

Economic Commission for Latin America and the Caribbean

ECLAC SUBREGIONAL HEADQUARTERS FOR THE CARIBBEAN



Report of the expert group meeting to review a study on an economic analysis of flooding in the Caribbean: the case of Jamaica and Trinidad and Tobago



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Subregional Headquarters for the Caribbean**

Expert group meeting to review a study on an
economic analysis of flooding in the Caribbean:
the case of Jamaica and Trinidad and Tobago
25 July 2019
Port of Spain, Trinidad and Tobago

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**REPORT OF THE EXPERT GROUP MEETING TO REVIEW A STUDY
ON AN ECONOMIC ANALYSIS OF FLOODING IN THE CARIBBEAN:
THE CASE OF JAMAICA AND TRINIDAD AND TOBAGO**

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A. ATTENDANCE AND ORGANIZATION OF WORK

1. Place and date

1. The Economic Commission for Latin American and the Caribbean (ECLAC) convened an expert group meeting to review a study titled “An economic analysis of flooding in the Caribbean: the case of Jamaica and Trinidad and Tobago”. The meeting took place at its offices, in Port of Spain, Trinidad and Tobago, on 25 July 2019.

2. Attendance

2. There were twelve persons in attendance including representatives from the following organizations: The Association of Caribbean States (ACS), Office of Disaster Preparedness and Management (ODPM), Water Resources Authority, Jamaica (WRA-Jamaica), St. Mary Municipal Corporation - Jamaica, the World Bank, ECLAC subregional headquarters for the Caribbean and one consultant.

3. Meeting agenda

1. On-site/ Online registration
2. Security briefing for on-site participants
3. Agenda item 1: Opening of meeting
4. Agenda item 2: Presentation of report “An economic analysis of flooding in the Caribbean - the case of Jamaica and Trinidad and Tobago”
5. Agenda item 3: Discussion
6. Agenda item 4: Conclusions and recommendations
7. Closure of the meeting.

B. REPORTING THE PROCEEDINGS

1. Opening of the meeting

3. The Economic Affairs Officer of the Sustainable Development and Disaster Unit of ECLAC subregional headquarters for the Caribbean welcomed all participants both online and those physically present at the ECLAC office. He explained that the purpose of the meeting was to engage discussion on the study “An economic analysis of flooding in the Caribbean - the case of Jamaica and Trinidad and Tobago”.

2. Presentation of the report “An economic analysis of flooding in the Caribbean: the case of Jamaica and Trinidad and Tobago”

4. In introducing this presentation, the Coordinator of the Sustainable Development and Disaster Unit noted that the purpose of the paper was to raise awareness on the status of flooding in the Caribbean, and to provide a sense of the scope of economic and social impacts in the subregion, particularly in light of recurring flooding events in the subregion. He also emphasized that flooding, while not typically a national

event, occurred with relatively high frequency, and therefore warranted the increased attention of policymakers. In this regard, he observed that both Jamaica and Trinidad and Tobago were two of the countries which suffered the most frequent flooding among Caribbean countries. He also mentioned that assessing flooding events would allow the public authorities to do a more robust cost-benefit analysis of any flooding mitigation policy. Finally, he pointed out that the study also aimed to provide a methodological approach, based on ECLAC's Damage and Loss Assessment (DaLA) Methodology, which could be used by countries to assess the social and economic impacts of localized flooding events in the future. He indicated ECLAC's willingness to provide training on this methodology to countries in the future. He then invited the Economic Affairs Officer, Sustainable Development and Disaster Unit, ECLAC to present a summary of the findings of the research.

5. The Economic Affairs Officer, Sustainable Development and Disaster Unit acknowledged that the paper was prepared jointly by the Associate Environmental Affairs Officer and himself with guidance from the Coordinator of the Sustainable Development and Disaster Unit. He then gave an overview of the paper, citing the Caribbean's high frequency of flooding, noting that there were relatively fewer assessments of its economic impacts compared to assessments of hurricanes. He further noted that while in value terms the impacts were comparatively small, flooding affected a large number of persons annually in the Caribbean, as evidenced from data gathered by International Disaster Database (EM-DAT).

6. Given the localized nature of flooding he then elaborated the approach to the study, noting that the review was undertaken for specific locations in the case countries. These were: Charlieville in the Borough of Chaguanas, and Kelly Village and St. Helena in the Region of Tunapuna/Piarco on the island of Trinidad; and the Parish of St. Mary in Jamaica. He also explained that the approach involved a review of recent flooding events – (October 2018 floods in Trinidad, and three specific floods in Jamaica in 2012, 2017 and 2018). The Economic Affairs Officer also noted that the ECLAC DaLA Methodology was used as a guide in assessing flooding effects. Estimates were made in three broad categories viz. i) Damage, ii) Losses, and iii) Additional costs which were further portioned as follows:

- a. Social sectors (Education and housing)
- b. Infrastructure sectors (Water and electricity)
- c. Economic sectors (Agriculture, manufacturing and commerce)
- d. Additional costs (cost of additional labour, clean-up supplies, shelters etc)

7. He pointed out that these sectors were selected because in the case of flooding in the Caribbean, there are usually no damage or losses in the telecommunication sector. He emphasized that the estimates of this paper cannot be strictly interpreted as DaLA assessments since such assessments would require extensive interviews with relevant stakeholders in all the aforementioned sectors, and a diagnostic on how the damage was caused to infrastructure and how it could be avoided in the future. He pointed out that a different approach was used for each country. In the Trinidad case study, several field visits were undertaken to the affected study areas in order to gather and/or validate data for the assessment, while in the case of Jamaica, the estimates were based extensively on previous assessments of flooding events conducted by the Planning Institute of Jamaica (PIOJ).

8. The presentation provided summaries of the estimates of flooding effects for the selected sites in the countries, with a total damage and loss estimate of USD 12,598,865 for Trinidad, and USD 2,102,804 for Jamaica. In the case of Trinidad, social sector damage and loss comprised the largest share (93 per cent) of the total. For Jamaica, the largest share of total damage and loss was for the infrastructure sector (67 per cent).

9. In concluding his presentation, the Economic Affairs Officer noted that the results of the study strengthen the case for increased public sector investments that are spatially allocated in order to mitigate

both the economic and social effects of flooding in the Caribbean. Moreover, they demonstrate the necessity to encourage the systemic and sectoral collection of data related to low-impact recurrent events to allow for better understanding of the pervasive effects of flooding.

10. The Associate Environmental Affairs Officer of ECLAC subregional headquarters provided additional details regarding the context and motivation for the study. She affirmed that flooding in the Caribbean is indeed under-assessed relative to other events. She based this observation on data from the EM-DAT database which compared the frequency of floods and storms with their assessments globally. She specifically mentioned that just 20 per cent of the flooding events that are in the EM-DAT have data on damage. In the case of storms this number is 46 per cent. She also emphasized that ECLAC believed that local experts should be trained in flood assessment methodology in particular, as this would enable countries to better assess the economic and social impacts of flooding. In referencing the data collection experience for the study in Trinidad and Tobago, she underscored that the figures presented were related to specific events, and that where figures were unavailable, census data (which was more readily available) was used to calibrate estimates. Finally, the Associate Environmental Affairs Officer reflected on some of the flood adaptation measures observed in Trinidad during the field visits and pointed to homeowners building more elevated structures and using paving materials that were easier to clean after flooding events.

11. The Coordinator of the Sustainable Development and Disaster Unit pointed out that while the study was able to make some assessments of damage and loss, these figures are typically low for infrastructure since floods tend to have minor impacts on infrastructure. Also figures for additional costs were largely unavailable for the study. He indicated that this particular deficiency showed the importance of having good baseline data before an event takes place, thereby making subsequent assessments easier.

3. Discussion

12. The Economic Affairs Officer then invited the participating experts to share their views on the study.

13. The representative from ODPM noted the concerns raised with respect to the availability of baseline data and indicated that the government is currently embarking on this and that this exercise should be completed this year. He further explained that this was not only a drainage issue but that it was also a part of the mitigation process. He acknowledged that all aspects of a flood response also has a cost, but all agencies when responding often did not take these into account thus resulting in difficulties in establishing additional costs for flood response. He also welcomed the possibility of locals being trained in the methodology, as well as the availability of the template for future assessments.

14. The ACS representative noted that the study was useful for informing current flood mitigation policy and recommended the conduct of similar studies in the future. In this regard, he noted that such studies should also give consideration to factors such as:

- Other human issues relevant to flood mitigation policies such as level of preparedness, vulnerability to these particular hazards, shelter management;
- Differences between the amounts paid out by the Caribbean Catastrophe Risk Insurance Facility Segregated Portfolio Company (in the case of Trinidad and Tobago), and the amounts assessed for economic impacts of flooding;
- Availability and use of GIS maps for future flood mitigation planning and future response;
- Creation of local assessment teams that can conduct studies in the event of floods and other natural disasters; and
- The importance of evaluating the level of flood preparation, such as the availability of early warning systems, and the evaluation and preparation of shelters.

15. The World Bank representative noted the importance of the study and recommended that similar studies be undertaken in the future. He mentioned that this study motivated the case for having national teams to do the assessments of this kind of disaster.

16. The representative from the St. Mary Municipal Corporation expressed sincere gratitude to ECLAC for the focused flooding study on the parish and noted that the information will be useful for informing a sustainable development plan which is currently being elaborated for the municipality. She further noted that specific research on flooding was extremely valuable since the town of Port Maria was only 1 metre above sea-level and extremely vulnerable to flooding. She was grateful for the specific damage estimates related to the municipality.

17. The representative from the Water Resources Authority – Jamaica inquired whether the researchers were able to engage with the National Emergency Response GIS team (Jamaica) in the conduct of the study. She noted that this entity also conducts similar assessments that could also add to the findings of the study. In response, the Coordinator of the Sustainable Development and Disaster Unit indicated that he was familiar with the work of this team but noted that they typically undertake their first estimate in the form of a Damage and Needs Assessment (DaNA). He explained that this strategy effectively complements the DaLA Methodology as a first step in the process of assessment. He however emphasized that the flooding methodology applied in the study, while not a DaLA, applies elements of this methodology in arriving at economic estimates of flooding.

18. Finally, the Public Information Assistant of the ECLAC subregional headquarters for the Caribbean suggested the need for similar studies to be undertaken on the occurrence of landslides since this type of disaster will typically arise under conditions of excessive rainfall, as is the case with flooding. He therefore suggested that in flooding studies, recommendations should also be made with respect to landslide events, as related costs could be overlooked. The meeting noted this proposal.

4. Closing of the meeting

19. The Economic Affairs Officer, Sustainable Development and Disaster Unit thanked all delegates for their interventions and for their participation in the WebEx, as well as ECLAC colleagues for their support in the conduct of the meeting. The Coordinator of the Sustainable Development and Disaster Unit endorsed his comments and adjourned the meeting.

Annex I**List of participants**

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