



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF THE INTERIOR AND LOCAL GOVERNMENT
DILG-NAPOLCOM Center
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July 21, 2015

MEMORANDUM CIRCULAR
NO. 2015-77

FOR : ALL PROVINCIAL GOVERNORS, CITY AND MUNICIPAL
MAYORS, CITY/MUNICIPAL PLANNING AND DEVELOPMENT
COORDINATORS, DILG REGIONAL, PROVINCIAL AND CITY
DIRECTORS, CITY/MUNICIPAL LOCAL GOVERNMENT
OPERATIONS OFFICERS AND OTHERS CONCERNED

SUBJECT : GUIDELINES ON MAINSTREAMING CLIMATE CHANGE
ADAPTATION AND DISASTER RISK REDUCTION IN LOCAL
DEVELOPMENT PLANNING

Extreme weather events due to climate change and occurrence of disasters largely affect the state and pace of local development. Ranked within the top five (5) countries most exposed to multi-hazards and most vulnerable to effects of climate change, the Philippines can mitigate such adverse effects through careful planning. Past occurrences of disasters such as flooding, landslides, flashfloods and even earthquakes underscore the need for local government units, especially those vulnerable and at risk, to consider disaster and climate change concerns in their local development plans.

Anchored on the Rationalized Planning System, the framework and the specific set of actions to mainstream disaster risk reduction and climate change adaptation are set forth under this Memorandum Circular.

1.0 Legal Bases

- 1.1. Section 16, LGC 1991 mandates every local government unit to "... exercise the powers expressly granted, those necessarily implied there from, as well as powers necessary, appropriate, or incidental for its efficient and effective governance, and those which are essential to the promotion of the general welfare. Within their respective territorial jurisdictions, local government units shall ensure and support, among other things, the preservation and enrichment of culture, promote health and safety, enhance the right of the people to a balanced ecology, encourage and support the development of appropriate and self-reliant scientific and technological capabilities, improve public morals, enhance economic prosperity and social justice, promote full employment among their residents, maintain peace and order, and preserve the comfort and convenience of their inhabitants."

- 1.2 Section 5(e) of the IRR of RA 6975. The Department of the Interior and Local Government (DILG), as mandated by laws, shall vigorously pursue its mandate to establish and formulate plans, policies and programs to strengthen the technical, fiscal and administrative capabilities of local governments.
- 1.3 Paragraph K, Article 182, Rule 23 of the IRR of RA 7160, "DILG, in coordination with NFDA and the LGU Leagues, shall formulate the operational guidelines for local development planning process. DILG shall continue its advocacy towards a rationalized planning system for adoption by the local governments.
- 1.4 Section 106, LGC 1991. *"Each LGU shall have a comprehensive multi-sectoral development plan to be initiated by its development council and approved by the sanggunian..."*
- 1.5 Section 109, LGC 1991. *"The provincial, city and municipal development councils shall... formulate long-term, medium-term and annual socioeconomic development plans and policies... (and) medium-term and annual public investment programs"*
- 1.6 Section 2(g) of Republic Act No. 10121, or the Philippine Disaster Risk Reduction and Management Act of 2010, emphasized the need to mainstream disaster risk reduction and climate change in development processes such as policy formulation, socio-economic development planning, budgeting, and governance, particularly in the areas of environment, water, energy, health, education, poverty reduction, land-use and urban planning, and public infrastructure and housing, among others.
- 1.7 Republic Act No. 9729, or the Climate Change Act of 2009, as amended, also stipulated that it is the policy of the State to systematically integrate the concept of climate change in various phases of policy formulation, development plans, poverty reduction strategies and other development tools and techniques by all agencies and instrumentalities of the government.

2.0 Definition of Terms

(a) Mainstreaming

- the integration of policies and measures that address climate change into development planning and sectoral decision-making (RA 9729)
- disaster risk analysis and impacts are integrated and taken into consideration in the development of policies and plans by the different agencies, organizations and sectors (RA 10121)

(b) **Risk Assessment** – a methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihood and the environment on which they depend. (RA 10121)

(c) **Vulnerability Assessment** - the process of identifying, quantifying, and prioritizing (or ranking) the vulnerabilities in a system. It means assessing the threats from potential hazards to the population and to existing infrastructure. (NFSCC, 2010)

(d) **Ecological Profile** – the more comprehensive replacement of the usual socioeconomic profile. The EP covers the physical, biological, socioeconomic, cultural and built environments. It is a merger of the socioeconomic and biophysical profiles of the study area and treats these subjects on equal footing. It should be comprehensive enough to serve as basis for all thematic plans.

- (e) **Integrated Watershed Ecosystems Management or Ridge-to-Reef Framework** – a holistic approach in planning that focuses not only on the terrestrial but also the coastal ecosystem

3.0 Mainstreaming DRR and CCA in the Components of Local Development Planning

Mainstreaming DRR and CCA is carried out by considering climate and disaster risks and issues into (i) the existing LGU database or the ecological profile, (ii) the planning structure and planning process, (iii) development plans and thematic/sectoral plans, and (iv) investment program, and by providing the necessary authority levers such as policies, budget and regulatory measures, among others.

Local government units most vulnerable to disasters and impacts of climate change are highly encouraged to adopt the following courses of actions to mainstream DRR and CCA in their local development plans.

3.1 Suggested Planning Team Composition

Pursuant to Sections 109 (1) and (2) and 112 of the LGC 1991, LGUs should organize the planning team as a functional committee that shall assist the local development council in the performance of its functions which include the formulation of development plans and policies. As a functional committee, it should ensure that climate change and disaster risks are considered in the formulation of the local development plans.

To ensure consistency and sustainability and that inclusive and participatory approaches are adopted, LGUs may organize a planning team with composition enumerated hereunder. They are likewise highly encouraged to tap the national government agencies and academe as technical and/or scientific advisors and sources of information. LGUs may include other representatives who can provide substantial inputs on DRR and CCA.

3.1.1. *Chairperson and Vice-Chairperson*

Chair : Mayor
Vice-Chair : Vice Mayor

3.1.2. Planning Core Group. The Planning Core Group shall be the over-all committee responsible for coordinating all technical and administrative activities in the preparation of the CLUP, CDP and derivative plans. It shall coordinate planning activities; and, draft and consolidate the contents of these plans. The Local Planning and Development Coordinator shall lead this core team.

- (a) Local Planning and Development Coordinator (C/MPDC) – Lead
- (b) Local Disaster Risk Reduction and Management Officer (LDRRMO)
- (c) Designated CCA Focal Person
- (d) City/Municipal Environment and Natural Resources Officer (FNRO)
- (e) Architect/Environmental or Urban Planner
- (f) City/Municipal Local Government Operations Officer
- (g) President, Liga ng mga Barangay
- (h) Accredited NGO/PO/CSO (involved in CCA-DRR)
- (i) PPDO Representative

3.1.3. Technical Working Groups (TWGs). The TWGs shall assist the Planning Core Group in the (i) conduct of sectoral/cross-sectoral analysis, validation and report generation/preparation; (ii) conduct of surveys, consultations/meetings, and

workshops; and, (iii) integration/finalization of studies, research findings, and consultation or survey outputs. The following are the suggested TWGs and corresponding composition.

<p>(a) Social</p> <ul style="list-style-type: none"> ▪ SP/SB Committee Chair, Social Sector ▪ Social Welfare and Development Officer ▪ City/Municipal Health Officer ▪ President, Liga ng mga Barangay ▪ Senior Citizen Representative ▪ GAD Focal Person ▪ DepEd/District Supervisor ▪ Private Educational Institutions 	<p>(b) Economic</p> <ul style="list-style-type: none"> ▪ City/Municipal Agriculture Officer ▪ City/Municipal Agrarian Officer ▪ City/Municipal Tourism Officer ▪ Accredited concerned NGO/PO/CSO ▪ Public Employment Service Office
<p>(c) Infrastructure</p> <ul style="list-style-type: none"> ▪ Local Water Utilities Representative ▪ Electrical Cooperative Representative ▪ Accredited concerned NGO/PO/CSO ▪ Telecom Company Representative ▪ City/Municipal Engineer ▪ PNP ▪ Traffic Management Office ▪ Irrigators Association 	<p>(d) Physical</p> <ul style="list-style-type: none"> ▪ Academe ▪ City/Municipal Assessor ▪ Real Estate Developer
<p>(e) Institutional</p> <ul style="list-style-type: none"> ▪ C/MPDC ▪ C/MLGOO ▪ LDRRMO ▪ Designated CCA Focal Person ▪ ENRO ▪ SP/SB Committee on Land Use ▪ SP/SB Committee on Appropriations ▪ Budget Officer ▪ Treasurer 	<p>(f) Forest and Ancestral Domain (if applicable)</p> <ul style="list-style-type: none"> ▪ Indigenous Peoples/Indigenous Communities ▪ City/Municipal Assessor ▪ Community-Based Forest Management Focal Person/Project Officer ▪ Accredited concerned PO/NGO/CSO ▪ City/Municipal Tourism Officer ▪ ENRO or designated Biodiversity Focal Person
<p>(g) Heritage (if applicable)</p> <ul style="list-style-type: none"> ▪ Cultural Heritage Conservation Officer or City/Municipal Tourism Officer 	<p>(h) Green Growth/Urban Design (if applicable)</p> <ul style="list-style-type: none"> ▪ City/Municipal Architects (if applicable) ▪ City/Municipal Engineer ▪ Environmental Planner/Urban Planner
<p>(i) Coastal and Marine (if applicable)</p> <ul style="list-style-type: none"> ▪ Fisherfolks Organization Representative ▪ Accredited concerned PO/NGO/CSO ▪ City/Municipal Agriculture Officer 	

3.1.4. Higher Level Advisors. NGA units and offices that do not have offices or branches at the local level, or where experts are only available at the national/regional/district level such as that from the following agencies/institutions, may be included as part of the core group or TWGs.

Higher Level Advisors	
<ul style="list-style-type: none"> ▪ Academe ▪ Collective Strengthening on Community Awareness on Natural Disasters (CSCAND) Agencies (PHIVOLCS, PAGASA, MGB, NAMRIA) ▪ DII ▪ TESDA ▪ DOST ▪ DOTC ▪ NIA 	<ul style="list-style-type: none"> ▪ DPWH ▪ DENR ▪ DOE ▪ DA ▪ NCIP ▪ Coastguard ▪ Philippine Port Authority or Marina ▪ Public-Private Partnership Center ▪ CHED representative ▪ Land Transportation Office

3.2 Information Requirements

It is important for the LGU to have the basic information requirements before it can proceed to planning. The following are the basic information requirements that LGUs should prepare or make readily available to ensure that disaster and climate risks are considered in the situational analysis.

3.2.1. Ecological Profile

3.2.1.1. With the end in view of incorporating DRR and CCA dimensions, the Ecological Profile should contain information along these sectors: Population and Demographic Profile and Social, Economic, Infrastructure, Environment and Institutional Sectors. LGUs are therefore encouraged to update their ecological profile.

3.2.1.2. In view of the need to adopt the ridge-to-reef or integrated watershed ecosystems management framework, LGUs should include, where applicable, data on forest, coastal and marine resources, ancestral domain, heritage, green growth and urban design. The specific list of data requirements for these sectors is enumerated in Volume 2 of the enhanced CLUP Guidebook (Sectoral Planning and Tools for Situational Analysis).

3.2.1.3. LGUs are advised to utilize information from National Government Agencies, Regional/Provincial and Local levels, results of national or local surveys or studies and if already available, disaster risk and analysis results, among others. Results of Community-Based Monitoring System, Local Governance Performance Management System, Disaster Preparedness Audit, Infrastructure Audit, various assessments and tools and other relevant programs of the Department and other NGAs are also useful in the enhancement of the Ecological Profile and analysis of risks and vulnerabilities.

3.2.2. CCA-DRR-Specific Requirements and References

3.2.2.1. Maps (Base/Land Use Maps, Hazard/Risk Maps)

Mainstreaming DRR and CCA in the planning process will not be effectively carried out in the absence of base maps, land use maps, hazard maps and risk maps. The base and land use maps illustrate locations of built and unbuilt environments. Overlaid with hazard maps, these will indicate which areas are at risk. These maps are very important in defining development patterns or direction, determining vulnerabilities and adaptive capacities, identification and design of appropriate programs, projects and activities, and as basis for declaration of safe, no-dwelling and no-build zones.

LGUs are therefore advised to do the following:

- Secure base maps from NAMRIA
- Make available or prepare their land use maps
- Secure hazard maps for all hazards in the locality from:
 - 1) DOST-PAGASA for hydrometeorological hazards
 - 2) DOST-NOAH and DREAM (Phil LIDAR) for high-resolution hydromet hazard maps in both print, online and KMZ formats
 - 3) DOST-PHIVOLCS for geological hazards
 - 4) DENR-MGB for flood, rain-induced landslide and geologic hazard maps
 - 5) NAMRIA for multi-hazard maps under READY project and multi-hazard maps (i.e., flood, landslide and storm surge) of Yolanda-affected LGUs

- LGUs should use hazard maps preferably 1:10,000 or 1:5,000, if available. If such maps are not available from concerned agencies, given the urgency for utilization of maps for planning purposes, LGUs may tap national or local experts who can assist them in preparing their multi-hazard maps. However, LGUs should coordinate with the national government agency concerned to ensure consistency with map standardization and for purposes of reconciliation with officially issued maps.
- If the only available hazard maps are of smaller scale (e.g. 1:50,000, 1:80,000, etc), LGUs should validate city/municipal-level hazard maps through community-based hazard assessment. LGUs may refer to CLUP Guidebook Volume II for the steps or procedure in conducting community-based hazard assessment.
- All hazard maps, regardless of scale, should be subjected to community validation.

Refer to Annex A for the list and sources of hazard maps.

3.2.2.2 Climate Change Projection

Climate change impacts are mostly felt in the areas of agriculture, health, water sufficiency, food security, among others. Climate projections are important in the conduct of risk and vulnerability assessment. LGUs should secure these projections from DOST-PAGASA. These projections include seasonal temperature change, seasonal rainfall change, extreme temperature events, extreme rainfall events, changes in annual mean temperature, changes in annual mean rainfall, and sea level rise.

3.2.2.3 Historical Records of Past Disasters

Historical records of previous disaster events are useful in validating information indicated in the hazard maps. LGUs are therefore advised to prepare a record or list of disasters that occurred in the past as well as subsequent occurrence of disasters which can be utilized for succeeding planning cycles.

3.3 Consistency with HLURB Guidelines on CLUP Preparation

- 3.3.1. Mainstreaming DRR and CCA in local development plans require the conduct of risk and vulnerability assessment. If there is risk/vulnerability assessment already undertaken, LGUs may use the results in the preparation/updating of their plans.
- 3.3.2. While there are other risk and vulnerability assessment tools, it is recommended that LGUs conduct Climate and Disaster Risk Assessment (CDRA) as provided in the Supplemental Guidelines on Mainstreaming Climate and Disaster Risks in Comprehensive Land Use Plan (CLUP) developed by the Housing and Land Use Regulatory Board (HLURB).
 - 3.3.2.1. Ideally, LGUs should first prepare or update their CLUP using HLURB's CLUP Guidebooks Volume I (Planning Process), Volume II (Sectoral Planning and Tools for Analysis), Volume III (The Model Zoning Ordinance) and the Supplemental Guidelines on Mainstreaming Climate and Disaster Risks in CLUP prior to the preparation of the CDP.
 - 3.3.2.2. For LGUs that have not yet undertaken risk and vulnerability assessment, they are well advised to follow HLURB's CDRA to avoid duplication of efforts and to ensure consistency with HLURB's Guidelines on CLUP

preparation. The basic data requirements as mentioned under 3.2.2 are vital to the conduct of climate and disaster risk assessment.

- 3.3.4. While the CLUP defines the land use implications of disaster risks and climate change and the corresponding land use management actions to address them, the CDP should focus on dealing with the socioeconomic impacts. To complement the CDRA, LGUs are advised to conduct institutional capacity assessment specifically for CCA and DRR in order to rationalize CCA-DRR institutional development programs of LGUs.

4.0 Preparation of Comprehensive Development Plan (CDP) and Derivative Plans

LGUs are advised to adopt the following courses of actions in the preparation of their climate and disaster risk-sensitive CDPs and derivative plans, such as the Local Disaster Risk Reduction and Management Plan (LDRRMP) and Local Climate Change Action Plan (LCCAP), given various scenarios. Note that the LCCAP should not be treated as a stand-alone plan but as a plan that can either be integrated or derived from the CDP.

4.1 Scenario 1: With enhanced CLUP (DRR-CCA mainstreamed, using HLURB's guidelines)

- Build on from the situational analysis done during the CLUP preparation.
- Prepare the CDP.
- Derive the LDRRMP and LCCAP.
- Include DRR and CCA programs/projects based on the results of the CDRA in the Local Development Investment Program (LDIP) and in the Annual Investment Program (AIP).

4.2 Scenario 2: With CLUP (DRR-CCA not yet mainstreamed) or with Outdated CLUP

- Revisit Land Use Plan
- Update CLUP using HLURB's enhanced CLUP Guidebooks together with the Supplemental Guidelines.
- If LGU has conducted other forms of risk and vulnerability assessment, utilize the results in the preparation/updating of the CDP. Otherwise, conduct CDRA following HLURB's Supplemental Guidelines.
- Prepare CDP (may be done parallel with CLUP updating).
- Derive the LDRRMP and LCCAP.
- Include DRR and CCA programs/projects based on the results of the CDRA in the Local Development Investment Program (LDIP) and in the Annual Investment Program (AIP).

4.3 Scenario 3: Without CLUP

- Prepare CLUP using enhanced CLUP Guidebooks together with the Supplemental Guidelines.
- If LGU has conducted other forms of risk and vulnerability assessment, utilize the results in the preparation/updating of the CDP.
- Prepare CDP (may be done parallel with CLUP preparation).
- Derive the LDRRMP and LCCAP.
- Include DRR and CCA programs/projects based on the results of the CDRA in the Local Development Investment Program (LDIP) and in the Annual Investment Program (AIP).

5.0 Vertical Alignment and the Need for Adopting Integrated Watershed Ecosystems Management or Ridge-to-Reef Framework

The needs of the times and in the context of disasters and climate change, LGUs should not confine planning to political boundaries, but instead adopt the integrated ecosystem-based or ridge-to-reef approach. This is because disasters and the impacts of climate change go beyond political boundaries.

- 5.1. The adoption of the Integrated Watershed Ecosystems Management is consistent with Section 459 of the LGC, wherein the province is said to serve as a dynamic mechanism for developmental processes and effective governance of local government units within its territorial jurisdiction. In accordance with the role of the Provincial Governor per Section 465 b(1)(xiii) of the LGC, the provinces, through the provincial development councils, should ensure that these principles are adopted by the respective component cities and municipalities' local development councils in relation to their functions [Section 109, (1) to (6)].
- 5.2. Cities and municipalities should therefore align their development plans with the vision and strategic directions set forth in their respective province's Provincial Physical and Development Framework Plan (PPDFP). The hazards and risks identified by the Province should also be considered by its component cities and municipalities, especially for those that share risks. Those along the eighteen (18) Major River Basins should also consider the River Basin Master Plan in the formulation of their local development plans.
- 5.3. Cities and municipalities which share risks are encouraged to coordinate or collaborate with one another, or they may organize themselves into an alliance for DRR and CCA. Existing alliances between and among LGUs may also serve as a springboard for adoption of an ecosystem-based approach.
- 5.4. Provinces should review the CDP, LDIP, AIP, and Annual Budget of their component cities and municipalities to ensure consistency with the principles and considerations stated herein. Provinces are therefore advised to inform component LGUs of the significant findings for their consideration.

6.0 Ensure financing of DRR and CCA measures

To ensure that identified programs and projects that would address disaster and climate risks are implemented, these should be included in the LDIP and AIP. In order to optimize resources, LGUs are advised to incorporate CCA and DRR considerations in the design of sectoral development projects such as those in agriculture, infrastructure, water, housing and health.

- 6.1. Pursuant to Section 21 of Republic Act No. 10121, LGUs shall set aside not less than 5% of the estimated revenue from regular sources as the LDRRM Fund for disaster preparedness activities such as, but not limited to, pre-disaster preparedness programs including training, purchasing life-saving rescue equipment, supplies and medicines, for post-disaster activities, and for the payment of premiums on calamity insurance. The basis for the allocation of this LDRRM Fund shall be the LDRRM Plan. Same provision likewise stated that the LDRRM Plan should be incorporated in the CDPs and in the LDIP and AIP. NDRRMC-DBM-DILG Joint Memorandum Circular No. 2013-1, dated March 25, 2013, on the Allocation and Utilization of the Local Disaster Risk Reduction and Management Fund (LDRRMF) stipulated that the projects and activities to be charged against the LDRRMF shall be incorporated in the LDRRM Plan, and integrated in the approved Annual Investment Program (AIP) of the LGU (6.2 under 6.0 Policies and Procedures on the Utilization of the LDRRMF).

- 6.2. On the other hand, pursuant to Republic Act No. 10174, the LCCAP, derived from a CCA-DRR-mainstreamed CDP, is one of the criteria to access the People's Survival Fund, which provides long-term finance streams which LGUs can avail of for climate change adaptation programs.
- 6.3. It is suggested that the budget allocation for the programs, projects and activities in the LDRRMP and LCCAP not be sourced exclusively from LDRRRM Fund and People's Survival Fund (PSF), respectively. Those programs, projects and activities not funded under the LDRRMF/PSF but are in the LDRRMP/LCCAP should be reflected in the medium-term LDIP and in the succeeding AIPs to ensure that DRR and CCA projects are programmed, prioritized and funded. Other sources of funding should be explored.
- 6.5. Climate change adaptation and mitigation programs/projects/activities (PPAs) should be tagged as climate change expenditure item in the AIP, in accordance with DBM-CCC-DILG Joint Memorandum Circular No. 2014-1 dated August 7, 2014 entitled "Tracking/Tagging Climate Change Expenditures in the Local Budget" which is applicable for all LGUs beginning FY 2015.

7.0 Role of Stakeholders

Mainstreaming DRR and CCA in local development planning requires convergence of efforts among various national government agencies, local resource institutions/academe, civil society organizations, non-government organizations, local government units and the communities.

- 7.1. LGUs as lead in pursuit of their mandated roles in promoting general welfare of the inhabitants, delivery of basic services and facilities and the performance of their roles stipulated in RA 10121 and RA 9729;
- 7.2. National Government Agencies as sources of information related to their mandates, provision of technical assistance as necessary, capacity building activities for LGUs, and development of related policies;
- 7.3. Climate Change Commission to review climate change-tagged AIPs of LGUs, pursuant to DBM-CCC-DILG JMC 2014-1 on Climate Change Expenditure Tagging (CCET);
- 7.4. Office of Civil Defense (OCD) to formulate a review mechanism for LDRRMP;
- 7.5. DILG to:
 - formulate a review mechanism to ensure that DRR and CCA concerns are mainstreamed in the CDP
 - formulate the guidelines or guidebook on mainstreaming CCA-DRR in the CDP
 - organize a Composite Team, comprised of government agencies, CSOs/NGOs and Academe/LRIs at the Regional level, that will provide technical assistance to LGUs on matters related to mainstreaming CCA and DRR in local planning
- 7.6. Learning Resource Institutions/Academe as service providers in terms of trainings on DRR and CCA – related concerns, hazard mapping, risk and vulnerability assessment, and others, based on LGU needs and demand as may be determined by National Government Agencies

7.7. CSOs and NGOs as partners of National Government Agencies and Local Governments in the provision of technical assistance and capacity building activities related to DRR and CCA. They are also encouraged to engage in data generation and in raising the quality of analytics by working with the local governments especially in the enhancement of their database, information and ecological profiles.

All IGUs are hereby encouraged to coordinate with their respective Regional Composite Team in matters pertaining to this Circular. All DILG Regional Directors are hereby directed to disseminate this Memorandum Circular and provide the necessary and appropriate assistance to LGUs within their respective jurisdictions.

For guidance of all concerned.

MAR ROXAS
Secretary



DILG-OSEC OUTGOING 15-0214E

Annex A. Sources of Hazard Maps

Agencies	Website	Address	Hazard Maps
DOST-PAGASA	http://pagasa.dost.gov.ph/index.php/flood-hazard-maps	Science Garden Complex, BIR Road Diliman, Quezon City 1100 Tel No. (02) 434-2696	<ul style="list-style-type: none"> • Flood/flashflood
DENR-NAMRIA	http://www.namria.gov.ph	NAMRIA Main Office, Lawton Avenue, Fort Andres Bonifacio, 1638 Taguig City Tel. No. (02) 887-5466 (02) 810-4831	<ul style="list-style-type: none"> • Flood/flashflood • Rain-Induced Landslides • Tsunami • Storm surge • Earthquake-induced landslide • Ground shaking • Ground rupture • Liquefaction • Volcanic
DENR-MGB	http://gdis.denr.gov.ph/mgbviewer/	MGB Compound, North Avenue, Diliman, Quezon City Tel. No. (02) 920-9120, (02) 920-1635	<ul style="list-style-type: none"> • Flood/flashflood • Rain-induced Landslides
DOST-PHIVOLCS	http://www.phivolcs.dost.gov.ph	PHIVOLCS Building, C.P. Garcia Avenue, U.P. Campus, Diliman, Quezon City Tel. Nos. (02) 426-1468 to 79 local 112, (02) 926-2611, (02) 920-7058	<ul style="list-style-type: none"> • Tsunami • Earthquake-induced landslide • Ground shaking • Ground rupture • Liquefaction • Volcanic
DOST NOAH Project	http://noah.dost.gov.ph	DOST Project NOAH NIGS College of Science UP Diliman, Quezon City Tel. No. (02) 434-1840	<p>For Yolanda-affected LGUs</p> <ul style="list-style-type: none"> • Flood • Storm surge • Rain-Induced Landslide • Multi-hazard