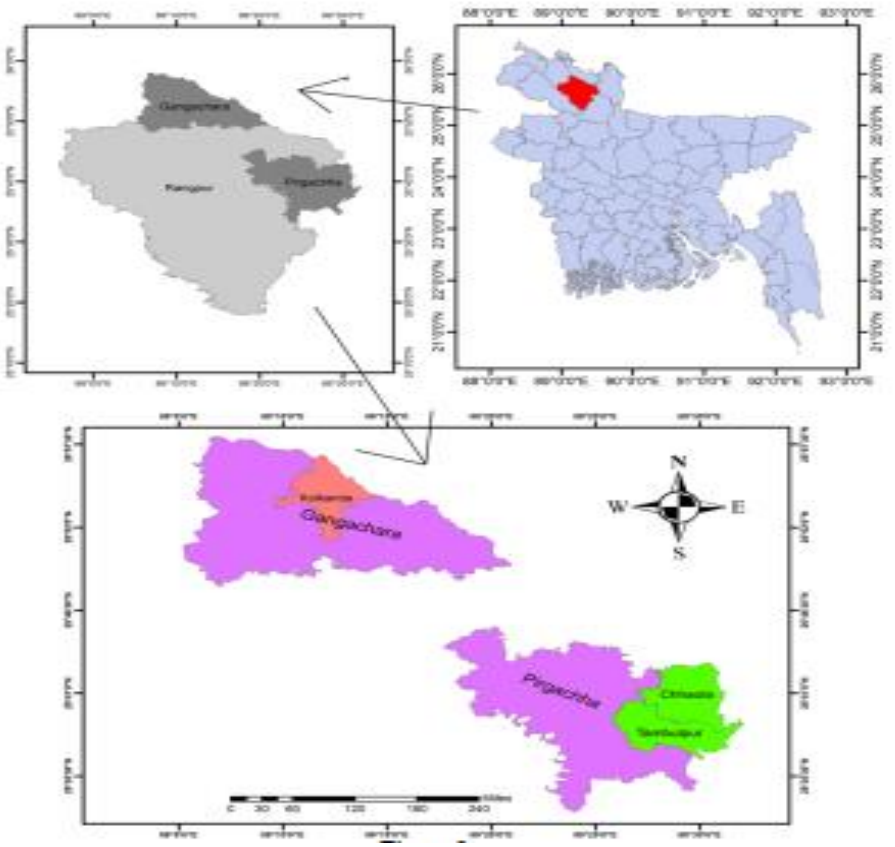

Figure 1: Map showing the study area.

Data collection and analysis

For this study both primary and secondary data were collected from primary and auxiliary sources. Methods of data collection were questionnaire survey and interview. For primary data, a structured questionnaire was prepared having both close and open ended questions. There were four segments of the questionnaire namely general information of the respondent, standing orders of disaster in three stages. A total of 100 respondents were interviewed for the people's perception. Again a total of 26 members were interviewed and they agreed to share their experience from of Upazila Disaster Management Committee (UzDMC) and Union Disaster Management Committee (UDMC).

The secondary data were collected from several national and international journals and books, coupled with research related published reports, newspapers, documents, population census, BBS census, maps and websites.

RESULTS AND DISCUSSION

Demographic profile

According to the survey the socioeconomic status of the respondents is shown in the following table (Table 1). In this survey majority (36%) of the people are between 31-40 years old whereas 14% peoples having age above 60 years old. Male and female ratio was 16:9 among the general inhabitants and most of the respondents are local residents.

In UzDMC respondents are only member of Management body whereas respondents of UDMC were local resident as well as member of Management committee. There found diversity among profession of respondents and among them majority are farmers (53%) whereas unemployed people were also found. All the respondents of general inhabitants are victims of flood.

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Table 1: Demographic profile of the respondents.

Indicators	**Variable**	**UzDMC**	**UDMC**	**General Inhabitants**
Gender	Male	8	31	64
	Female	2	7	36
Location of the respondent	Local Resident			100
	Nonresident			
	Member of Management Body	10		
	Resident & Member of Management Body		38	
Age (Year)	20-30			30
	31-40	6	21	36
	41-50	3	15	14
	51-60	1	2	9
	Above 60			11
Education	Uneducated	0	6	86
	Primary	0	32	14
	Secondary to Higher Secondary	3	0	0
	Graduation	7	0	0
Occupation	Farmer	0	4	53
	Fisherman	0	0	4
	Housewife	0	6	17
	Employee	7	10	0
	Business	0	13	2
	Unemployed	0	0	24
	Others	3	5	0
Relationship between flood and respondents	Victim	0	0	100
	Visitor	0	0	0
	Management Bodies	10	38	0
	Specialist	0	0	0
	Victim & Management Bodies	0	0	0

Performance evaluation of SOD at the disaster warning stage:

At the disaster warning stage respondents from three sectors namely UzDMC, UDMC, and general inhabitants ensured that flood warning messages were properly disseminated in their area. All the members from UzDMC and UDMC (97%) have said that they have visited the emergency flood shelters. Members of UDMC (66%) have said that they checked the drinking water supply sources and 34% said they did not review water supply sources. Both members from UzDMC (60%) and UDMC (74%) conducted water purification mock and general people attended their sessions and learned how to purify water. All the respondents of UzDMC and UDMC claimed that lifesaving materials and the number of appropriate people were not sufficient. They also

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added SOD could not implement due to a lack of updated technology and available resources.

Table 2: Implementation status of standing orders at disaster warning stage.

Standing Orders	UzDMC (%)		UDMC (%)		General Inhabitants	
	Yes	No	Yes	No	Yes	No
i. Dissemination of flood warning message	100	00	100	00	100	00
ii. Visiting emergency shelter center	100	00	97	03	-	-
iii. Reviewing fresh water supply system	90	10	66	34	-	-
iv. Demonstration mock of water purification	60	40	74	26	-	-
v. Check the stock of life savings materials	80	20	61	39	-	-
vi. Are their appropriate people available	00	100	00	100	-	-
vii. Having sufficient life savings materials	00	100	00	100	-	-
viii. Checklist of emergency kit	100	00	71	29	-	-
Average performance	66.25	33.75	58.63	41.37	12.5	0

Performance evaluation of SOD during flood disaster

The respondents of UzDMC and the UDMC said that they provided services according to the written agenda of SOD during the flood. According to the UzDMC and UDMC 100% of services were provided to the flood-affected areas. Whereas the general people said that they received 99.14% of services during the stage of Flood (Table 3). Among these orders, there was a rescue operation, coordination with different sectors for relief distribution as well as their security, rumor prevention, water purification, protection of the environment from degradation, etc. Only 6% of general inhabitants claim about the security of women.

Table 3: Implementation status of standing orders during flood

Standing orders	UzDMC		UDMC		General inhabitants	
	Yes	No	Yes	No	Yes	No
i. Emergency rescue operation	100	00	100	00	100	00
ii. Proper Coordination for relief distribution	100	00	100	00	100	00
iii. Concerning against rumor	100	00	100	00	100	00
iv. Give protection of relief responsible	100	00	100	00	00	100
v. Ensure Woman security	100	00	100	00	94	06
vi. Minimize environmental degradation	100	00	100	00	100	00
vii. Handover emergency resources	100	00	100	00	100	00
viii. Ensure availability of water purification system	100	00	100	00	100	00
Average performance	100	00	100	00	86.75	13.25

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Performance evaluation of SOD at the post-flood disaster

According to SOD UzDMC and UDMC have to collect damage and loss information as per SOS form and D-form and finally, they have to send it to their upper administrative body such as UDMC has to send it to UzDMC and UzDMC will send it to the ministry of disaster management and relief by using electronic medium (SOD, 2019). Both UzDMC and UDMC successfully collected and send loss and damage information after a flood. Members of both committees have taken rehabilitation plans considering build back better. They provided primary treatment for the injured people as well as ensuring the safe return of the displaced people.

From the interview, it was revealed that there was lacking psychological services to overcome disaster trauma among the affected people. They also demand specialists or trained people for psychological support.

Members from UzDMC (75%) and UDMC (79%) said they have arranged lesson-learning sessions. In these sessions, recommendations were provided for future disaster risk reduction and post-disaster activities.

Table 4: Implementation status of standing orders in post disaster stage

Standing Orders	UzDMC (%)		UDMC (%)		General Inhabitants	
	Yes	No	Yes	No	Yes	No
i. Gather flood loss and damage statistics	100	00	100	00	60	40
ii. Providing data to higher disaster management committee	90	10	100	00	-	-
iii. Plan for rehabilitation	100	00	100	00	-	-
iv. Monitoring and keeping a record of relief	100	00	100	00	-	-
v. Aid for displaced people	100	00	100	00	100	00
vi. Counseling the psycho-traumatize people	00	100	00	100	00	100
vii. Help the injured persons	100	00	100	00	70	30
viii. Conducting lesson learning session	75	25	79	21	30	70
The average performance	83.12	16.88	84.88	15.12	52	48

Overall Performance Evaluation of SOD in Three Disaster Stages

From the following equations of performance evaluation of SOD, it can be found that about 83.12% SOD was implemented by UzDMC where about 81.17%by UDMC (Equation 2). Here the performance rate of UzDMC is higher than the UDMC where about 50.42% SOD was implemented at community level (Equation 3).

Average performance of disaster management committee = Average performance at (warning stage + during flood+ post flood) 3cstages of flood÷ 3 = Overall performance (%)

According to the UzDMC, the average performance at three stages

(66.25%+100%+83.12%)/3 =83.12% …… (1)

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According to the UDMC, the average performance at three stages

(58.63%+100%+84.88%)/3 =81.17% ……. (2)

According to the general inhabitant, the average received services at three stages

(12.5%+86.75%+52%)/3 =50.42 %..... (3)

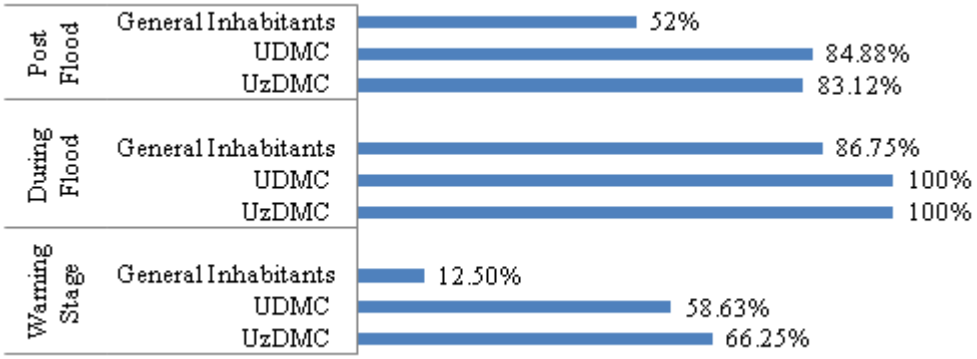

Figure 2: SOD implementation in three disaster stage

DISCUSSION

Arobi et al. (2019) and Hossain et al. (2021) found that different types mental health problem like anxiety, stress etc. are generally higher to flood affected people in Bangladesh. Outside of Bangladesh such types of mental health problems has significant association with flood and River bank erosion (Munro et al. 2017). So it is recommended to specialist or personal for physiological support. Present study revealed that there was lacking of psychological support for victims. Form the interview it was revealed that there was lacking of psychological services to overcome disaster trauma among the affected people. They also demand for the specialists or trained people for psychological support. Rahman et al. (2017) found that 75% respondent received concealing on mental health problem after aila whereas it was fully absent in these flood affected area.

Members from UzDMC and UDMC claimed that lifesaving materials and the number of appropriate people were not sufficient. This may be due to proper coordination and lacking of resources. Babul Hossain (2020) found in his study that during flood there remains limited sanction as well as failure of emergency communications.

Among challenges there is lack of relevant training. An exclusive training is urgent needed for successful implementation of SOD in these areas. Because training will give the exact idea about SOD. The roles and responsibilities of the members can be easily understood by proper training program. Again there hardly found any government organization whose are responsible for proper monitoring of SOD implementation program. For this this study found lack of follow up or monitoring program.

Budget constraint for conducting several programs such as arrange regular meeting, drill of emergency program etc. are also found in these study. Some of the respondent said that sometimes they do not have minimum budget for conducting regular meeting.

Though there is no accountability for SOD implementation as it is only an order and members have no legal binding for these issues. So absence of accountability is another challenge of SOD implementation. Again most of the officials, members, opinion leaders, and political people have the tradition mindset of disaster management. They want to focus on relief oriented activities. So those, day by day preparedness are lagging behind. These types of behavior are great challenge to implement SOD in these areas.

CONCLUSION

In disaster management of Bangladesh there found a paradigm change from convention relief and rehabilitation to sustainable reduction of disaster risk. Again this paradigm change of disaster management has been reflected in the "SOD (Standing Orders on Disaster)" and other policies, plans and guidelines adopted by the Government of Bangladesh (Haque Mafuzul 2019).The SOD outlines the different roles and duties of different institutions formulated by the governments. This study assessed the current level of knowledge, functionality and capacity of upazila disaster management committees. The outcome of this study will help the policy makers and researchers a clear understanding about the root level implementation of SOD in Bangladesh. It will help the policy makers for further developments and modification of SOD. It will also help to find out the weakness of the SOD implementation as well as strengthening disaster management capacity at root levels.

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REFERENCES

1. Ali M.R., Ahmed Z., Islam A.H.M. and M.M. Rahman. 2021. River Bank Erosion Induced Population Migration and Adaptation Strategies in the Sirajganj Sadar Upazila, Bangladesh. European Journal of Environment and Earth Sciences, Vol. 2(2)
2. Ansary M.A. and R. Hore. 2009. Critical Review Of The Standing Orders On Disaster Management, Bangladesh New Technologies For Urban Safety Of Mega Cities In Asia
3. Arobi S., Naher J. and T.R. Soron. 2019. Impact of River Bank Erosion on Mental Health and Coping Capacity in Bangladesh. Global Psychiatry.2(2):195.
4. Babul Hossain. 2020. Role of organizations in preparedness and emergency response to flood disaster in Bangladesh, Geoenvironmental Disasters, 7:33. https://doi.org/10.1186/s40677-020-00167-7
5. BBS (Bangladesh Bureau of Statistics). 2011. District Statistics, Rangpur.
6. Bhuiyan, M.A.H., Islam S.M.D.U. & G. Azam. 2017. Exploring impacts and livelihood vulnerability of riverbank erosion hazard among rural household along the river Padma of Bangladesh. Environ Syst Res, 6:25. https://doi.org/10.1186/s40068-017-0102-9
7. Chisty M.A., Muhtasim M.F., Biva J., Dola S.E.A. and N.A.Khan. 2022. Sendai Framework for Disaster Risk Reduction (SFDRR) and disaster management policies in Bangladesh: How far we have come to make communities resilient?International Journal of Disaster Risk Reduction, 76(103039)
8. Haque Mafuzul. 2019. "Paradigm Shift in Disaster Management: Bangladesh Experience", in Huong Ha, Lalitha S. Fernando, S.K. Mahajan edited, Disaster Risk Management: Case Studies in South Asian Countries, Business Expert Press, USA.
9. Hassan, A., Siddik M.A., Akhtar M.P. and M.H. Rahman. 2018. River bank erosion and associated Impacts on livelihood: a case study of Harinatpur, Barishal. Barishal University Journal 5(1&2): 215-224.
10. Hossain A., M.J. Alam and M.R. Haque . 2021. Effects of riverbank erosion on mental health of the affected people in Bangladesh. PLOS ONE 16(7).https://doi.org/10.1371/journal.pone.0254782
11. Khatun M., Rahaman S.M., Garai S., Das P. and S.Tiwari. 2020. Assessing River Bank Erosion in the Ganges Using Remote Sensing and GIS. Geospatial Technology for Environmental Hazards Edition: 1Chapter: 22Publisher: Springer, Cham Page. 499-512.
12. Khosravi K, Pham B.T., Chapi K., Shirzadi A., Shahabi H., Revhaug I., Prakash I. and D.T. Bui. 2018. A comparative assessment of decision trees algorithms for flash flood susceptibility modeling at Haraz watershed, northern Iran. Sci Total Environ, 627:744–755
13. Mamun, A.A., Islam A.R.M.T, Alam E., Pal S.C. and G.M.M. Alam. 2022. Assessing Riverbank Erosion and Livelihood Resilience Using Traditional Approaches in Northern Bangladesh. Sustainability.14: 2348. https://doi.org/10.3390/su14042348

14. Mannan S., Haque D.M.E. and N.C.D. Sarker. 2021. A study on national DRR policy in alignment with the SFDRR: Identifying the scopes of improvement for Bangladesh. Progress in Disaster Science. https://doi.org/10.1016/j.pdisas.2021.100206.
15. Munro A, Kovats R.S., Rubin G.J., Waite T.D., Bone A., Armstrong B. et al. 2017. Effect of evacuation and displacement on the association between flooding and mental health outcomes: a cross sectional analysis of UK survey data. Lancet Planet Health, 1(4):e134–e41. pmid:28944321
16. Nayem Z., Hossain M.S., Nayeem A. and M.A. Rahaman. 2021. Analyzing Influential Factors to Flood Resilience in the Northern Flood- Prone Rural Areas of Bangladesh. In: Alam, G.M.M., Erdiaw-Kwasie, M.O., Nagy, G.J., Leal Filho, W. (eds) Climate Vulnerability and Resilience in the Global South. Climate Change Management. Springer, Cham. https://doi.org/10.1007/978-3-030-77259-8_16
17. Rahman M.S. Mia M.Y. Ansary M.A. and N. Sulatana. 2017. Evaluation of the implementation of SOD for some affected upazilas of Bangladesh during the 2009 cyclone AilaJournal of Civil Engineering (IEB), 45 (2): 99-108
18. Rerolle, F., Arnold, B., BenmarhniaT. et al. 2022. Excess risk in infant mortality among populations living in flood prone areas in Bangladesh: A cluster-matched cohort study over three decades, 1988-2017, 03 November 2022, PREPRINT (Version 1) available at Research Square [https://doi.org/10.21203/rs.3.rs-2231972/v1]
19. SOD (Standing Orders on Disaster). 2019. Government of the People's Republic of Bangladesh. Ministry of Disaster Management and Relief.
20. Talukdar S., Ghose B. and Shahfahad.2020. Flood susceptibility modeling in Teesta River basin, Bangladesh using novel ensembles of bagging algorithms. Stoch Environ Res Risk Assess, 34, 2277–2300. https://doi.org/10.1007/s00477-020-01862-5