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## Study on Climate Change and Disaster Related Loss and Damage Accounting

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DISCUSSION PAPER SERIES NO. 2023-47

# Study on Climate Change and Disaster Related Loss and Damage Accounting

*Sonny N. Domingo and Arvie Joy A. Manejar*



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# Study on Climate Change and Disaster Related Loss and Damage Accounting <sup>1</sup>

## Abstract

The 28th United Nations Conference of Parties (COP 28) in November 2023 started with the manifestation of concrete commitments from developed countries and ended with a progressive promise to complete the establishment of a climate change loss and damage fund, sustain and administer country contributions, and continue to work toward fossil fuel reduction and disaster risk reduction and management. The move contributes toward an equitable burden distribution between the highest GHG emitters in the global community and the most affected nations by climate-related disasters. This is important as evidences show that developing countries like the Philippines are disproportionately more affected by climate change-related disaster events. This study assessed the particulars of the climate and disaster related loss and damage accounting in the Philippines and looked into ways to better the country's position to tap the newly establish Loss and Damage Fund.

Keywords: climate change impact, loss and damage accounting, disaster risk reduction and management

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<sup>1</sup> Report prepared and submitted by Dr. Sonny N Domingo and Ms Arvie Joy A. Manejar, PIDS Senior research Fellow and former Research Specialist, respectively.

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# Climate Change-Disaster Risk Reduction and Management Loss and Damage Accounting in the Philippines <sup>2</sup>

## 1. Introduction / Background of the Study

### 1.1. Rationale

In the 27th United Nations Climate Change Conference of the Parties (COP 27) held in 2022, the decades-old advocacy by resource-poor climate-vulnerable countries yielded a consensus on the establishment of a climate change loss and damage fund. The fund was envisioned to be a financial pool for assistance to countries most impacted by climate change. COP 27 defined loss and damage as the unavoidable consequences from climate change as manifested in rising sea levels, heatwaves, desertification, acidification, and extreme weather events, despite adaptation and mitigation initiatives. They regarded losses as permanent and irreversible, while damages can be addressed through reparation and restoration.

Although COP27 ended with details and fund guidelines yet to be set, the move was a much-awaited step toward an equitable distribution of burden between the highest greenhouse gas (GHG) emitters in the global community and the most affected nations by climate and weather-related disasters.

The 28th Conference of Parties (COP 28) in November the following year started with the manifestation of concrete commitments from developed countries and ended with a progressive promise to complete the establishment of the fund, sustain and administer country contributions, and continue to work toward fossil fuel reduction and disaster risk reduction and management.

The 2023 COP28 climate summit firmed up the agreement on a ‘loss and damage’ fund to compensate poor states for the effects of climate change. The agreement meant that wealthy states and major polluters will put millions of dollars towards a fund that will in turn distribute resources to poor states harmed by climate change. The fund will be initially administered by the World Bank for the first four years, with the Philippine government manifesting interest as the succeeding host. Initial commitments amounted to US\$430m, including commitments from UAE (\$100M), United Kingdom (US\$75m), United States of America (US\$24.5m), Japan (US\$10m) and Germany (US\$100m). These, however, are still short of the target \$100 billion annual climate finance.

Aside from the loss and damage fund, COP 28 yielded the new framework on adaptation action, and the designation of the United Nations Office for Project Services (UNOPS) and the United Nations Office for Disaster Risk Reduction (UNDRR) and as the hosts of the Santiago Network secretariat. Established during the 2019 COP 25, the Santiago Network addresses climate change impacts in poorer economies by facilitating action and technical assistance from various development entities, and networks. The network assists developing countries in mitigating and addressing climate risks and climate change-related losses and damages via comprehensive access to resources, knowledge, and technical support. With its own substantial fund pledges from Denmark, Germany, Ireland, Luxembourg, Switzerland, and the United Kingdom of Great Britain and Northern Ireland, amounting to approximately \$40.7 million, the Santiago Network will have a structural and functional link to the Loss & Damage Fund.

The contention that developing countries are disproportionately more affected by climate change-related disaster events is real. In 2021, damages due to natural extreme events and disasters in the Philippines was estimated at PHP 60.68 billion (Philippine Statistics Authority, 2022). Fund augmentation for

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<sup>2</sup> Report prepared and submitted by Dr. Sonny N Domingo and Ms Arvie Joy A Manejar, PIDS Senior research Fellow and Research Analyst, respectively.

disaster response, recovery and rehabilitation is welcome with damages and losses piling up each year from the 20 or more tropical cyclones that enter its area of responsibility. Such is among the reasons why the World Risk Report 2022 ranked the Philippines first in disaster risk out of 193 countries with high scores in exposure, vulnerability, and lack of coping mechanism and adaptive capacities.

The above highlight the need to better the country’s institutional mechanism for climate change and disaster impact assessment and reporting. This is doubly important as the Philippines is subject to compounding elements that magnify disaster impacts. This study looked into the particulars of the climate and disaster related loss and damage accounting in the Philippines and recommends ways to better position and prepare the country to tap the newly established Loss and Damage Fund.

**TABLE 1. TOP 10 COUNTRIES FROM THE WORLD RISK INDEX 2022**

<b>Country</b>	<b>Risk</b>
Philippines	46.82
India	42.31
Indonesia	41.46
Colombia	38.37
Mexico	37.55
Myanmar	35.49
Mozambique	34.37
China	28.70
Bangladesh	27.90
Pakistan	26.75

### *1.2. Objectives and Policy Research Questions*

Recognizing the need to evaluate bureaucratic tools and platforms for CC-DRR impact monitoring, the study generally assessed the existing CC-DRR loss and damage accounting system in the Philippines within the framework of Republic Act No. 10121 or the Philippine Disaster Reduction and Management Act.

It looked at the policy’s (a) program theory; (b) service delivery and utilization, and (c) program utilization.

Specifically, this research: (1) examined the methodologies, tools, and process for climate change and post-disaster L&D accounting and the extent of their coverage; (2) gathered insights on objectives and intended outcomes of the process based on documentary information and perception of stakeholders in national and subnational levels; (3) documented actual implementation in the ground, including case studies of L&D accounting in past disasters and climate events; (4) investigated resource inputs across institutional structures; and (5) provided recommendations to aid policy implementation.

The study endeavors to answer the following policy questions:

- a. What monitoring and evaluation platforms are in place for disaster loss and damage accounting?
- b. Are they supported by policy?
- c. What policy and institutional augmentations are required?

The reliability of monitoring and evaluation platforms to accurately capture L&D figures is put to the test as climate-related disaster events continue to intensify and their impacts compound. It behooves for us to examine whether existing policies and mechanisms are enough to enable facilitated and informed recovery and rehabilitation interventions in line with Build-Back-Better strategy, and resiliency tenets. Results from this study will add a developing country-focused discussion around COP27's loss and damage fund, and help augment national policy and PAPs on disaster rehabilitation and recovery.

## **2.Results and Discussion**

### *2.1 L&D Accounting Approaches and Tools*

UNEP 2022 Adaptation Gap report indicates that international adaptation flows to developing countries are five to ten times below estimated needs which should reach at least USD 300 billion per year by 2030.

The report also finds that developing countries could incur compounding costs as climate change accelerates. Adaptation measures, from building sea walls to creating drought-resistant crops, could exceed USD565 billion by 2050.

Onset of disasters and extreme climate events can disrupt society-wide and systemic crises, rendering institutional functions limited. Loss and damage finance needs influence our ability to mitigate and adapt to climate change.

Methodologies on L&D accounting vary depending on school of thought (adaptation versus disaster) which could affect timeframe, scope of effects, and valuation. For instance, climate change adaptation (CCA) measures costs prior to a possible disaster while disaster risk reduction (DRR) covers pre and post assessments of disaster.

Availability of baseline data for reference allows comparison of damage estimates across different models. Most modalities focus on areas with existing markets. While qualitative indicators are also integral, timeframe becomes a qualifier. Reliable assessment outputs are required shortly after disasters to enable countries to request for international help (Thomas, Menke, & Serdeczny, 2018).

The following table (Table 2) outlines available methodologies and tools that have been used to measure impacts of disasters and climate change events. Variability depends on hazards covered, scope of assessment, and modeling designs.

Table 3 shows different financing instruments. Those that do not transfer risk retains burden of loss and damage to affected countries, but implementors are expecting a decline in the usage of risk transfer modes as climate change worsens.

An international approach that leverages the impacts off developing countries and transfers funding responsibility to biggest contributors remain imminent. Past COP meetings suggested establishing an international Mechanism on Compensation and Rehabilitation to address four distinct types of permanent L&D:

- L&D addressed through insurance or risk-transfer mechanisms
- Economic L&D from extreme and slow onset disasters, not covered through risk transfer
- Economic losses difficult to quantify
- Non-economic losses (ecosystem services, culture and heritage, indigenous knowledge)

Warsaw International Mechanism (WIM) came out in 2013 at the 19th Conference of the Parties (COP) to address CC-specific L&D. Demands from small-island developing states and least developed countries (LDCs) prompted its establishment to acquire compensation from costs not tackled enough by adaptation and risk reduction strategies. However, years of its implementation stalled at knowledge-gathering and coordination functions with no definite progress on funding mechanism (Acosta, et al., 2016).

One option considered is debt relief for loss and damage swaps which could buffer against longer-term effects but will not address immediate needs or activate catastrophe bonds where repayable loans are converted into grants following disaster thresholds. However, cases like this may also promote disincentives against resilience and risk reduction (Thomas, Menke, & Serdeczny, 2018).



Table 2. L&D methodology options

Methodology	Models/Tools	Category	Hazards covered	Costs addressed	Methodology details	Advantages	Disadvantages
Catastrophe risk models	Hazard and loss modeling framework (CCRIF model)	DRR, post and pre disaster	hurricanes, storms, earthquakes	Potential losses before an actual event	Hazard and loss are modelled for every 1km grid square. Developed to assist CCRIF with new insurance policy formulations that are based on modelled loss rather than indexed parametric loss	Modelling of past disasters	Does not include parameters for modelling the potential impacts from rainfall
Economic models	Econometric models (e.g. hurricane wind damage index)	DRR, mostly post disaster	All hazards, depending on the model used	Long-run economic impacts	Diverse economic models which are mainly based on observed data and employ statistical methods. Widely used in the agricultural sector.	Possibility to estimate indirect losses and macroeconomic effects	Only useful in situations with sufficient pre-disaster data for robust analysis; rarely used to estimate damages to physical structures due to lack of data
	Macroeconomic models (IO models)	DRR, post-disaster	All hazards	Indirect losses following disasters	Provide inter-industry relationships that show how the output of one industry may be the input of another. The model can be used in conjunction with other models or adapted to integrate with other models.	Simple model that doesn't require high levels of experience, can be used in combination with other models	Linearity and rigid structure of models. Lack of explicit resource constraints. Lack of responses to price changes.
Needs assessment methodology	Damage and loss assessment methodology (DALA)	DRR, post-disaster	All hazards + slowly evolving disasters	Social and economic consequences	Needs assessment in the recovery process of the disaster. Makes it possible to calculate disaster impact on temporary	Uses country's system of national accounts. Social sectors are taken into account.	No estimation of long-term economic impact. Does not capture social or psychological impacts

Methodology	Models/Tools	Category	Hazards covered	Costs addressed	Methodology details	Advantages	Disadvantages
					economic growth, household income, livelihoods and enterprises		
	Post-disaster needs assessment model (PDNA) as applied by the World Bank	DRR, post-disaster	All hazards + slowly evolving disasters	Damage assessment to estimate the financial, technical, and human resources needed to recover from, reconstruct and manage risk after a disaster	Builds on DALA to include human recovery needs assessment (HRNA). Includes validation.	Improvement of DALA methodology. Identifies recovery of needs. Long-term implications are covered	Does not take into consideration whether resources for recovery are actually available
Risk assessment methodology	Catastrophe simulation model (CATSIM)	DRR, post-disaster	Floods, hurricanes, weather and climate-related hazards, earthquakes	Costs and benefits of various financial strategies for managing risk, and implications for important indicators like economic growth or debt	Allows for calculation of the optimal mix of pre and post disaster measures in potential disaster situations at the national scale.	Easy to use GUI, interactive tool	High level of expertise required
	Disaster Loss Assessment Guidelines by Emergency Management Australia (EMA)	DRR, post and pre disaster	Floods, hurricanes, weather and climate-related hazards, earthquakes	Economic impact of a disaster in a regional context, potential losses including total and avoidable losses	Guidelines explain the process of loss assessment and provide a step by step approach to conduct and economic assessment of potential disaster losses	Does not require extensive expert knowledge	Only applicable in a regional context
	Hazuz-MH Hybrid Assessment Model by US Federal Emergency Management Agency (FEMA)	DRR, post and pre disaster	Floods, hurricanes, earthquakes, coastal surge	Potential losses in terms of economic losses, structural damage and indirect economic impacts	Combines the exposure for a selected area and the level or intensity of the hazard affecting the exposed area to calculate	Detailed estimates of costs, spatial visualization of impacts, information on the impact of past	GIS knowledge is required. Details not always be available in developing countries. Assumptions of the model are inflexible.

Methodology	Models/Tools	Category	Hazards covered	Costs addressed	Methodology details	Advantages	Disadvantages
					potential losses. GIS-based model	hazards is stored and can be accessed	
	Central American Probabilistic Risk Assessment (CAPRA)	DRR, pre disaster	Earthquakes, tsunamis, hurricanes, floods, landslides	Does not assess costs directly but offers maps and graphs. Includes cost/benefit analysis and the possibility to develop risk financing strategies	Multi-hazard risk assessment model based on GIS. Consists of a risk map tool, cost-benefit analysis tools for risk prevention or mitigation and programs that assist in designing risk financing strategies.	Free and open source software designed for decision making and risk transfer	High level of training needed
	Handbook for estimating socio-economic and environmental effects of disasters	DRR, post and pre disaster	Floods, hurricanes, weather and climate-related hazards, earthquakes	Socio-economic and environmental costs	Measures in monetary terms the impact of disasters on the society, economy, and environment of the affected country or region	Improves DALA methodology	Monetary value lacking for psychological suffering
	Desinventar	DRR, post-disaster	All hazards	Mostly qualitative analysis	Conceptual and methodological tool for construction of databases of loss, damage, or effects caused by emergencies or disasters	Includes indicators for human loss, physical damage and economic loss, can handle small-scale events	High number of qualitative units, partly overlapping/ambiguity in data field definitions

Source: Lifted from Thomas, Menke, & Serdeczny 2018

Table 3. Innovative financing instruments for loss and damage

Finance instruments	Definition
Micro grants	Small nonrepayable grants disbursed to individuals for investments into resilience-increasing technologies. Recipients contribute in kind through labor input or materials
Disaster relief/contingency fund	Public resources of at-risk countries are set aside in a disaster relief or contingency fund so that resources are available in the event of a disaster
Micro savings	Low income people join efforts in saving money and lend to each other through coordinated loan groups
Contingent credit/loan	Contingent on recipient country having implemented measures to increase resilience
Micro credits	Small repayable credits issued to individuals with no access to credits
Insurance	Pays a premium to insurer and receives pay-outs in the event of loss
Bonds	Issued by government or corporations and are sold to raise funds for project that turn profits from which they can pay interest and/or repay the principal
Ex-post bonds	Issued after a disaster in order to finance recovery
Climate bonds	Issuer guarantees that resources will be used for climate-friendly investments
Catastrophe bonds	Issued to investors but debt is deferred, reduced, or canceled if a predefined event affects the bond-issuer

Source: Lifted from Thomas, Menke, & Serdeczny 2018

## 2.2 International landscape

UNDRR expounds the uncaptured and invisible impacts of disasters and slow onset events (United Nations Office for Disaster Risk Reduction (UNDRR), 2022). This emerging list remains to be reflected in methodologies detailed above.

Economic shockwaves are harder for poorer countries. Losses are greater relative to their gross domestic product (GDP), ranging from 0.8 to 1.0 percent share. Developed countries, on the other hand, have broad insurance to facilitate quicker recovery while developing countries barely reach 10 percent coverage.

Small scale and slow onset impacts usually go unaccounted, undocumented, and unrecorded especially in subnational, localized areas, but they bring tremendous stream of losses at the individual level or livelihood-specific (e.g. rural smallholder farms, low income provinces).

Supply chain disruptions have heavy implications not only for food security but industry operations, leading to fluctuations in supply of staples, steep rise in prices, and availability of components for automobiles, lumber, and coal.

As the world moves towards digital economy, it is worth examining whether our information and communications technology infrastructure are disaster and climate resilient. Lost

connectivity means disrupted workflows and decreased productivity. It also affects how critical information and updates are disseminated; lags in relief and response are inevitable without secure, accurate, and reliable communications.

Extreme temperatures have debilitating consequences to crop harvests and cooling systems of data centers. Safety concerns for manual labor, a characteristic of most developing economies, should be given attention.

The COVID-19 pandemic reinforces the relationship between natural resources and health. Hazards can activate disease spreading vectors. Flood occurrences usually see an uptick in leptospirosis cases. Rising temperatures become ideal for malaria while drought attracts hantavirus carriers.

A very glaring observation in L&D modalities is the minimal coverage on psychological distress. Disadvantaged groups (e.g. persons with disabilities, indigenous peoples, LGBTQIA+), and poorer and marginalized communities have been found more likely to suffer lingering psychological damage alongside longer displacement periods. Low values of belonging and inclusiveness can affect their resiliency.

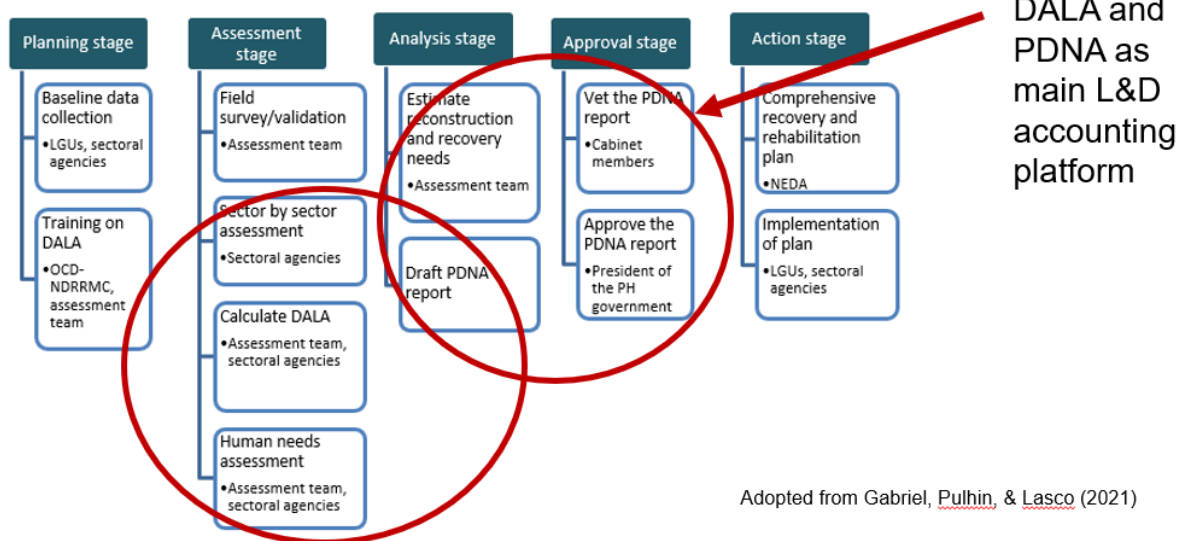
In connection with displacement concerns, OECD discovered that educational gaps from school closures lead to a three percent reduction in future incomes which in turn, lowers economic growth and annual GDP. In other cultures, child marriage becomes rampant.

### 3 Case Studies

The cases of the Typhoon Yolanda in 2013 and Marawi Seige in 2017 were looked at to highlight the nuances in cost and damage accounting as well as the institutional mechanisms in place to carry out funding and rehabilitation.

#### 3.1 Typhoon Yolanda

L&D Framework in the Philippines



## Typhoon Yolanda Timeline: Damage Assessment to PAP Funding

December 3, 2013	The House of Representatives approves on 3rd and final reading the P14.6-billion supplemental budget for the executive’s disaster fund.
December 4, 2013	Senate approves on 3rd and final reading its version of the P14.6-billion supplemental budget for disaster rehabilitation and reconstruction programs.
December 6, 2013	<p>Pres. Aquino issued Memorandum Order No. 62, s. 2013 – Providing for the Functions of the Presidential Assistant for Rehabilitation and Recovery (PARR).</p> <p>Functions</p> <ul style="list-style-type: none"> <li>a) Act as over-all manager and coordinator of rehabilitation, recovery, and reconstruction efforts of government departments, agencies, and instrumentalities in the affected areas, to the extent allowed by law;</li> <li>b) Coordinate with the National Disaster Risk Reduction and Management Council (NDRRMC) and its member agencies and consult with the concerned local government units (LGUs) in the formulation of plans and programs for the rehabilitation, recovery and development of the affected areas (“the plans and programs”), including an over-all strategic vision and integrated short-term, medium-term and long-term programs, which shall be submitted to the President for approval;</li> <li>c) Propose funding support for the implementation of the plans and programs;</li> <li>d) Exercise oversight over the relevant government agencies with respect to the implementation of the plans and programs;</li> <li>e) Call upon any department, bureau, office, agency, or instrumentality of the government, including Government-Owned or -Controlled Corporations (GOCCs), government financial institutions (GFIs), LGUs, and request non-government organizations (NGOs), the private sector, and other entities for assistance as the circumstances and exigencies may require in carrying out his mandate;</li> <li>f) Engage the assistance of consultants, experts, and professional advisors whenever necessary, subject to applicable government rules and regulations;</li> <li>g) Submit to the President status reports on the implementation of the plans and programs as often as the President may require; and</li> <li>h) Perform such other functions and activities as may be necessary to carry out the provisions of this Memorandum Order, or as the President may direct.</li> </ul>

December 10, 2013	Lacson was appointed by the President as the PARR
Dec 13, 2013	NEDA published the Reconstruction Assistance on Yolanda (RAY) as government's strategic plan to guide the recovery and rebuilding of the economy, lives, and livelihoods in the affected areas
December 26, 2013	The President signs the P14.6-billion supplemental budget for 2014 for disaster rehabilitation and reconstruction programs.
March 2014	The Asian Development Bank (ADB) signs a \$20-million grant to help 70 municipalities affected by Yolanda rebuild their villages and livelihoods.
July 2014	Aquino approves the local rehabilitation plans for Tacloban City and 5 other areas hit by Yolanda.
August 2014	Lacson submits the master rehabilitation plan to Aquino and pegs the cost of rehabilitation at P170 B
October 29,2014	Pres. Aquino approved the Comprehensive Rehabilitation and Recovery Plan for Yolanda  Infra – 35.15 B Social Services – 26.4 B Resettlement – 75.7 B Livelihood – 30.6 B  Total – 167.9B
December 2014	Lacson tendered his “irrevocable” resignation as the rehabilitation Czar to take effect in February 2015
April 2015	Pres. Aquino issued Memorandum No. 79, s. 2015 Providing for Institutional mechanism for monitoring of rehabilitation and recovery programs, projects, and activities for Yolanda-affected areas  NEDA Director-General, as the NDRRM Vice-Chairperson for Rehab and Recovery to assume the coordination, monitoring, and evaluation of all disaster-related programs, projects, and activities (PPAs) previously under the PARR and ensure the full implementation of this Order. All relevant implementing agencies shall continue the task of implementing all PPAs.
August 15, 2015	717,404 families have received Emergency Shelter Assistance (ESA) from the Department of Social Welfare and Development (DSWD) to repair damaged houses
September 2015	NEDA noted “encouraging progress” in the rehab and rebuilding efforts of Yolanda-stricken areas  11,247 houses have been constructed and 73,442 are under construction
October 31, 2015	DBM reported a release of 93.87 B pesos for Yolanda Rehab and Recovery  NDRRM Fund – 14.17 B Rehab and Reconstruction Fund – 10.11 B Regular Budget (inc. saving and realignments) – 8.02 B QRF – 161 M Savings – 23.84 B

	Automatic Appropriations – 2.26 B Unprogrammed Fund – 18.99 B FY 2014 & 2015 Supplemental Budget – 16.33 B
November 2015	NEDA revealed that “51% of all the we have set out to do have been completed and are ongoing. The others are still in various stages of procurement. By the end of 2016, we should be reaching most of what has been planned”. Balisacan added that providing the full range of resettlement housing and large infrastructure projects such as municipal buildings should be completed by 2017.
Dec 2015	The overall weighted physical accomplishment (OWPA) of completed and ongoing Yolanda programs projects and activities (PPAs) now stands at 63.2 percent – 30.3 percent completed and 33.1 percent ongoing (NEDA)  18.9B was allocated for Yolanda Recovery and Reconstruction under the FY 2016 GAA

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### 3.2 CASE SITE 1: Marawi Seige Rehabilitation

#### DRRM IN BARRM

DRRM is still in the transition phase in BARRM but one of the main programs of BARRM is the full implementation of DRRM managed by created agencies that only exist in BARRM. OCD in BARRM plays a big role as support in the four thematic areas. The implementation of the DRRM program is there and the focus is more on planning and capacitating the responders but the bigger picture of modernizing, the introduction of science-based equipment, and innovation is still at the outset. And OCD being just part of the council in BARRM is not so desirable.

#### SETUP OF THE COUNCIL IN BARRM

Out of the 17 regions, BARRM has a totally different setup. It is peculiar and full autonomy is being practiced. The chair is headed by the Interim Chief Minister of the BARRM and OCD only plays a member in the council. OCD is the only agency within BARRM that is not devolved. The purpose of OCD even if it is not a member of the inter-governmental relation between the national and the local government they still play the liaison role between BARRM and the national government.

#### PECULIARITY IN BARRM

If OCD does not have the supposed senior place within the structure of the BARRM government then it will pose a major challenge to them because even if BARRM practice full autonomy they are still part of the Philippine government. The policy issuances would always emanate from the national agency and the challenge is how to localize/translate and empower the same into BARRM policy. A good transition from the national to BARRM-level policy is for OCD to contextualize everything.



## REALIZATION OF OCD ON THE RECENT DISASTER EVENT

The province of Misamis Occidental is beyond compliance in Gawad Kalasag but the reality speaks otherwise in terms of how they managed the recent disaster event. It needs further strengthening. The granting of Gawad Kalasag recognition is purely based on submitted documents or documentation. There are too many regulations, policies, circulars in support of efforts on disaster response, prevention and mitigation, and recovery and rehabilitation but in the end the translation of these at the LGU level and if you put into consideration the political dynamics, is still problematic. Regulations and policies are in place but it still boils down to basic and bigger governance issues.

## CHALLENGES IN IMPLEMENTING DRRM IN BARRM

How to better fit the national issuance to the local (BARRM). BARRM can localize national issuances but it cannot supersede them. They would tend to localize what fits them and scrap out everything that they think does not fit them. BARRM has a local legislative which is the parliament wherein they can create laws but unfortunately, they are not that strong when we talk about DRRM.

## OVERLAPPING FUNCTIONS IN BARRM

There is a clear overlapping of response function/s in BARRM. They have four instrumentalities/agencies that conduct relief operations namely:

- MSSD which is the counterpart of DSWD
- BARRM-Ready which is the implementing arm of the DRRMO
- Members of the parliament
- A newly created agency under the Chief Minister

## BEST PRACTICES OF THE TASK FORCE BANGON MARAWI

The whole of government and whole of society approach

At the onset, the TFBM understood that rehabilitation is complex. There is a need to understand and weave through the social, political, historical, and cultural realities of the city to ensure that their rights and welfare are addressed properly.

As such and guided by the government's instruction to adopt a whole-of-government and whole-of-nation approach in tackling the rehabilitation, the TFBM sustained effective working relationships with key stakeholders including its 56 member- agencies and the LGU of Marawi City. For the LGU, in particular, the TFBM understood its critical role in ensuring the success of the rehabilitation program. Hence, the TFBM cultivated and maintained a solid collaboration with the Marawi LGU from the decision-making process to the actual implementation of projects.

The TFBM also cemented strong linkages with the city's traditional and religious leaders, consulting them on projects especially those that affect the Maranaw's way of life. They played a key role in the TFBM's success in the rehabilitation of several mosques and madrasah. Finally, civil society organizations were also welcomed as third-party monitors of the rehabilitation to help assess the latest updates and developments regarding the city's rebuilding process. Representatives from the federation of the CSOs regularly attend and provide their feedback on rehabilitation during the regional inter-agency meetings.

Strengthened coordination with implementing agencies in the planning and preparation of proposals, accessing of funds, and the implementation of PPA

As part of the TFBM's whole-of-government approach in the rehabilitation of Marawi, the TFBM tap into the opportunities of convergence to facilitate resolution (by assisting in the coordination and monitoring) on issues and concerns pertaining to the implementation of the projects of its 56 member agencies, especially those that can adversely impact their timeline and their readiness.

From debris management to the planning and preparation of proposals to access the available funds, the majority of which are accessed from the special fund for the Marawi Rehabilitation lodged under the National Disaster Risk Reduction and Management (NDRRM) Fund, to the actual implementation of projects, the TFBM ensured the constant coordination with, and among, the implementing agencies. In the TFBM Field Office, a regional inter-agency meeting is conducted monthly with the TFBM Chairperson where all implementation concerns are raised. More technical issues are addressed through the various technical working groups and committees created.

This has allowed the strategic implementation of projects, programs, and activities (PPAs) which had resulted in most of the infrastructures and facilities being built well despite external factors such as the COVID-19 pandemic and its mobility restrictions that severely challenged the movement of supplies, materials, and laborers in Marawi.

Holistic Approach to Development through the approval of Marawi's Comprehensive Land Use Plan and the Bangon Marawi Comprehensive Rehabilitation and Recovery Program (BMCRPP)

As part of the government's holistic approach to sustainable development, the TFBM through the HUDCC and HLURB initiated and funded the formulation of the Marawi City's Comprehensive Land Use Plan (CLUP) to guide and communicate to its people the city's planned utilization of its land resources according to their best use, with consideration of the city's future action and long-term vision for development.

In the immediate, this will rationalize the zoning ordinances of the city. Before the siege, the city does not have an existent CLUP.

Another key plan that was approved to ensure a coherent and forward-looking development strategy is the BMCRPP, which was formulated through the National Economic Development Authority. This document identified the investment plan and the key priority PPAs to be implemented inside and outside of Marawi's most affected areas, to concretize the plan's objectives. The BMCRPP has six main sectors: local governance and peacebuilding, housing

and settlement, livelihood and business deployment, physical infrastructure, social services, and land resource management.

As part of its holistic approach to development and recognizing the central role of mosques in the lives of the Maranaws, the TFBM also focused on the rehabilitation of several Islamic houses of worship, including the iconic Grand Mosque, through private funds. Repairing mosques damaged during the 2017 siege is part of government efforts to fast-tracking the social healing of Maranaws affected by the armed conflict.

#### Partnership with Development Partners

Looking back at the gains the TFBM has made over the years, they acknowledge and recognize the roles the development sector has made in complementing and supplementing (whether through humanitarian assistance, technical assistance, grants, and other official development assistance) the government's efforts in rehabilitating Marawi City.

As such, the TFBM established and continues to maintain, good relations with international organizations such as UN-Habitat, IOM, World Bank, JICA, KOICA, China Aid, USAID, UNDP, UNHCR, ICRC, among others, which had yielded positive results regarding rebuilding Marawi from the ruins brought about by the 2017 siege, more importantly in the funding aspect.

#### Community-based Information, Education, and Communication (IEC) campaigns

Understanding the crucial role of communications in ensuring the success of the program – from disseminating and getting the feedback of the intended beneficiaries of programs to raising public awareness on important issues affecting the Maranaws, the TFBM created an Information Management and Strategic Communications Group led by the Philippine Information Agency to undertake these functions.

Two of the notable initiatives of the PIA are its organization and conduct of IEC campaigns, such as the mashwara and the serbisyo caravan wherein the PIA will go to the communities where the IDPs are residing, such as the various transitory and permanent shelter sites, to conduct public awareness campaigns on the rehabilitation and deliver essential public services, such as health and medical services, together with the implementing agencies.

Through these activities, Marawi IDPs, especially those in need of government assistance, can get more information on the rehabilitation program, as well as the processes and services being offered to them. This is also intended to stem the unfounded news and rumors circulating that adversely impact rehabilitation.

#### Adopting IT-enabled database management of IDPs and property

The TFBM adopted information technology to ensure that accurate and sensitive personal information of the IDPs and their properties (especially their house, land, and properties that were damaged by the siege) are properly stored, managed, and retrieved when needed, thus, eliminating multiple databases. Among the key databases created for, and by, the TFBM is the Kathanor and Kathagombalay. Kathanor is a biometric profiling that collects the personal of the individual IDPs to track their number, location, and status. It is also used as the main reference by the implementing agencies in determining the eligible beneficiaries of their

programs. This was a system that was created for the TFBM through the support of the World Bank.

Another database is the Social Cartography, which was accomplished by the Department of Environment and Natural Resources, which is a GIS-based land/property mapping information system that also established the property boundaries in MAA.

Both databases are crucial systems being utilized by the TFBM and the LGU Marawi in the implementation of the Kathagombalay, which is the processing of applications for building permits for structures to be constructed, repaired, and rehabilitated in MAA.

They will also be used extensively once the Marawi Compensation Board is established for the implementation of the Marawi Siege Victims Compensation Act.

#### Institutionalization of alternative land disputes resolution mechanism

In relation to the Social Cartography and establishing ownership of subject housing, land, and properties, the TFBM created the Land Dispute Resolution Committee (LDRC), which is currently headed by the Minister of Human Settlements Development of the Bangsamoro Autonomous Region in Muslim Mindanao, with members from the LGU and other government agencies that handle land resource management and observers from the traditional, religious leaders, and international bodies (UNHCR, World Bank).

The LDRC was established to provide alternative mechanisms for addressing and resolving conflicting land claims among IDPs, particularly inside the MAA, while avoiding the legal costs that costly court proceedings entail.

#### Passage into Law of RA11696

While not exactly a practice, per se, they wanted to highlight this achievement that emerged out of the strong collaboration of all concerned stakeholders, which the TFBM is happy to be part of, from the affected IDPs, the CSOs, development partners, the Congress, and the Office of the President. Signed by former President Rodrigo Roa Duterte in April 2022, Republic Act 11696, or the Marawi Siege Victims Compensation Act of 2022 mandates the creation of the Marawi Compensation Board as an independent and quasi-judicial body primarily to receive, evaluate, process, and investigate applications for claims under the law, as well as, to award compensation as warranted.

#### LESSONS LEARNED BY THE TASK FORCE BANGON MARAWI

The implementation of the massive rehabilitation project has not been a walk in the park. We have encountered numerous challenges such as the COVID-19 pandemic, bad weather conditions that hampered construction works, as well as the previous National Elections, most of which are out of the TFBM's control. As with any other program, the Task Force encountered stumbling blocks, but not without valuable lessons. Among them were related:

## Land Issues

There is a lack of a comprehensive land management database for Marawi City. This is exacerbated by land claims that lack titles as proof of ownership, errors in the technical descriptions of some existing titles and overlapping land claims.

Social Cartography has started the harmonization of land records which will contribute to the building of a comprehensive record of the city. For overlaps in or disputes of, claims, the LDRC that was created by TFBM can help resolve the issues. However, corrections in the technical descriptions of the titles would require a court proceeding.

These land issues are worth noting because this has been one of the reasons for the delay of major projects. Mostly because the lack of titles prevented the implementing agencies from perfecting the Deed of Sale for the lands they purchased to construct their projects; most of the proof of ownership the owners have is a Tax Declaration. While the owners process the documents, since there are not a lot of options available, the implementing agencies will have to wait. (e.g., NHA and SHFC land acquisitions) There are also cases of conflicting land claims that lead to the suspension of projects (e.g., BFP's Fire Station Project).

## Procurement

Procurement was also seen as a delaying factor in some of the government's projects. This is mostly attributed to a lack of participating local bidders/suppliers that are qualified (ex. LWUA's water and sewerage system projects that have declared biddings multiple times due to lack of qualified bidders; or there are bidders but with incomplete submissions). The procurement is also hampered by the imposition of restrictions on movements due to the COVID-19 pandemic.

## Compliance with document requirements to access funds

Finally, there is also a noted knowledge gap among the implementing agencies on how to properly access funds. For MRRRP-funded projects, the Office of Civil Defense has been on the frontline capacitating the agencies on the proper documents and processes for accessing the fund. However, there is still a notable gap mostly attributed to sudden or frequent changes in focal persons of the agencies handling the preparation of the documents. This usually causes their protracted compliance with the requirements.

Because the compliance is late, there are several instances when the funds they accessed are released at a time when they are no longer capable of utilizing the funds, and, hence, reverted to the Treasury.

As such, it is noted that a continuous and regular capacity-building of implementing agencies and local government units on the documentary requirements in accessing the NDRRM Fund, especially with the new guidelines issued through NDRRMC Memorandum Circular No. 11, series of 2021, and relating the process to the budget cycle to improve their effective planning for the development, procurement, and implementation of their projects; and, thus, improve budget utilization.

## SELECTION OF BENEFICIARIES IN PERMANENT SHELTER

The priority for selecting beneficiaries for permanent shelters are those IDPs or families living in reclamation areas and no build zone areas (easement, shore lake).

## HINDRANCE TO TFBM AS OF THE PRESENT TIME

The Task Force Bangon Marawi as of the present time still do not have the legal basis or authority to operate but even without a legal basis they continue to perform their mandate and the existence of TFBM is still being recognized by partner agencies. This is something that is needing legal policy support. It may be a generic provision whenever necessary we can have a special unit designated as in charge of rehabilitation and recovery.

## ISSUES ON PRIORITY PROGRAMS (EVERY YEAR) FOR MARAWI REHABILITATION

There are priorities every year to be funded in terms of Marawi rehabilitation but it is still changing every year because of changes in priorities even with the existence of a master plan. This is something that we have to address as a continuously moving list of priorities may not be that effective as a vehicle for sustained rehabilitation and recovery effort.

## INSTITUTIONAL AUGMENTATION FOR DRRM

We are essentially not progressing, institution-wise because our bureaucratic institutions are not designed to mature in time. We do not have a designated institution as the leader for DRRM in the country. Leadership and staff complement from the national down to the local level keep on changing so they do not mature over time. This is the reason why we start every time from zero. We need to mature DRRM-wise, and institution-wise, and this can only happen with a designated proper structure within the bureaucracy and this is the central authority or probably the new department of disaster resilience.

## FINAL THOUGHTS

The government's response to man-made calamities should not be limited to five years only including the establishment of an institution that will oversee the entire rehabilitation process.

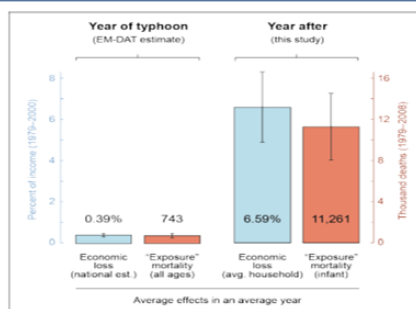
The Rehabilitation and Recovery Plan (RRP) for marawi was crafted without the benefit of a completed PDNA. This is a lapse in policy and process which requires due attention.

## 4 Key Insights and Recommendations

Appropriate accounting for short and long-run socio-economic impacts of disasters must be instituted. Only direct impacts on destruction of infrastructure, property and casualties are often monitored and reported. Among those that need to be considered are disruptions on productivity and productivity flows, intergenerational and other long-term damages.

### Accounting for Short- and long-run socioeconomic impacts of disasters

SHORT RUN	LONG RUN
<ul style="list-style-type: none"> <li>Direct impacts on death, <b>casualties, and destruction of property</b></li> <li>Disruption of <b>productivity and product flows</b></li> <li>Decrease in short-term <b>economic activity including residual lags</b></li> </ul>	<ul style="list-style-type: none"> <li>Evidence vary across beneficial, adverse, or no effect. PH govt do not routinely collect panel <b>data pre- and post-disaster</b>.</li> <li><b>Inter-generational Damages/ Impacts</b>. Severity of impact depends on nature of disaster, geographical area, economic structure, and population characteristics.</li> <li><b>Creative / innovative post-disaster improvements and growth</b>.</li> </ul>



Source: Iha, Martinez & Wang 2018; Brings et al. 2022

- **Long-term human and economic losses much larger than immediate losses.** Study posits that over a 25-year period, long-term losses exceeded by a factor of 15.
- World Bank and UN (2010) found that **prevention spending is more effective than post-disaster spending**. Prevented disasters can result to 26 million fewer people in extreme poverty each year (Hallegatte et al. 2017)

### Need for apt disaster loss and damage accounting to account for the invisible toll of disasters

#### The Invisible Toll of Disasters (UNDRR)

- National and Subnational levels
- Sectoral Accounting
- Interest groups

	<b>ECONOMIC SHOCKWAVES</b> Poorer countries sustain higher relative loss Developing countries' insurance coverage is low to zero		<b>BURDEN ON HEALTH AND RESILIENCE</b> Hazards can activate disease spreading vectors. Rising temperatures attract malaria, floods trigger leptospirosis, drought incubate hantavirus
	<b>INVISIBLE LOSSES FROM SLOW ONSET AND SMALL SCALE EVENTS</b> Steady stream of significant losses at the individual level or relative livelihoods		<b>LEGACY OF ANXIETY AND DESPAIR</b> Discussion on mental health toll. Disadvantaged groups are more likely to suffer lingering psychological damage
	<b>BROKEN SUPPLY CHAINS</b> Implications for food security; sharp fluctuations to electronics, energy		<b>DISRUPTED YOUNG LIVES</b> Internal displacement, educational gaps from school closures, heightened instances of child marriage as coping mechanisms
	<b>SEVERED CONNECTIONS</b> Lost connectivity disrupts economic activity; introduces lags in relief and response without communication		<b>DISRUPTED YOUNG LIVES</b> Internal displacement, educational gaps from school closures, heightened instances of child marriage as coping mechanisms
	<b>LOSSES IN PRODUCTIVITY</b> Extreme temperatures, safety concerns for manual labor		<b>URGENT NEED TO TAKE STOCK</b> We cannot manage the risks we do not see. We need to account for the true costs of disasters

According to UNDRR (2023), Among the invisible loss and damages from disasters include economic shockwaves, losses from slow onset events, broken supply chains, severed connectivity, decreases in productivity, and health burdens, both physical and mental.

Loss and damage accounting issues in the Philippines are rooted across multiple concerns, including institutional platform and capacity, method application, process inefficiency, monitoring and evaluation lapses, and poor and inadequate responses.

### L&D Issues and Persisting Factors in the Philippines

	<b>Issues</b>	<b>Persisting factors</b>	<b>Results</b>
<b>Institutions</b>	Lack of awareness of LGUs on tool being used	Frequent turnovers, poor compliance, absence of plantilla	Tool not efficiently used
	Lack of a standardized process	Harmonization challenges due to local dynamics and priorities	Data mismatch
<b>Methods</b>	Lack of baseline data and projected damages and losses	Outdated data; lack of digital back up database system	Over or underestimation of post-disaster data
	Capability of national government to distribute resources	Absorptive capacity of agencies, procurement process	Improper distribution of resources
<b>Capacity</b>	Poor governance and institutional structures	Individualistic implementation of programs, adhoc saturation, lack of financial resources	Misguided actions, wrong prioritization
	<b>Process</b>	Slow assessment system	Lack of baseline data, absorptive capacity of LGUs
<b>Response</b>		Assessors are victims themselves	Absence of welfare provision for DRRM officers and staff, no insurance and hazard pay
	<b>M&amp;E</b>	Data loss and absence of integrated data from various sectors	Lack of baseline and digital back up data; paper-based documentation
		Tool has temporal limitations; focused on short term and direct impacts	Short term, direct impacts are the strength of the tool. Present non-economic loss but not comprehensive

Adopted from Gabriel, Pulhin, & Lasco (2021); KIs and FGDs

To address both national and regional concerns on loss and damage accounting, the Philippines must enhance methodological tool acquisition, capacity building initiatives, and institutional augmentations. Appropriate levels of investment must be provided to human capital development in both national government agencies and local governments. Effective monitoring and evaluation platforms must be in place at both national and subnational levels, covering all relevant sectors.



## Global and National Issues and Ways Forward

	Global Issues	Philippine Issues	Recommendations
Methods	Discrepancies in Pre vs. post disaster assessments	Accuracy and extent of assessment	Enhance tool acquisition, capacity building and institutional augmentation
	Insufficient Data availability	Lack of baseline data and projected damages and losses Data loss and absence of integrated data from various sectors	Augment monitoring and evaluation and reporting system
M&E	Lack/ Insufficient Available expertise	Lack of awareness of LGUs on tool being used;  Insufficient technical capacity among stakeholders at both national and subnational levels	Invest on human capital/ training and development
Capacity	Extended timeframe for delivery of reliable information	Slow assessment system	Facilitate bureaucratic process for CC A/M and DRRM
Process	Non-quantification of "non-economic losses," including human lives, the loss of species, and even cultures	Non valuation of human lives and ecological losses including mortalities and injuries, and biodiversity	Expand impact assessment to quantify and address intangibles (including lives and social impacts)
Assessment	Absence of psychological impacts	Non-Accounting of social impacts	Expand impact assessment to quantify and address intangibles
Response	Model output discrepancies	Tool has temporal limitations; focused on short term and direct impacts Lack of a standardized process	Enhance tool acquisition, capacity building and institutional augmentation
Institutions	CC-DRR action Limitations	Capability of national government to distribute resources Poor governance and institutional structures Assessors are victims themselves Insufficient Financing Instruments Insufficient resource allocation for rehabilitation and recovery	Enhance bureaucratic structure and process from CC/Disaster impact prevention, mitigation, response and recovery  Enhance regional/global cooperation platforms for CC/DRR cooperation and possible Damage and loss compensation  Institutionalize Loss and damage accounting in relevant Executive Departments and LGUs

## Challenges on CC-DRR Loss and Damage Accounting

<p><b>NATIONAL AND SUBNATIONAL BUREUCRACY</b></p> <p><i>Need to strengthen national and subnational institutional platforms. Enhance process for CC/Disaster impact prevention, mitigation, response and recovery</i></p>	<p><b>METHOD AND TOOL ACQUISITION FOR L&amp;D ACCOUNTING</b></p> <p><i>Suspect accuracy and extent of assessment</i></p> <p><i>Enhance method and tool acquisition, and stakeholder retraining</i></p>	<p><b>HUMAN CAPITAL INVESTMENT AND RESOURCE MOBILIZATION</b></p> <p><i>Availability resources for DRRM and inefficient procurement process</i></p> <p><i>capacity building and institutional augmentation</i></p>
<p><b>FISCAL MANAGEMENT AND L&amp;D FINANCING MECHANISM</b></p> <p><i>Suboptimal funding facility and fund availment and use particularly among local governments and disaster victims</i></p>	<p><b>L&amp;D M&amp;E; KNOWLEDGE MANAGEMENT</b></p> <p><i>Weak knowledge management; Lack of comprehensive and baseline datasets to guide interventions</i></p> <p><i>Augment monitoring and evaluation and reporting system</i></p>	<p><b>GLOBAL COOPERATION AND SUPPORT</b></p> <p><i>Tap regional/global cooperation platforms for CC/DRR and possible Damage and loss compensation</i></p> <p><i>Capitalize on new L&amp;D Fund</i></p>

Summing up, the application of loss and damage accounting in the Philippines. Is both narrow and inconsistent. Due attention must be given to strengthening structural platforms and processes at both national and subnational levels, method and tool acquisition have to be enhanced to improve the extent and accuracy of assessments, capacity building and resource

mobilization have to be improved, fiscal management and financing mechanisms have to be made more effective and accessible and appropriate knowledge management including monitoring and evaluation have to be installed. Local initiative to enhance loss and damage accounting can further be enhanced by capitalizing on existing regional and global cooperation platforms.

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