

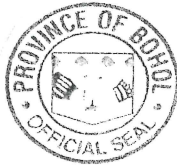
# PROVINCIAL DISASTER RISK REDUCTION and MANAGEMENT PLAN

2017-2019

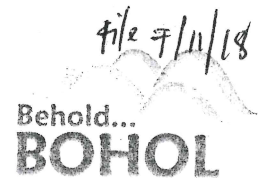


## PROVINCE OF BOHOL





Republic of the Philippines  
**PROVINCE OF BOHOL**  
City of Tagbilaran



**OFFICE OF THE SANGGUNIANG PANLALAWIGAN**

**EXCERPT FROM THE RECORD OF PROCEEDINGS OF THE REGULAR SESSION OF THE SANGGUNIANG PANLALAWIGAN OF BOHOL HELD AT AARON HALL, BOHOL PLAZA RESORT & RESTAURANT, DAYO HILL, MAYACABAC, DAUIS, BOHOL, ON JUNE 14, 2018.**

**PRESENT:**

Hon. Dionisio D. Balite, Ph.D....., Vice Governor, Presiding Officer  
Hon. Venzencio B. Arcamo ..... Member  
Hon. Kristine Alexie B. Tutor..... Member  
Hon. Abeleon R. Damalerio..... Member  
Hon. Dionisio Victor A. Balite, Ph.D..... Member  
Hon. Ricky U. Masamayor..... Member  
Hon. Tomas D. Abapo, Jr..... Member  
Hon. Elpidio M. Jala, Ph.D..... Member  
Hon. Agapito C. Avenido..... Member  
Hon. Gloria B. Gementiza..... Member, Ex-Officio, PCL,  
Hon. Romulo G. Cepedoza..... Member, Ex-Officio, Liga ng  
mga Barangay

**ABSENT:**

Hon. Jone Jade A. Bautista..... Member, On Leave

**RESOLUTION NO. 2018-369**

**ADOPTING THE LOCAL DISASTER RISK REDUCTION AND MANAGEMENT (LDRRM) PLAN 2017-2019 OF THE PROVINCE OF BOHOL.**

(Sponsored by **Hon. Venzencio B. Arcamo**)  
(Co-sponsored by the **Honorable Presiding Officer,**  
**Vice Governor, Atty. Dionisio D. Balite**)

"WHEREAS, the Honorable Vice-Governor, Atty. Dionisio D. Balite received a letter from the Honorable Governor, Atty. Edgar M. Chatto informing this August Body that the Provincial Disaster Risk Reduction and Management Council (PDRRMC) has reviewed and updated the Sangguniang Panlalawigan approved Local Disaster Risk Reduction and Management Plan (LDRRMP) 2014-2016 to meet the evolving disaster management concerns and technologies for the Province of Bohol;

"WHEREAS, the Provincial Disaster Risk Reduction and Management Council (PDRRMC) finalized and approved the LDRRMC Plan 2017-2019, and the said plan needs a corresponding Resolution from this Body in the implementation of its programs and projects and a requirement for the approval of the Annual Budget of the Province;



0059

ISO 14001:2004 Certified  
Environmental Management System  
Certificate No. 14/17032





Sangguniang Panlalawigan of Bohol  
Resolution No. 2018-369

- 2 -

"WHEREAS, this August Body approves the passage of a Resolution adopting the Local DRRM Plan 2017-2019;

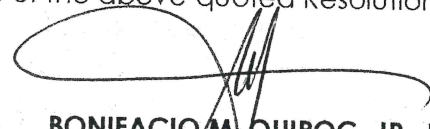
"WHEREFORE, be it resolved, as it is hereby resolved by the Sangguniang Panlalawigan of Bohol in session duly assembled -

To adopt the Local Disaster Risk Reduction and Management (LDRRM) Plan 2017-2019 of the Province of Bohol;

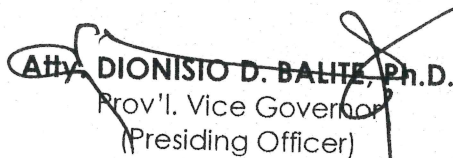
"RESOLVED FURTHER, to furnish copies of this resolution the Honorable Governor, Edgar M. Chatto and the Provincial Disaster Risk Reduction and Management Council of the Province of Bohol, for their information and appropriate action;

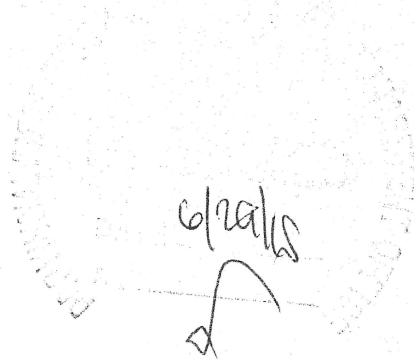
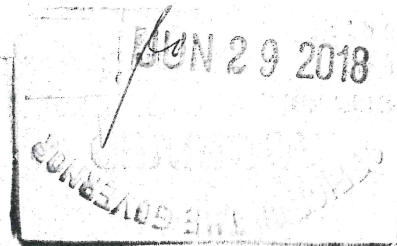
"APPROVED."

I hereby certify to the correctness of the above-quoted Resolution.

  
**BONIFACIO M. QUIROG, JR., Ph.D.**  
Secretary, Sangguniang Panlalawigan  
Province of Bohol

ATTESTED:

  
**Atty. DIONISIO D. BALITE, Ph.D.**  
Prov'l. Vice Governor  
(Presiding Officer)







Republic of the Philippines  
**PROVINCE OF BOHOL**  
City of Tagbilaran



**OFFICE OF THE SANGGUNIANG PANLALAWIGAN**

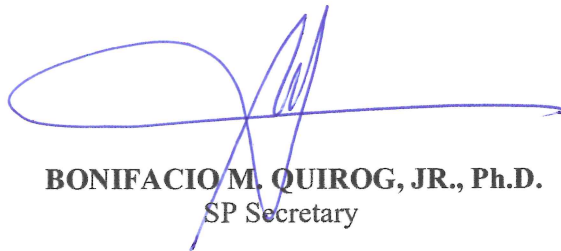
**C E R T I F I C A T I O N**

**TO WHOM IT MAY CONCERN:**

This is to certify that the Sangguniang Panlalawigan during its session held on June 14, 2018 has approved **Resolution No. 2018-369**, adopting the Local Disaster Risk Reduction and Management (LDRRM) Plan for 2017-2019 of the Province of Bohol.

This certification is issued as one of the requirements for Seal of Good Local Governance, and for whatever legal purpose it may serve best.

Tagbilaran City: 19 June 2018.



**BONIFACIO M. QUIROG, JR., Ph.D.**  
SP Secretary

/flu



0059

ISO 14001:2004 Certified  
Environmental Management System  
Certificate No. 14/17032





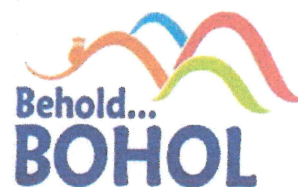
# Table of Contents

|   | Page      |
|---|-----------|
| Message of Governor .....                                       | 3         |
| PDRRMC Approval .....   | 4         |
| Acronyms and Abbreviations .....                                | 5         |
| Tables and Figures .....  | 7         |
| Executive Summary .....   | 8         |
| <b>1.0 Introduction .....</b>                                   | <b>13</b> |
| • Background .....  | 13        |
| • Plan Objectives .....   | 14        |
| • Legal Framework .....   | 15        |
| <b>2.0 Risk Profile and State of the DRRM of the PLGU .....</b> | <b>16</b> |
| • Understanding Basic DRRM Terms .....                          | 16        |
| • Risk Profile .....  | 18        |
| • Disaster Risk and Vulnerability Assessment Report .....       | 21        |
| • Assessment of Natural and Man-Made Hazards .....              | 26        |
| • The State of DRRM of the PLGU .....                           | 27        |
| • Gaps in PLGU DRRM Capacity .....                              | 30        |
| • PLGU DRRM Vision and Mission Statements .....                 | 30        |
| <b>3.0 Provincial Risk Reduction Management Plan .....</b>      | <b>33</b> |
| • Provincial DRRM Plan Components .....                         | 33        |
| • Provincial DRRM Goals, Objectives, Outcomes, Outputs .....    | 35        |
| • Provincial DRRM Priority Plans and Projects .....             | 40        |
| • Provincial Disaster Risk Reduction and Management Plan .....  | 42        |
| <b>4.0 Summary of Indicative Budget .....</b>                   | <b>80</b> |
| <b>5.0 PDRRM Plan Monitoring and Evaluation .....</b>           | <b>81</b> |
| • Monitoring and Evaluation Framework .....                     | 82        |
| • Monitoring and Evaluation Template .....                      | 83        |
| <b>6.0 PDRRM Sustainability and Communication Plan .....</b>    | <b>84</b> |
| • Sustainability Plan .....                                     | 84        |
| • Communication Plan .....                                      | 85        |
| <b>Annexures .....</b>  | <b>87</b> |





Republic of the Philippines  
PROVINCE OF BOHOL  
Tagbilaran City



## OFFICE OF THE GOVERNOR

June 5, 2017



At the outset, allow me to congratulate and thank all the members of the Provincial Disaster Risk Reduction and Management Council (PDRRMC) and their representatives who actively participated in the review and approval of the updated Local Disaster Risk Reduction and Management Plan for 2017-2019 thru PDRRMC Resolution No. 05, s. 2017 during the Council's Meeting on June 2, 2017. Your valuable inputs have been being considered and incorporated to the final copy of the Plan.

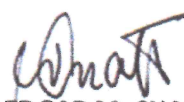
With this updated PDRRM Plan, which was presented to and approved by the PDRRMC last June 2, 2017 will be endorsed further to the Sangguniang Panlalawigan for adoption. Bohol has now a road map towards disaster resilient communities following its credo to BUILD BACK BOHOL BETTER.

We were all shocked by the tragic 7.2M that jolted our island province last October 15, 2013 and saddened with the magnitude of the disasters which continue to challenge the Province of Bohol. Our experience during the M7.2 Great Bohol Earthquake made us learn and appreciate the value of disaster awareness and disaster preparedness. Knowing our risks, assessing our vulnerabilities are very important strategies in identifying appropriate programs, projects and activities for our DRRM plan. On hindsight, disasters have made us increasingly aware of how vulnerable our island Province is not only to earthquakes but other natural and manmade hazards as well.

With this updated Plan, this will guide us in our DRRM implementation in the Province for disaster prevention and mitigation, preparedness, disaster response and disaster recovery and rehabilitation. We have a road map for effective risk reduction and management and to rise up from the effects of disasters through a comprehensive disaster rehabilitation and recovery plan.

I enjoin all to work hand in hand and demonstrate the Boholano resilient spirit for cooperation and collaboration so that we can productively and successfully implement this PDRRM Plan.

Good luck and God bless us all!

  
**ATTY. EDGAR M. CHATTO**  
Governor





Republic of the Philippines  
PROVINCE OF BOHOL  
City of Tagbilaran

Behold...  
**BOHOL**

**PROVINCIAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL**

EXCERPT FROM THE MINUTES OF THE SPECIAL COUNCIL MEETING OF THE PROVINCIAL DISASTER RISK REDUCTION AND MANAGEMENT COUNCIL (PDDRMC) OF BOHOL HELD ON JUNE 2, 2017 AT THE GOVERNOR'S MANSION, TAGBILARAN CITY

In Attendance: Majority of the Regular Members

**RESOLUTION NO. 05**  
Series of 2017

**A RESOLUTION APPROVING AND ADOPTING THE PROVINCIAL DISASTER RISK REDUCTION AND MANAGEMENT - CONTINGENCY PLAN THAT INCLUDES ALL THE 47 MUNICIPALITIES AND ONE CITY OF THE PROVINCE OF BOHOL COVERING ALL TYPES OF UNFORESEEN EVENTS WHETHER NATURAL OR MANMADE INCIDENTS AND THE IMPACTS OF CLIMATE CHANGE.**

**WHEREAS**, the Province of Bohol is one of the seismically active areas in the Philippines and is vulnerable to earthquake and its related hazards, like ground shaking, liquefaction, landslide, tsunami and even fire. Bohol likewise is threatened by drastic effects of climate change and global warming and it is ranked the 9<sup>th</sup> of the 20 provinces vulnerable to a one-meter sea level rise, extreme weather events and El Nino and La Nina Phenomena. Bohol is also prone to hydrometeorological hazards such as tropical storms, typhoons and its resulting effects such as floods, rainfall-induced landslides and storm surges and other related hazards.

**WHEREAS**, given the current hazard profile of the Province of Bohol, there is a need to formulate a Contingency Plan, which summarizes the Provincial Government's organizational framework in responding to the afore-mentioned hazards and the respective roles of every department and agencies involved prioritizing floods, rain-induced landslides and storm surges.

**WHEREAS**, there is a necessity to approve and adopt the Contingency Plan the soonest possible time for the PDDRMC to be guided in its program implementation;

**WHEREFORE**; upon motion of Mr. Meinard Butalid and duly seconded by Mr. Leonard Samar, be it resolved as it is hereby resolved by the Provincial Disaster Risk Reduction and Management Council in a meeting duly convened to pass -

**A RESOLUTION APPROVING AND ADOPTING THE PROVINCIAL DISASTER RISK REDUCTION AND MANAGEMENT - CONTINGENCY PLAN THAT INCLUDES ALL THE 47 MUNICIPALITIES AND ONE CITY OF THE PROVINCE OF BOHOL COVERING ALL TYPES OF UNFORESEEN EVENTS WHETHER NATURAL OR MANMADE INCIDENTS AND THE IMPACTS OF CLIMATE CHANGE.**

**RESOLVED** further to provide copies of this Resolution to all sectors concerned, for their information, support and cooperation.

UNANIMOUSLY APPROVED.

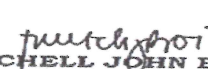
I hereby certify to the correctness of the foregoing Resolution.

  
**ANTHONY R. DAMALERIO**  
PDDRMO - Secretariat

Attested:

**ATTY. EDGAR M. CHATTO**  
Governor

By Authority of the Governor:

  
**ATTY. MITCHELL JOHN BOISER**  
Provincial Legal Officer/  
Acting Provincial Administrator  
Presiding Officer



ISO 14001:2004 Certified  
Environmental Management System  
Certificate No. 14/17032





## Acronyms and Abbreviations

|         |   |
|---------|---|
| BLGU    | Barangay Local Government Unit  |
| CCA     | Climate Change Adaptation   |
| CCC     | Climate Change Commission   |
| CDRRMC  | City Disaster Risk Reduction and Management Council                         |
| CHED    | Commission on Higher Education  |
| CLUP    | Comprehensive Land Use Plan   |
| DA      | Department of Agriculture   |
| DANA    | Damage and Needs Assessment   |
| DAR     | Department of Agrarian Reform   |
| DBM     | Department of Budget and Management   |
| DENR    | Department of Environment and Natural Resources                             |
| DepEd   | Department of Education   |
| DILG    | Department of Interior and Local Government                                 |
| DOE     | Department of Energy  |
| DOF     | Department of Finance   |
| DOH     | Department of Health  |
| DOLE    | Department of Labor and Employment  |
| DOST    | Department of Science and Technology  |
| DPWH    | Department of Public Works and Highways                                     |
| DRR     | Disaster Risk Reduction   |
| DRR-CCA | Disaster Risk Reduction - Climate Change Adaptation                         |
| DRRM    | Disaster Risk Reduction and Management                                      |
| DSWD    | Department of Social Welfare and Development                                |
| DTI     | Department of Trade and Industry  |
| GDP     | Gross Domestic Product  |
| HFA     | Hyogo Framework of Action   |
| IEC     | Information, Education and Communication                                    |
| LDRRMF  | Local Disaster Risk Reduction and Management Fund                           |
| LDRRMO  | Local Disaster Risk Reduction and Management Office                         |
| LGUs    | Local Government Units  |
| MDG     | Millennium Development Goals  |
| MGB     | Mines and Geosciences Bureau  |
| MDRRMC  | Municipal Disaster Risk Reduction and Management Council                    |
| MLGU    | Municipal Local Government Unit   |
| NCCAP   | National Climate Change Action Plan   |
| NDRRMC  | National Disaster Risk Reduction and Management Council                     |
| NDRRMF  | National Disaster Risk Reduction and Management Fund                        |
| NDRRMP  | National Disaster Risk Reduction and Management Plan                        |
| NGO     | Non-Government Organization   |
| OPA     | Office of the Provincial Agriculturist                                      |
| OPSWD   | Office of the Provincial Social Welfare and Development                     |
| OPV     | Office of the Provincial Veterinarian                                       |
| PAGASA  | Philippine Atmospheric Geophysical and Astronomical Services Administration |

|             |   |
|-------------|---|
| PAR         | Philippine Area of Responsibility                         |
| PDC         | Provincial Development Council                            |
| PDP         | Philippine Development Plan                               |
| PDRRMC      | Provincial Disaster Risk Reduction and Management Council |
| PDRRMP      | Provincial Disaster Risk Reduction and Management Plan    |
| PDPFP       | Provincial Development Plan and Physical Framework Plan   |
| PENRO       | Provincial Environment and Natural Resources Office       |
| PGBh        | Provincial Government of Bohol                            |
| PHIVOLCS    | Philippine Institute of Volcanology and Seismology        |
| PIA         | Philippine Information Agency                             |
| PLGU        | Provincial Local Government Unit                          |
| PNP         | Philippine National Police                                |
| PPDC        | Provincial Planning and Development Coordinator           |
| PPDO        | Provincial Planning and Development Office                |
| PPP         | Public-Private Partnership                                |
| RDRRMC      | Regional Disaster Risk Reduction and Management Council   |
| SAR         | Search and Rescue   |
| TaRSIER 117 | Telephone and Radio System Integrated Emergency Response  |
| TESDA       | Technical Education and Skills Development Authority      |
| UNDP        | United Nations Development Fund                           |



## Tables and Figures

| Tables    |   |         |
|-----------|---|---------|
| Table No. | Description   | Page No |
| 1         | Summary of Disaster Incidences in the Province of Bohol                       | 19      |
| 2         | Trending Climate Change Impacts in Bohol                                      | 20      |
| 3         | Matrix of Past Storms/Big Waves Events in Bohol                               | 21      |
| 4         | Matrix of Past Earthquake Events in Bohol                                     | 22      |
| 5         | Risk Analysis (R) and Vulnerability Assessments (V) of Multi-Hazards in Bohol | 25      |
| 6         | Objectives, Outcomes and Outputs for Disaster Prevention and Mitigation       | 35      |
| 7         | Objectives, Outcomes and Outputs for Disaster Preparedness                    | 36      |
| 8         | Objectives, Outcomes and Outputs for Disaster Response                        | 37      |
| 9         | Objectives, Outcomes and Outputs for Disaster Rehabilitation and Recovery     | 38      |
| 10        | Indicative DRRM Plan Investments per Pillar / Component                       | 41      |
| 11        | PDRRM Plan for Disaster Prevention and Mitigation                             | 42      |
| 12        | PDRRM Plan for Disaster Preparedness  | 54      |
| 13        | PDRRM Plan for Disaster Response  | 69      |
| 14        | PDRRM Plan for Disaster Rehabilitation and Recovery                           | 71      |
| 15        | PDRRM Plan Monitoring and Evaluation Framework                                | 78      |
| 16        | PDRRM Plan Monitoring and Evaluation Template                                 | 79      |
| 17        | Sustainability Plan for the PDRRM Plan  | 80      |
| 18        | Communication Plan for the PDRRM Plan   | 81      |

| Figures   |  |         |
|-----------|--|---------|
| Figure No | Description  | Page No |
| 1         | Ground-Shaking Hazard Map  | 24      |
| 2         | Bohol Provincial Disaster Risk Reduction and Management Framework  | 30      |
| 3         | Hyogo Framework for Action (HFA) Five Priority Actions   | 32      |
| 4         | Four Mutually-Reinforcing Thematic Areas of the Provincial Disaster Risk Reduction and Management (PDRRM) Plan | 34      |

## EXECUTIVE SUMMARY

---

The enactment of Republic Act 10121 otherwise known as the Philippine Disaster Risk Reduction and Management Act of 2010 has laid the basis for a paradigm shift from just disaster preparedness and response to disaster risk reduction and management (DRRM). The National DRRM Plan serves as the national guide on how sustainable development can be achieved through inclusive growth while building the adaptive capacities of communities; increasing the resilience of vulnerable sectors; and optimizing disaster mitigation opportunities with the end in view of promoting people's welfare and security towards gender-responsive and rights-based sustainable development.

Over the past several years, the country has gained a lot of attention and momentum in the area of disaster risk reduction. Numerous projects and activities have been undertaken by various Philippine stakeholders and agencies in DRRM. However, sustaining the positive results and scaling them up to effect rippling positive changes in the lives of the people have been constant challenges. Threats remain. Disasters and people's risk to disasters are still present.

This is because the underlying causes of people's vulnerability has yet to be fully fully recognized and addressed. For years, DRR has focused more on efforts around disaster preparedness and response and not so much in identifying the hazard-prone areas and other factors which contribute to people's exposure to disasters; incorporating risk analysis to development plans; building people's capacities towards sustainable livelihood options; and the like. Although DRR has been gaining attention among peoples and institutions, complete paradigm shift from "disasters as an immediate product of hazards" to "disasters as a function of people's vulnerability" has not yet fully happened. Also, converging DRR and CCA remains to be a challenge, both in understanding, mainstreaming into plans and policies, including institutional mechanisms. Lastly, gaps in terms of increased knowledge, understanding and capacities remain and cause a big challenge for the country in terms of DRRM.

The NDRRMP outlines the activities aimed at strengthening the capacity of the national government and the local government units (LGUs) together with partner stakeholders, to build the disaster resilience of communities and to institutionalize arrangements and measures for reducing disaster risks, including projected climate risks and enhancing disaster preparedness and response capabilities at all levels. It highlights, among others, the importance of mainstream DRRM and CCA in the development processes such as policy formulation, socio-economic development planning, budgeting and governance particularly in the area of environment, agriculture, water, energy, health, education, poverty reduction, land-use and urban planning and public infrastructure and housing among others. Mainstreaming also puts to forth the need to develop common tools to analyze the various hazards and vulnerability factors which put our communities and people into harms way.

The NDRRMP also highlights the need for institutionalizing DRRM policies, structures, coordination mechanisms and programs with continuing budget appropriation on DRR from national down to local levels. Through permanent mechanisms, competency and science-based capacity building activities can be done, alongside the nurturing of continuous learning through knowledge development and management of good DRRM practices on the ground.

Last but not least, the NDRRMP adheres to the principles of good governance within the context of poverty alleviation and environmental protection. It is about partnerships and working together –



engaging the participation of CSOs, the private sector and volunteers in the government's DRRM programs towards complementation of resources and effective delivery of services to the citizenry.

In accordance with the NDRRMF, through the NDRRMP, the country will have "Safer, adaptive and disaster resilient Filipino communities towards sustainable development. "This will be achieved through the four distinct yet mutually reinforcing priority areas, namely, (a) Disaster Prevention and Mitigation; (b) Disaster Preparedness; (c) Disaster Response; and (d) Disaster Recovery and Rehabilitation. Each priority area has its own long term goal, which when put together will lead to the attainment of our country's over goal/vision in DRRM.

These priority areas are not autonomous from the other nor do they have clear start and end points. The 4 priority areas are NOT seen as a mere cycle which starts in prevention and mitigation and ends in rehabilitation and recovery. They are:

- (a) Mutual reinforce each other and are interoperable.
- (b) DO NOT, SHOULD NOT and CANNOT stand alone.
- (c) Have no clear starting nor ending points between each of the aspects and overlaps are to be expected.
- (d) Are problem-needs and asset-strengths centered.
- (e) All point to one direction ◇ reduce people's vulnerabilities and increasing their capacities.

In summary, the NDRRMP has 4 priority areas with 4 long term goals; 14 objectives; 24 outcomes; 56 outputs; and 93 activities.

| Priority Areas            | Long Term Goals   | Objectives  |
|---------------------------|---|---|
| Prevention and Mitigation | Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities                 | <ul style="list-style-type: none"> <li>• Reduce vulnerability and exposure of communities to all hazards</li> <li>• Enhance capacities of communities to reduce their own risks and cope with the impacts of all hazards</li> </ul>   |
| Disaster Preparedness     | Establish and strengthen capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters | <ul style="list-style-type: none"> <li>• Increase the level of awareness of the community to the threats and impacts of all hazards, risks and vulnerabilities</li> <li>• Equip the community with the necessary skills to cope with the negative impacts of a disaster</li> <li>• Increase the capacity of institutions</li> <li>• Develop and implement comprehensive national and local disaster preparedness policies, plans and systems</li> </ul> |
| Disaster Response         | Provide life preservation and meet the basic subsistence needs of affected  | <ul style="list-style-type: none"> <li>• To decrease the number of preventable deaths and injuries</li> <li>• To provide basic subsistence needs of affected population</li> </ul>  |

| Priority Areas              | Long Term Goals  | Objectives   |
|-----------------------------|--|--|
|                             | population based on acceptable standards during or immediately after a disaster  | <ul style="list-style-type: none"> <li>To immediately restore basic social services</li> </ul>   |
| Rehabilitation and Recovery | Restore and improve facilities, livelihood and living conditions and organizational capacities of affected communities, and reduced disaster risks in accordance with the “building back better” principle | <ul style="list-style-type: none"> <li>To restore people’s means of livelihood and continuity of economic activities and business</li> <li>To restore shelter and other building/installation</li> <li>To reconstruct infrastructure and other public utilities</li> <li>To assist in the physical and psychological rehabilitation of persons who suffered from the effects of disasters</li> </ul> |

The priority area on **Disaster Prevention and Mitigation** provides key strategic actions that give importance to activities revolving around hazards evaluation and mitigation, vulnerability analyses, identification of hazard-prone areas and mainstreaming DRRM into development plans. It is based on sound and scientific analysis of the different underlying factors which contribute to the vulnerability of the people and eventually, their risks and exposure to hazards and disasters.

**Disaster Preparedness** provides for the key strategic actions that give importance to activities revolving around community awareness and understanding; contingency planning; conduct of local drills and the development of a national disaster response plan. Risk-related information coming from the prevention and mitigation aspect is necessary in order for the preparedness activities to be responsive to the needs of the people and situation on the ground. Also, the policies, budget and institutional mechanisms established under the prevention and mitigation priority area will be further enhanced through capacity building activities, development of coordination mechanisms. Through these, coordination, complementation and interoperability of work in DRRM operations and essential services will be ensured. Behavioral change created by the preparedness aspect is eventually measured by how well people responded to the disasters. At the frontlines of preparedness are the local government units, local chief executives and communities.

**Disaster Response** gives importance to activities during the actual disaster response operations from needs assessment to search and rescue to relief operations to early recovery activities are emphasized. The success and realization of this priority area rely heavily on the completion of the activities under both the prevention and mitigation and preparedness aspects, including among others the coordination and communication mechanisms to be developed. On-the-ground partnerships and the vertical and horizontal coordination work between and among key stakeholders will contribute to successful disaster response operations and its smooth transition towards early and long term recovery work.



The **Rehabilitation and Recovery** priority area cover areas like employment and livelihoods, infrastructure and lifeline facilities, housing and resettlement, among others. These are recovery efforts done when people are already outside of the evacuation centers.

The NDRRMP recognizes that certain concerns cut across the 4 DRRM priority areas. These include health, human-induced disasters, gender mainstreaming, environmental protection, cultural sensitivity or indigenous practices, and the rights based approach. They are a combination of issues and approaches that should be taken into consideration in each of the priority areas.

The NDRRMP is scheduled to commence in 2011, immediately after its approval from the members of the National DRRM Council members. In general, the set of activities are divided into three timelines, with the first two having 2years interval while the last one with 5 years, to wit:

Short term 2011 – 2013

Medium term 2014 – 2016

Long term 2017 – 2028

However, specifically for the priority areas on **Response and Rehabilitation and Recovery**, Operational Timelines were used primarily to give an overall guidance on “rapid” time element in providing humanitarian activities and recovering from the disasters. Likewise, the operational timelines will guide the plan’s implementation and monitoring activities for the two priority areas. These operational timelines are as follows:

Immediate Term (IT) within 1 year after the occurrence of the disaster

Short Term (ST) within 1 to 3 years after the occurrence of the disaster

Medium Term (MT) within 3 to 6 years after the occurrence of the disaster

Long Term (LT) beyond 6 years after the occurrence of the disaster

All throughout the NDRRMP, various strategies were identified to be used in order to achieve the desired key result areas under each DRRM aspect. These are:

- ♣ Advocacy and Information, Education and Communication (IEC)
- ♣ Competency-based capability building
- ♣ Contingency Planning
- ♣ Education on DRRM and CCA for ALL
- ♣ Institutionalization of DRRMCs and LDRRMOs
- ♣ Mainstreaming of DRR in ALL plans
- ♣ Research, Technology Development and Knowledge Management
- ♣ Monitoring, evaluation and learning
- ♣ Networking and partnership building between and among stakeholders, media and tiers of government.

In each of the activities under the NDRRMP, agency leads and implementing partner agencies and/or groups were identified. Following RA 10121, the overall lead or focal agency for each of the four priority areas are the vice-chairpersons of the National DRRM Council.

The NDRRMP also identified areas where **resources** can be tapped for the implementation of the activities. These are both for the national and local levels. However, because mainstreaming of DRRM into policies and plans is the primary thrust of the NDRRMP, these activities will not have separate funding sources but will be mainstreamed into the activities of the agencies and offices. Sources identified include the General Appropriations Act (GAA); National and Local DRRM Funds; Internal Revenue Allocation (IRA); Priority Development Assistance Fund (PDAF); Donor Funds; Adaptation and Risk Financing, among others. Aside from the fund sources, the NDRRMP will also tap into the non-monetary resources available which can help attain the targets identified in this plan. These are the community-based good practices for replication and scaling up; indigenous practices on DRRM; Public-Private-Partnerships; and the different networks (DRR and CCA) of key stakeholders.

**Monitoring and evaluation** are essential components of results-based programming in DRRM as these will ensure that the plan's on-time implementation and that learnings from past experiences become input to the plan altogether. Also, through monitoring and evaluation activities, appropriate and needed revisions and/or changes can be identified, from the identified activities to the implementation mechanisms, in case more appropriate ones are realized. These will be led by the Office of Civil Defense, in close coordination with the four vice chairpersons of the NDRRMC by focusing on relevance, effectiveness, efficiency, impact and sustainability. A standard monitoring and evaluation template will be developed by the OCD together with the members of the Technical Management Group.

The NDRRMP was developed in partnership with the key stakeholders in DRRM in the country. Likewise, the success of the plan and the attainment of its targets and objective can only happen if an all-of-government and all-of society approach is done. By working together and working hand-in hand, we can achieve safer, adaptive and disaster resilient Filipino communities towards sustainable development.



## 1.0 Introduction

### Background

The Philippines is exposed to natural and human-induced hazards due to its geography and geology as well as the presence of internal disputes in some areas. Between 1990 and 2006, the annual direct damages caused by disasters amount to PhP20 billion every year or roughly 0.5% of the GDP on the average, according to the National Disaster Risk Reduction and Management Council (NDRRMC). However, the losses caused by tropical storm Ondoy and typhoon Pepeng in 2009 is estimated to be about 2.7% of the GDP that year. These are compelling reasons why the Philippines should adopt disaster risk reduction and management (DRRM) and climate change adaptation (CCA).<sup>1</sup>

Hazards – both natural and human induced – happen due to geological, meteorological, hydrological, oceanic, biological, and technological sources, sometimes acting in combination. Hazards are of different intensities for different areas and levels of vulnerability, as determined from historical evidence and scientific analysis. Disasters can be avoided and mitigated

Recorded history tells us that the Filipino people have borne loss of lives, injury and other health impacts, property damage, loss of livelihoods and services, social and economic disruption or environmental damage, and the negative effects have even risen. Our communities, towns and cities have become more susceptible to the damaging effects of hazards.

Due to its geography and geology as an island, Bohol Province is likewise exposed to numerous natural and human-induced hazards in the past years. A major event that has put Bohol Province in the disaster map was the 7.2 magnitude (Ms) earthquake of tectonic origin that occurred in the province on October 15, 2013. The disastrous event, which is now called “The Great Bohol Earthquake of 2013” has caused extensive damages to service infrastructures, government facilities as well as centuries-old religious structures declared as national cultural treasures. Thousands of residential homes totally collapsed and several thousand others were partially destroyed. Bridges and access roads sustained considerable damages. Since then, Bohol gained a lot of attention and momentum in the area of disaster risk reduction.

The earthquake event, though disastrous and devastation, has brought a deep sense of awareness and realization to the Boholanos led by the indefatigable Governor Edgar M. Chatto to work together to “build back Bohol better” and to prepare a plan Boholano communities to be more disaster resilient. Although the Provincial Government of Bohol (PGBh) has already prepared what was then called a Provincial Disaster Risk Reduction

---

<sup>1</sup> Primer of the National Disaster Risk Reduction Management Plan, 2011-2018; p1

Management (PDRRM) Plan, the 7.2M earthquake experience has inspired provincial leaders and stakeholders, especially the Provincial Disaster Risk Reduction Management Council (PDRRMC), to revisit the existing plan and make this more responsive to the risk and vulnerabilities of Bohol to multi hazards and disasters.

The enactment of Republic Act 10121 otherwise known as the Philippine Disaster Risk Reduction and Management Act of 2010 has laid the basis for a paradigm shift from just disaster preparedness and response to disaster risk reduction and management (DRRM). The National Disaster Risk Reduction Management Plan that was adopted to operationalize RA 10121 became the basis and main reference for the preparation of the Provincial Disaster Risk Reduction Management Plan.

The United Nations Development Programme (UNDP) has provided technical assistance to the Provincial Government of Bohol for increased disaster preparedness, resiliency and disaster risk reduction management to cope with emergency response during disasters through the preparation of the Provincial Disaster Risk Reduction Management Plan (PDRRMP) that is aligned with the National Risk Reduction Management Plan (NDRRMP) as well as with Provincial Development Plan and Physical Framework Plan (PDPFP).

## **Plan Objectives**

The objectives of the Provincial Disaster Risk Reduction Management Plan are best summarized as follows:

- Identify the multi-hazards affecting Bohol Province;
- Review the historical timeline in regard to the calamities that occurred in Bohol for the past five years and beyond;
- Review the recent Bohol Risk and Vulnerability Assessment results and the hazard maps from various sources;
- Assess Provincial Government's strengths and weaknesses in DRRM;
- Craft DRRM Vision, Mission Statements including Goals and Strategies, and 3-Year Action Plan with Budget Estimates;
- Develop local policies specific to implementing the DRRM Plan; and
- Develop Monitoring and Evaluation Framework, Sustainability and Communication Plans

## Legal Framework

The major references in the preparation of the Plan include the following:

- National DRRM Plan based on RA 10121 of 2010 that provides a legal basis for policies, plans and programs to deal with disasters;
- The Philippine Disaster Management System from the Office of Civil Defence – National Disaster Coordinating Council (OCD-NDCC)
- Bohol Provincial Disaster Risk Reduction Management Plan of 2012 was approved in December 2012 in compliance of the directive from the Department of Interior and Local Government (DILG).
- Executive Order No 40, series of 2012, reconstituting and strengthening the PDRRMC
- JMC (DILG, NDRRMC, DBM, CSC), 2014-01, dated April 4, 2014 providing guidelines for the creation of Local DRRM and Barangay DRRM Committees at all LGU levels
- Work and Financial Plan and Request for Budget Allocations for 2014 for the implementation of the DRRM Plan at the Governor's Office



## 2.0 Risk Profile and the State of the DRRM

The Bohol Provincial Development and Physical Framework Plan (PDPFP, Volume 1 devotes two sections that describe the hazards and disasters faced by the island province. Section 3.2.5 discusses on areas prone to natural hazards) and Section 3.2.6 describes disaster risk management.

The island province of Bohol is predominantly a sedimentary island. It developed from the magmatic, tectonic mechanism that resulted from the under thrusting of the southwest Philippine Plate east of Samar and Surigao<sup>4</sup>. Ongoing erosion, transport and sedimentation continue to accumulate marine and terrestrial deposits in the Bohol basin.

Population growth and economic activities have created pressures on Bohol's environment and natural resources. High demand for physical infrastructure like roads, water systems and power, settlement areas as well as greater demand for goods and services are expected to add pressure on its environment that are looked upon as major necessities for the province's development but often create environmental stress. Such developments in the province need to pro-actively integrate a mechanism to prevent adverse impact on the critical resources and exposure of people and property to danger. Environmentally constrained areas are prone to natural hazards, severe erosion or more specifically, hydrological and geological produced changes.<sup>2</sup>

### Understanding Basic DRRM Terms

A thorough risk analysis, vulnerability assessment as well as evaluation of the disaster risk reduction management capacity of the provincial government entail understanding of major terms related to disaster risk reduction management. These basic concepts<sup>3</sup> are discussed below.

- **Hazards** An event that is either natural or man-made which brings damage to people, property, livelihood or temporary or permanent cessation to social and economic life or environmental destruction. This can result to a disaster. Examples: typhoon, earthquakes, floods, flash floods, landslide, volcano eruption, storm surge, tsunami, fire, wars, civil unrest.

---

<sup>2</sup> Provincial Development and Physical Framework Plan (PDPFP), Volume 1, p29

<sup>3</sup> Community-Based Disaster Risk Management, "*Pagsasanay sa Disaster Preparedness at Contingency Planning*," ACCORD Project 2007, pp 23-45.

Hazards could be alone or a solo occurrence. Hazards can also be successive or brought about by other hazards, e.g. Japan **earthquake** brought a fierce **tsunami**; or earthquakes bring landslide; or rains/ storms bring flooding. Hazards can be occurring as combination – typhoon/storm brings heavy rains and brings landslide or flooding.

- **Disasters** Results or effects of a HAZARD to a “vulnerable” community or to a poor community whose capacity and resources are not enough to meet the hazard. Disasters can also result from massive destruction to lives and property (i.e. Yolanda), social and economic life and environmental destruction putting a temporary stop to day-to-day life.

Not all hazards are disastrous. Hazards become disasters, if

- ✓ There is a massive effect; more populace are affected;
  - ✓ They affect a vulnerable community whose day-to-day social and economic life will temporarily stop
  - ✓ The community does not have adequate capacity and enough resources to manage the extent of damage of the hazard
  - ✓ “Disaster-consciousness,” which means the knowledge of people on disaster is lower /lesser than the actual or natural phenomenon or event and disaster preparedness is low.
- **Capacity** Collective effort and resources of people, families and communities, including government to work and collaborate to mitigate the effects of disasters, prepare for the emergency, and recover from the effect of the disaster. Resources increase the capacity of a community to deal with and manage the resources. Resources are anything or any event that has something to do with physical, social, livelihood, usual practices, abilities, knowledge, governance, institutions, customs and views/values of people and local communities.

These examples below are helpful to illustrate capacity:

- a) People who have stable jobs are better able to rise up and recover from a disaster than an ordinary daily-wager (**more resources and capacity**)
- b) A community that has the leadership, resources and cooperation by all is more able to mobilize for community response and recover from a disaster (**capacity and resources**)
- c) Strong and well-founded houses are not easily carried away by typhoons bringing strong winds
- d) Children who are healthy and well-nourished do not easily get sick when brought to evacuation centers than those who are malnourished and therefore vulnerable for illnesses during evacuations

- e) People who have more skills have bigger chances to find jobs and alternative work when disaster hits their communities

It is therefore evident that when people and local communities increase their capacity and resources to reduce risks and manage disasters, they become more disaster-prepared and less vulnerable to the effects of disasters and hazards.

- **Vulnerability** This refers to the tendency and chance that the effect of a hazard be more felt, intense and worst, uncontrollable in the community. Vulnerability includes set of conditions resulting from physical, social, economic, and environmental factors which increase susceptibility to losses from the impact of natural or human human-made hazards. Vulnerability can take a physical, social and economic form. Vulnerability puts people and communities in a situation where the effects (disaster) of a hazard will be greater.

Vulnerability puts local communities in a WORSENER condition or situation (compared to before the disaster) due to or at the time of the disaster and will continue to be worst even after the disaster.

- **Risk** It is the probability of harmful consequences or expected losses, resulting from interaction between natural or human human-made hazards and vulnerable conditions. Severity of the hazard increases the disaster risk.
- **Disaster Risk Management** This is a systematic process of using administrative decisions, organization, operational skills and capacities to implement policies, strategies and coping capacities of the society and communities to lessen the impacts of natural hazards and related environmental and technological disasters. This comprises all forms of activities, including structural and non- structural measures to avoid (prevention) or to limit (mitigation and preparedness) adverse effects of hazards.<sup>4</sup>

## Risk Profile

Minor and major fault lines are evident on the island as shown by terraced escarpments occurring in its southern and central parts. The terraced escarpments in the Ilihan Formation as well as the graben at the Anda Peninsula are manifestations of these faults. Steep escarpments notably in Loon, Tagbilaran and in Anda Peninsula further prove vertical upliftment caused by tectonics.

---

<sup>4</sup> Philippine Disaster Risk Management System, Office of Civil Defence (OCD) and National Disaster Coordinating Council (NDCC), PowerPoint Slide No. 42.



Prior to the October 15, 2013 7.2M earthquake in the province, earthquakes have been felt in Bohol but only an average of one perceptible shock is reported each year. Major faults usually trend towards the northeast. Three earthquakes with a magnitude above 4 of the Richter scale (highest was 4.7Ms which occurred in June) were reported in 1998 in the province of Bohol.

There are compelling and urgent reasons why the Province of Bohol should adopt disaster risk reduction and management (DRRM) and climate change adaptation (CCA). It is very obvious from the October 15, 2013 7.2 M earthquakes have jolted not only the island but also its leaders on the level of disaster risks that the province is faced with. It was dawned on the Boholanos that the province is exposed to disasters and hazards due to its geography and geology.

Environmental risk exists if an area is exposed to certain levels of danger because of its location, surrounding features or proximity to certain objects or activities such as the effects of natural phenomena like hurricanes, earthquakes, volcanoes landslides, flooding and tsunami which expose the lives and properties of people to undue harm with profound effect to ecological systems. Inappropriate development also leads to greater disaster risks.

The poor location of settlements, economic activities and infrastructures, inappropriate use of resources and rapid urban growth exert pressure resulting to further degradation to the environment and spawn more vulnerable communities. In the event of calamities due to natural hazards, vulnerable communities may not be able to cope and hence, will result in a disaster which will eventually lead to risk accumulation and bigger losses when disaster occurs in the area.

Bohol, being an island province, is vulnerable to natural disasters, e.g. drought, storm surges, tsunami, flooding, earthquake, tropical cyclones and landslide. As such, the province has been incurring significant economic and environmental damages from natural and man-made disasters estimated at an average annual direct damage at P14.0 million reaching a total damage of almost P 69 million from 2004-2008 (Table 27-Annex 1 of the PDPFP).

Notable calamities that hit the province include earthquakes, flash floods in Clarin, Tubigon, Loon and Calape; landslides in Balilihan, Loboc, Alicia, Cortes, Jagna, Sierra Bullones; severe rains in Getafe and typhoons “Frank” and “Lando” that left significant damage to Bohol’s agricultural assets. Manmade calamities were also recorded during the period ranging from fire incidents, diarrhoea outbreak and sea mishaps.

From 2006-2008, there were a total of 110 earthquakes, of which only 23% were perceptible and felt by the people in the affected location. Most of the quakes (77%) were not perceptible.

From October 2004 to December 2013, the Bohol Office of Civil Defence reported a total of 72 disaster incidence in the province with a total damage cost of P68.973 million. The geologic and hydro-meteorological disasters that hit Bohol were flash floods, landslide, and earthquake.

**Table 1**                      **Summary of Disaster Incidences in the Province of Bohol**

| <b>Date/Year</b>        | <b>Nature of Event<br/>(natural/man-made)</b>  | <b>No. of<br/>Occur-<br/>rences</b> | <b>Location</b>   | <b>Cost of<br/>Damage<br/>(million<br/>pesos)</b> |
|-------------------------|--|-------------------------------------|---|---|
| October 2004            | Flashflood   | 1                                   | Jagna   | Php 0.100   |
| January to Dec. 2005    | Heavy rains, landslide, fire incidents, typhoon, earthquake  | 7                                   | Jagna, Getafe, Calape, Tagbilaran City  | Php 15.048  |
| January to Dec. 2006    | Disease outbreak (diarrhea), lightning incidence, landslide, sea mishap, capsized vessel, tidal waves, land cracks, typhoons         | 18                                  | Loon, Pilar, Tubigon, Ubay, Valencia, Loay, Panglao, Jagna, Candijay, Bien Unido, Getafe, Cortes, Alicia, Sierra Bullones, Batuan   | Php 16.450  |
| January to Dec. 2007    | Landslide, fire incidents, whirlwind (alimpus), lightning incidents, poisoning, drowning, earthquake, capsized motor blanca, typhoon | 18                                  | Tagbilaran City, Jagna, Pres. Garcia, Talibon, Getafe, Trinidad, Pilar, Tubigon, Valencia, Ubay, Loon, Loboc, Loay, Candijay  | Php 6.547   |
| January to Dec. 2008    | Flashflood, fire incident, landslide, typhoon, capsized vessel/fishing boat, airplane crash  | 28                                  | Clarin, Tubigon, Tagbilaran City, Cortes, Buenavista, Panglao, Balilihan, Pilar, Talibon, Loon, Lila, Getafe, Dimiao, Loboc, Pres. CPG, Guindulman, Inabanga  | Php 30.828  |
| March 2010-October 2013 | Earthquake   | 6                                   | 17 hardest municipalities: North and south-western part of Bohol; Maribojoc, Loon, Tubigon, Calape, Clarin Inabanga, Buenavista, Danao, Sagbayan, Catigbian, San Isidro, Antequera, Balilihan and Cortes; | 7.8 Billions                                      |

| <b>Date/Year</b>             | <b>Nature of Event<br/>(natural/man-made)</b>                      | <b>No. of<br/>Occur-<br/>rences</b> | <b>Location</b>   | <b>Cost of<br/>Damage<br/>(million<br/>pesos)</b> |
|------------------------------|--|-------------------------------------|---|---|
|                              |  |                                     | Southern municipalities of Loboc, Carmen, Lila, Guindulman, Duero, Jagna, G-Hernandez, Valencia, Loay Albuquerque, Baclayon and Tagbilaran City |   |
| October 2014 - December 2014 | Tropical Cyclones Queenie, Ruby and Senyang caused flooding events |                                     | Eastern and interior parts of Bohol   | <b>Php1,499.468 Billion</b>                       |
| <b>Total</b>                 |  | <b>78</b>                           |   | <b>Php 7.949 billion</b>                          |

The Provincial Government of Bohol has created the Provincial Disaster Coordinating Council (PDCC) to prepare, promote and coordinate measures to protect human lives and property during these unforeseen events. Coordination among offices headed by the Governor is very vital on the event of disasters with support from 62 government offices and private establishments. Communication and warning mechanisms are already in-place through PAG-ASA, Philippine National Police, Bohol Law Enforcement Communication System (BLECS), radio stations, information and warnings that reach people in real time. The evacuation system is arranged with the Department of Education and other government offices where schools and other public buildings are utilized as evacuation centers. Table 28-Annex 1 of the PDPFP presents the existing facilities and services in the province thru its Provincial, City and Municipal Disaster Coordinating Councils.

### **Disaster Risk and Vulnerability Assessment Report<sup>5</sup>**

In terms of hydro-meteorological hazards, Bohol is susceptible to flooding, rain-induced landslides, storm surges and big waves which are also brought about by climate change impacts.

<sup>5</sup>This report is taken from the Office of Civil Defense (OCD)-Bohol and the rest come from the Mines and Geosciences Bureau – Region 7



**Table 2 Trends in Climate Change Impacts in Bohol**

| <b>Climate Change Impacts</b>  | <b>Areas or location affected (Municipalities/Barangays)</b> | <b>Trend</b>                               | <b>Intensity</b>           | <b>Frequency of Occurrence</b>  |
|--|--|--|----------------------------|---|
| Sea level rise   | 30 coastal towns including Tagbilaran City                   | same areas                                 | every year                 | increasing every year   |
| Prolonged drought  | 47 towns and 1-city  | expanding to coastal areas                 | every year                 | every year  |
| El Nino events   | 47 towns and 1-city  | expanding to coastal areas                 | every year                 | every year  |
| Floods   | 336 out of 1,109 brgys (47 towns and 1-city)                 | expanding to other areas                   | Increasing                 | Increasing every year (flash flooding, seasonal, river overflow, coastal flooding due to heavy rains, dam overflow) |
| Storm surge  | 30 coastal towns and 1-city                                  | same areas                                 | Increasing                 | Increasing every year   |
| Monsoon rains<br>a) Southwest Monsoon or "Habagat" in the local dialect;<br>b) Northeastern Monsoon or "Amihan" in the local dialect | 47 towns and 1-city  | expanding to interior part of the province | Increasing even dry season | Increasing every year   |

The risk and vulnerability assessment report estimates that there are 112 barangays in Bohol which are susceptible to flowing. As far as rain-induced landslides are concerned, there are about 298 barangays in Bohol which are highly susceptibility to rain-induced landslides, while 586 barangays have medium susceptibility and 812 barangay with low susceptibility. In terms of storm surges or big waves, a total of 316 barangays in Bohol are susceptible. Table 3 below shows past occurrences of storm surges and big waves in Bohol.

**Table 3 Matrix for Past Storm Surges/Big Waves Events in Bohol**

| DESCRIPTION   | POPULATION/AREAS AFFECTED   | IMPACTS  |
|---|---|--|
| Nov. 27, 2014 TS Queenie; Dec. 6, 2014 TS Ruby and Dec. 29, 2014 TS Seniang | Provincewide  | Total Damage: 1,499,468.00<br>Easter and interior towns of Bohol   |
| June 25, 2008 Typhoon "Frank"   | Talibon, Loon, Lila, Getafe, Dimiao, Guindulman   | Total Damages – P3.2M<br>Talibon – P1M<br>Loon – P1.5M<br>Lila – P0.1M<br>Getafe – P0.3M<br>Dimiao – P0.2M<br>Guindulman – P0.1M                           |
| May 12, 2008 Low Pressure Area  | Province wide   | No data  |
| May 8, 2008 TD "Butchoy"  | Province wide   | No data  |
| April 14, 2008 TD "Ambo"  | Province wide   | No data  |
| Nov. 11-12, 2007 TS "Lando"   | Pres. Carlos P. Garcia<br>Bien Unido<br>Zamora, Talibon<br>Buenavista<br>Getafe<br>Trinidad | Total Damages – P1.387M<br>Pres. Garcia – P0.472M<br>Bien Unido/Getafe – No data<br>Zamora, Talibon – P0.76M<br>Buenavista – No data<br>Trinidad – P0.055M |
| November 19, 2007 Whirlwind "Alimpus"                                       | Pres. Carlos P. Garcia  | Damaged houses – P1M   |
| June 16, 2007 Whirlwind "Alimpus"   | Loon  | No data  |

Geologic hazards result from geologic processes acting on or beneath the earth's surface. These include movement of plate in the earth's crust or from local concentration of heat and are source of hazards to people and their natural and built-up environment on the earth's surface.

Bohol is prone to geologic hazards like ground shaking, liquefaction, earthquake-induced land slide and tsunami because of the presence of East Bohol Fault and another fault located in the Bohol Sea going to Mindanao Sea facing the southern part of Bohol. The presence of Negros Trench and PFZ Central Leyte Fault may also contribute to the generation of earthquake.

**Table 4 Matrix for Past Earthquake Events in Bohol**

| DESCRIPTION  | POPULATION/AREAS AFFECTED  | IMPACTS   |
|--|--|---|
| <b>October 15, 2013</b>  | 17 hardest municipalities:<br>North and south-western part of Bohol; Maribojoc, Loon, Tubigon, Calape, Clarin Inabanga, Buenavista, Danao, Sagbayan, Catigbian, San Isidro, Antequera, Balilihan and Cortes;<br>Southern municipalities of Loboc, Carmen, Lila, Valencia, Loay Albuquerque, Baclayon and Tagbilaran City | Intensity 7.2<br>211 dead persons<br>877 injured and 8 missing persons<br>Php 7.4 Billion damaged to major infrastructures, houses, government buildings, tourism facilities, properties and other businesses |
| <b>July 18, 2011 Earthquake</b>  | 09.64°N, 124.58°E - 17 km S 36° E of Guindulman (Bohol) 03:10 PM   | Intensity II<br>No damage   |
|  | 09.61°N, 124.53°E - 17 km S 15° E of Guindulman (Bohol) 05:02 PM   | No damage   |
| <b>June 11, 2011 Earthquake</b><br>Magnitude 3.3 hits in the Province of Bohol | Loboc, Bohol<br>Tagbilaran City<br>Cortes, Bohol   | Intensity III<br>Intensity II<br>No Damage  |
| <b>August 28, 2010 Earthquake</b>  | Brgy. Tabahan, Brgy. Bulawan, Guindulman, Bohol  | No damage   |
| <b>June 21, 2010 Earthquake</b>  | Dauis, Bohol   | No damage   |
| <b>May 7, 2010 Earthquake</b>  | Jagna  | Intensity - III   |
|  | Garcia-Hernandez<br>Duero<br>Tagbilaran City   | Intensity – III<br>Intensity – II<br>No Damage  |
| <b>March 26, 2010 Earthquake</b>   | Tagbilaran, Dauis, Corella   | No data   |
| <b>January 8, 2009 Earthquake</b>  | Anda, Bohol  | No damage   |

In terms of earthquake susceptibility, the same risk and vulnerability assessment report states that there are 381 barangays in Bohol which are susceptible to intensity 7 earthquakes and about 887 barangays which are susceptible to Intensity 8 earthquakes.

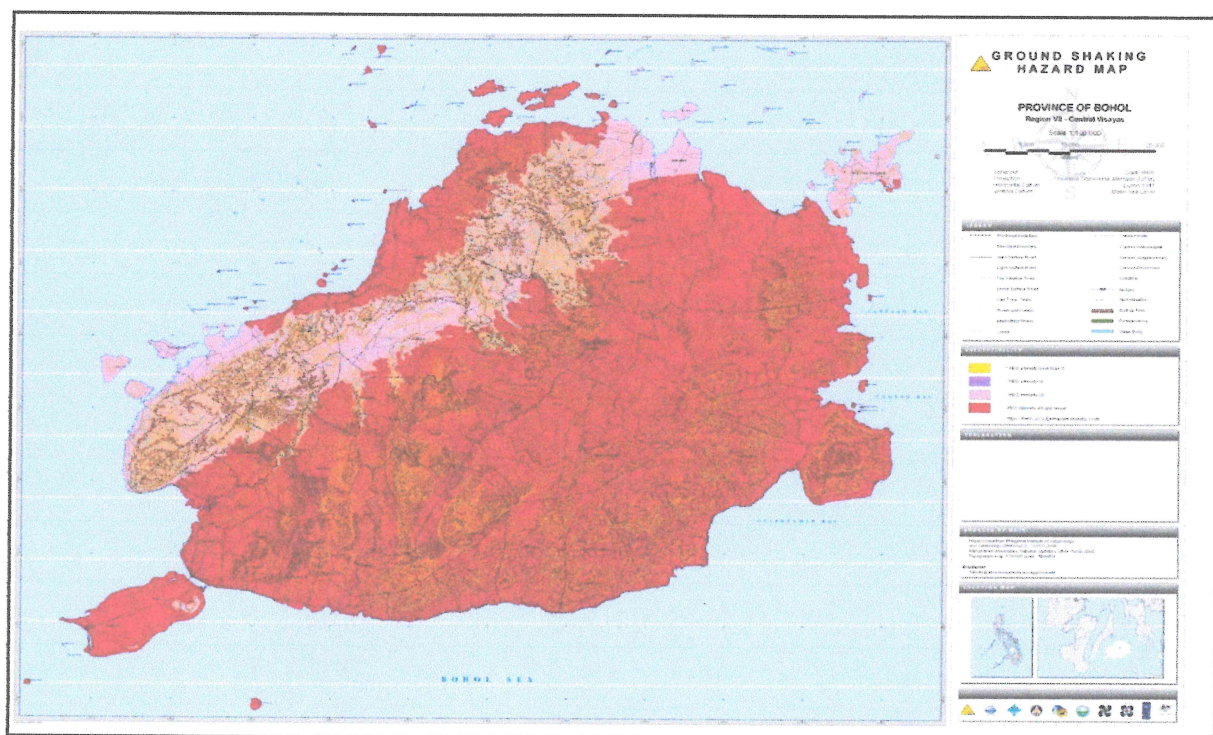
Landslides often accompany the occurrence of earthquakes. The risk and vulnerability assessment report estimates that there are about 215 barangays which are highly susceptible to earthquake-induced landslides; while 733 barangays have medium susceptibility and 887 barangay have low susceptibility.



The detailed data tables and matrices of the risk and vulnerability assessment report of Bohol Province can be found in **Annex B**.

Prior to the October 15, 2013 7.2M earthquake, Bohol Province has a complete repository of hazard maps to include soil erosion map, storm surge hazard map, tsunami hazard map, rain-induced landslide hazard maps, liquefaction maps, ground rupture, earthquake-induced landslide hazard map and the ground-shaking map. These Hazard Maps were acquired from the Hazards Mapping and Assessment for Effective Community-Based Disaster Risk Management (**READY**) Project through the Philippine Institute of Volcanology and Seismology (PhIVolcS). The PDPFP, Volume one, from 30 – 33 shows a number of hazards maps. These maps can be viewed and downloaded at <http://www.ppdobohol.lgu.ph/maps/hazard-maps/>

It is obvious that these hazard maps need updating and revising, especially after the October 15, 2013 “Great Bohol Earthquake.” Figure 1 below, which is the ground-shaking map, shows the opposite of what happened during the October 15, 2013 7.2M earthquake where the lighter-shaded area in the ground shaking hazard map were the areas badly hit by the 7.2Ms earthquake. At present the PhIVolcS is currently updating these maps.



**Figure 1** Ground-Sharing Hazard Map<sup>6</sup>

<sup>6</sup> These Hazard Maps were acquired from the Hazards Mapping and Assessment for Effective Community-Based Disaster Risk Management (**READY**) Project through the Philippine Institute of Volcanology and Seismology (PhIVolcS).

## Assessment of Natural and Man-Made Hazards

Hazards that have occurred in Bohol Province over the years: (a) natural, such as earthquake, typhoons/storms, flooding, landslides, storm surges, tsunami, sink holes, subsidence, tornado, drought or El Niño phenomenon, and lighting; and (b) man-made hazards food poisoning, wars or armed conflicts, red tide, fires (land or sea-based) oil-spill, and collision / vehicular accidents and just recently, armed conflict with the Abu Sayyaf elements.

These natural and man-made hazards were rated by workshop participants in terms of risks (likelihood of occurrence) and vulnerability (susceptibility and capacity of the community and populace to be adversely affected by the disaster caused by the hazard).

Participants used a color-coded scale from 1 – 4, where one means low and 4 means extremely high. Below is a table that results from the participants' analysis of disaster risks and the vulnerability assessments. The following table below shows the results of the risk analysis and vulnerability assessments made by workshop participants.

**Table 5 Risk Analysis (R) and Vulnerability Assessment (V) of Hazards in Bohol**

| HAZARDS                           | Low<br>(1) |   | Medium<br>(2) |   | High<br>(3) |   | Extremely<br>High<br>(4) |   |
|-----------------------------------|------------|---|---------------|---|-------------|---|--------------------------|---|
|                                   | R          | V | R             | V | R           | V | R                        | V |
| <b>Natural</b>                    |            |   |               |   |             |   |                          |   |
| Earthquake                        |            |   |               |   |             |   |                          |   |
| Typhoon/ Storm                    |            |   |               |   |             |   |                          |   |
| Flooding/ La Nina                 |            |   |               |   |             |   |                          |   |
| Landslide                         |            |   |               |   |             |   |                          |   |
| Storm Surge                       |            |   |               |   |             |   |                          |   |
| Tsunami                           |            |   |               |   |             |   |                          |   |
| Sink Holes                        |            |   |               |   |             |   |                          |   |
| Subsidence                        |            |   |               |   |             |   |                          |   |
| Tornado                           |            |   |               |   |             |   |                          |   |
| Drought / El Niño                 |            |   |               |   |             |   |                          |   |
| Lightning                         |            |   |               |   |             |   |                          |   |
| <b>Man-Made</b>                   |            |   |               |   |             |   |                          |   |
| Food Poisoning                    |            |   |               |   |             |   |                          |   |
| Wars /Armed Conflict              |            |   |               |   |             |   |                          |   |
| Red Tide                          |            |   |               |   |             |   |                          |   |
| Fire (Sea & Land Base)            |            |   |               |   |             |   |                          |   |
| Oil Spill                         |            |   |               |   |             |   |                          |   |
| Collision /Vehicular<br>Accidents |            |   |               |   |             |   |                          |   |



|                |               |  |             |  |                       |  |  |  |  |
|----------------|---------------|--|-------------|--|-----------------------|--|--|--|--|
| Armed Conflict |               |  |             |  |                       |  |  |  |  |
| Low<br>(1)     | Medium<br>(2) |  | High<br>(3) |  | Extremely High<br>(4) |  |  |  |  |

Source: DRRM Planning Workshop Participants' Risk Analysis and Vulnerability Assessment, May 2014

From the above-table it can be seen that Bohol is very high risk and vulnerability to a number of natural hazards. The PDRRMC participants see earthquakes, typhoon / storms, flooding and the La Niña phenomenon, landslides and drought or the El Niño phenomenon have greater risks and likelihood to occur and people and communities are extremely vulnerable and likely to greatly suffer from the effects and magnitude of disasters these hazards can cause. The implications point to the urgent need to put in place short and long terms plans to prevent the disasters, mitigate their effects, put in place preparedness and response measures as well as post-disaster rehabilitation and recovery actions.

## The State of the DRRM of the PLGU

The foremost goal of Republic Act No. 10121 (M 10121), otherwise known as the *Philippine Disaster Risk Reduction and Management (PDRRM) Act of 2010* is to strengthen the country's National DRRM System towards sustainable economic development, by mainstreaming the same in all national and local development processes.

Mainstreaming of DRRM in all these processes principally requires the institutionalization and organization of its structures, in all levels of government nationwide, where local DRRM plans and policies will be developed, and where implementation of actions and measures pertaining to all aspects of DRRM will be initiated.

It is therefore important to assess the state of disaster risk reduction management of local government units. During the May 12 – 14, 2014 LDRRM Planning Workshop, the PDRRMC participants assessed the state of the PLGU's DRRM in terms of strengths and weaknesses, which were further delineated into risks and vulnerabilities.

**A. Strengths of the PLGU in PDRRM** The following are the strengths that the PDRRMC:

- There is some level of available information and data on multi-hazards occurring in the province, as evidenced by
  - ✓ Faults are already identified
  - ✓ Hazard maps available
  - ✓ The actual experience of the 7.2M earthquake in October 15, 2013



- ✓ Partial assessment of quake-related hazards like sink-holes using ground-penetrating radar (GPR) conducted by MGB
- ✓ Presence of hazard profile and disaster risk assessment (DRA) Report for Bohol
- ✓ Active provincial epidemiology surveillance unit (PESU)
- Trainings and awareness-raising activities conducted, such as
  - ✓ Constant DRRM training
  - ✓ High level of awareness on DRRM
  - ✓ Continuous awareness campaign on disaster consciousness
  - ✓ Presence of Visayan/Boholano version of DRR-CCA Training modules
- Presence of quick response actions, tools and equipment as well as early warning devices to include
  - ✓ Tarsier 117
  - ✓ Early warning system advisories
  - ✓ Operational and functional Search and rescue teams
  - ✓ Available HURST tools/ Jaws of Life equipment
- Established organizational structures for DRRM and cooperation networks as can be seen by
  - ✓ Proactive and operational PDRRMC
  - ✓ Strong tie-up/linkages with NGAs, NGOs, I-NGOS
  - ✓ Presence of security forces in strategic areas of the province
  - ✓ Bohol is insurgent-free
  - ✓ PDRRMS's strong communication links with PAG ASA and MLGUs
  - ✓ Active stakeholder participation
  - ✓ Presence of PDRRMC inter-cluster coordination
- Presence of disaster management - related plans such as
  - ✓ El Nino contingency plan
  - ✓ Presence of draft earthquake contingency plan
  - ✓ Presence of post Great Bohol Earthquake Relief, Recovery and Rehabilitation Plan

## **B. Weaknesses of the PLGU in PDRRM:**

### Vulnerability Factors

- ✓ Un-institutionalized DRRM office
- ✓ Majority of MLGUs belong to 4<sup>th</sup> and 5<sup>th</sup> class municipalities; lack resources/funds
- ✓ Not all MLGUs/areas with internet access; thus difficult to communicate
- ✓ Poor capacities of district hospitals to respond to emergencies of bigger magnitudes such as during the 7.2M earthquake
- ✓ There is more need for equipment and tools for disaster preparedness
- ✓ PDRRMO not fully operational to provide information and increase awareness on DRR-CCA down to the “Purok” level
- ✓ PDRRM Plan needs revisiting / updating as this previous document was prepared only for compliance purposes and not well grounded on risk analysis and vulnerability assessments
- ✓ Zoning ordinance not strictly followed/implemented thus local communities are building on hazard prone areas like coastlines and mountain slopes
- ✓ Lack of flood control facilities
- ✓ LGUs not so conscious on the impact of tsunamis and storm surges
- ✓ Evacuation centers are not yet established
- ✓ Data capture and reporting template on extent of damage inadequate and not standardized
- ✓ No wastewater treatment facilities/disposal endangering water quality
- ✓ Households are without sanitary latrines threatening water and food safety
- ✓ Lack of fire-fighting facilities
- ✓ Lack of discipline among drivers, especially motorcycles, causing more vehicular accidents and unnecessary deaths

### Risk Factors

- ✓ High risk areas/ flooding area nor properly identified
- ✓ Presence of sink holes
- ✓ Dams dependent on rainfall
- ✓ Typhoon prone
- ✓ Rice fields mostly rain-fed
- ✓ High percentage of contaminated water sources

## **Gaps in PLGU DRRM Capacity**

Capacity gaps of the provincial government as far as disaster risk reduction and management is concerned. Identified gaps are summarized as follows:

- Different sources of data; no /lack centralized database system
- Data inadequacy related to DRRM
- Inadequacy of early warning system
- Not all LDRRMOs are appointed, some are only designates
- Identification of relocation sites
- No planned evacuation areas with affected families converging in any open field with less LGU assistance
- Delayed construction due to unavailable MGB clearance
- Not enough supply of agricultural products
- No clear responsibility in relief distribution/procedure
- Communities were not informed or made aware where to get relief assistance
- Timing, info dissemination and directions for determining route alternatives, especially to facilitate delivery of relief goods
- Bohol is dependent on outside power supply
- Lack of skilled manpower and equipment
- Limited supply of medicines to cater to the large scale disasters
- Delay in the replenishment of medical supplies from Tagbilaran to affected hospitals
- Limited services provided to the constituents due to extent of damage
- Limited DepEd Funds for emergency response, evacuation centers and re-building of school facilities and classroom damaged by earthquakes and other hazards
- Lack of trained search and rescue (SAR) personnel and equipment

## **PLGU DRRM Vision and Mission Statements**

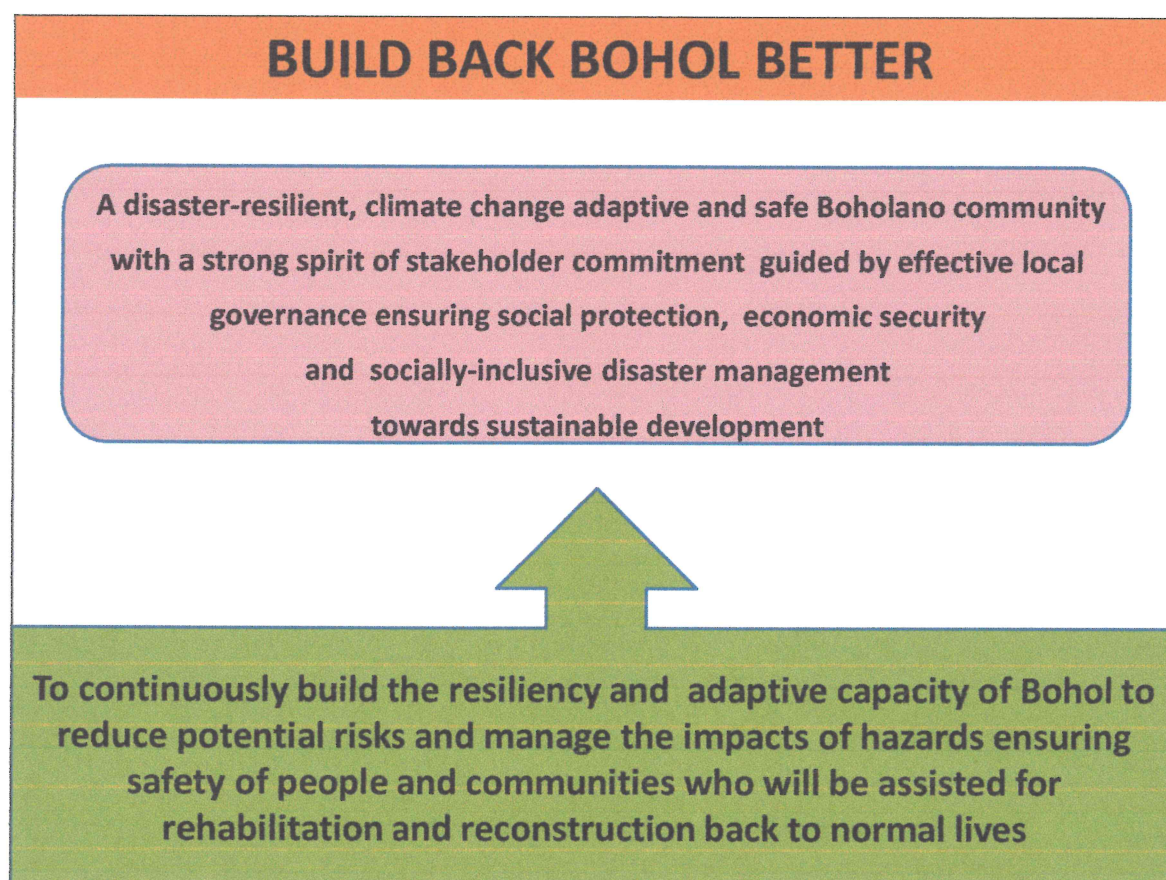
### **Vision**

A disaster-resilient, climate change adaptive and safe Boholano community with a strong spirit of stakeholder commitment guided by effective local governance ensuring social protection, economic security and socially-inclusive disaster management towards sustainable development



## Mission

To continuously build the resiliency and adaptive capacity of Bohol to reduce potential risks and manage the impacts of hazards ensuring safety of people and communities who will be assisted for rehabilitation and reconstruction back to normal lives



**Figure 2 Bohol Disaster Risk Reduction Management Framework**

In summary, the PDRRMC participants during the Local Disaster Risk Reduction Management Planning workshop saw that the key recommendations to attain a vision of building back Bohol better include the following key and basic DRRM reforms:

1. Good, accessible and accurate database system from data capture, to data processing and data storage and retrieval;
2. A legislated, well-supported and financed Provincial Disaster Risk Reduction Management Plan at all level that is monitored and assessed periodically;
3. A functional, financially supported, legislated and well-resourced / staffed Provincial Disaster Risk Reduction Management Office at all levels;

4. Pervasive disaster consciousness, awareness, prevention, preparedness and response institutionalized at the community level and supported by the civil society and private / business sector; and
5. A DRRM Governance Training Center that continually builds capacities of local governments and communities to plan, prevent, mitigate, prepare and effectively respond to disasters and undertake post disaster rehabilitation and recovery actions.

### 3.0 Provincial Disaster Risk Reduction Management (DRRM) Plan

The Provincial Disaster Risk Reduction Management (DRRM) Plan is closely aligned with the National NDRRM Plan. In this regard, the PDRRM Plan just like the NDRRM Plan serves as a road map on how disaster risk reduction and management will contribute to the attainment of sustainable development, build the adaptive capacities of communities, increase the resilience of vulnerable sectors and optimize disaster mitigation opportunities with the end in view of promoting people's welfare and security towards gender-responsive and rights-based sustainable development.<sup>7</sup>

#### Provincial DRRM Plan Components

There are four (4) thematic areas or components of the Provincial Disaster Risk Reduction Management Plan. Each thematic area or component is briefly below<sup>8</sup> as follows

1. **Disaster Prevention and Mitigation** This component provides key strategic actions that give importance to activities revolving around hazards evaluation and mitigation, vulnerability analyses, identification of hazard-prone areas and mainstreaming DRRM into development plans. It is based on sound and scientific analysis of the different underlying factors which contribute to the vulnerability of the people and eventually, their risks and exposure to hazards and disasters.
2. **Disaster Preparedness** This component pertains to the key strategic actions that give importance to activities revolving around community awareness and understanding; contingency planning; conduct of local drills and the development of a national disaster response plan. Risk-related information coming from the prevention and mitigation aspect is necessary in order for the preparedness activities to be responsive to the needs of the people and situation on the ground. Also, the policies, budget and institutional mechanisms established under the prevention and mitigation priority area will be further enhanced through capacity building activities, development of coordination mechanisms. Through these, coordination, complementation and interoperability of work in DRRM operations and essential services will be ensured. Behavioral change created by the preparedness aspect is eventually measured by how well people responded to the disasters. At the frontlines of preparedness are the local government units, local chief executives and communities.

---

<sup>7</sup> National Disaster Risk Reduction Management Plan (NDRRMP).

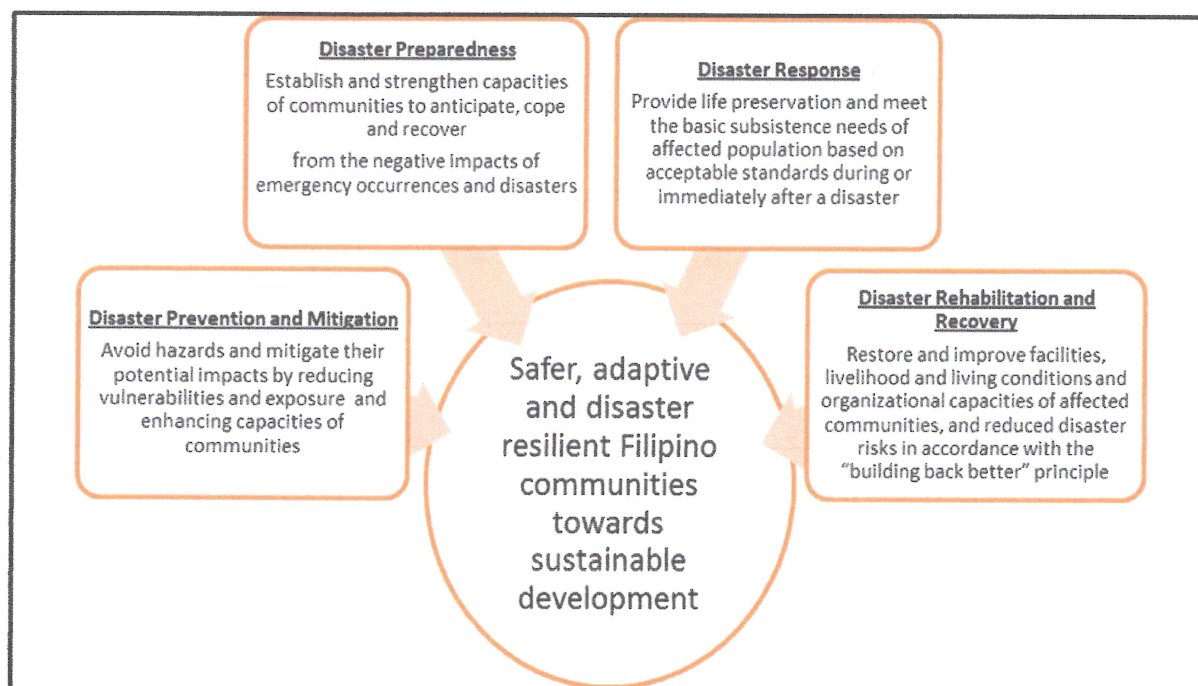
<sup>8</sup> National Disaster Risk Reduction Management Plan, p7



3. **Disaster Response** This component gives importance to activities during the actual disaster response operations from needs assessment to search and rescue to relief operations to early recovery activities are emphasized. The success and realization of this priority area rely heavily on the completion of the activities under both the prevention and mitigation and preparedness aspects, including among others the coordination and communication mechanisms to be developed. On-the-ground partnerships and the vertical and horizontal coordination work between and among key stakeholders will contribute to successful disaster response operations and its smooth transition towards early and long term recovery work.
4. **Disaster Rehabilitation and Recovery** This component covers areas like employment and livelihoods, infrastructure and lifeline facilities, housing and resettlement, among others. These are recovery efforts done when people are already outside of the evacuation centers.

These priority areas are not autonomous from the other nor do they have clear start and end points. The 4 priority areas are NOT seen as a mere cycle which starts in prevention and mitigation and ends in rehabilitation and recovery. The best way to describe the four thematic areas is that they -

- a) Mutually reinforce each other and are interoperable.
- b) DO NOT, SHOULD NOT and CANNOT stand alone.
- c) Have no clear starting nor ending points between each of the aspects and overlaps are to be expected.
- d) Are problem-needs and asset-strengths centered.
- e) All point to one direction - reduce people's vulnerabilities and increasing their capacities.



**Figure 3 Four Mutually-Reinforcing Thematic Areas of the PDRRRM Plan**

## Provincial DRRM Goals, Objectives, Outcomes and Outputs

The succeeding tables present the Provincial DRRM objectives, outcomes and outputs. Prior to the presentation of the provincial objectives, outcomes and outputs, the national goals and objectives contained in the National Disaster Risk Reduction Management Plan (NDRRMP) are stated to show that the provincial objectives, outcomes and outputs are aligned with the goals and objectives of the National Risk Reduction Management Plan (NDRRMP).

These outputs results from the LDRRM Workshop held May 12- 14, 2014 where participants were grouped into four and worked on each DRRM pillar to include disaster prevention and mitigation, disaster preparedness, disaster response and disaster rehabilitation and recovery.

**Table 6 Objectives, Outcomes and Outputs for Disaster Prevention and Mitigation**

| <b>PILLAR: PREVENTION AND MITIGATION</b> |  |   |
|--|--|---|
| <b>GOAL</b>                              | <b>Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities</b>   |   |
| <b>National Objectives</b>               | <b>Reduce vulnerability and exposure of communities to all hazards</b>   | <b>Enhance capacities of communities to reduce their own risks and cope with the impacts of all hazards</b> |
| <b>Provincial Objectives</b>             | <ul style="list-style-type: none"> <li>• Ensure strict implementation of existing laws &amp; ordinance &amp; other related issuances</li> <li>• Reduce vulnerability &amp; exposure of communities to all hazards</li> <li>• Enhance capacities of communities / DRRM councils to reduce their own risks &amp; cope with the impacts of all hazards.</li> <li>• Increase disaster consciousness and responsibilities of communities.</li> <li>• Establish and institutionalize PDRRM- CCA governance center/ office</li> </ul>   |   |
| <b>Provincial Outcomes</b>               | <ul style="list-style-type: none"> <li>• DRRM compliant and climate change adaptive LGUs and communities</li> <li>• Disaster-resilient roads and infrastructures</li> <li>• Reduced risks and vulnerabilities of people and communities to all hazards</li> <li>• Increased capacities of local communities to reduce and manage risks</li> <li>• Response-ready and capacitated LGUs and DRRM Councils</li> <li>• Green and adaptive agricultural and industrial technologies</li> </ul>  |   |
| <b>Provincial Outputs</b>                | <ul style="list-style-type: none"> <li>• Compliance reports and findings</li> <li>• Approved local ordinance for quality assurance and quality control in building and construction of infrastructures</li> <li>• Draft ordinance for earthquake Trust Fund</li> <li>• Installation of early warning devices and forecasting systems</li> <li>• Risk Analysis and Vulnerability Assessment Reports as basis for production of hazard maps at all levels</li> <li>• Disaster Response Manual</li> <li>• Implemented and Monitored DRRM Plans and functional Office / Committees at all LGU, including <i>Purok</i> level</li> <li>• Evacuation centers and relocation sites well-identified and established</li> <li>• DRRM / CCA Database established and functional</li> <li>• Scaling up use of solar panels, rain water collectors, climate-change resistant seeds, etc.</li> </ul> |   |



**Table 7 Objectives, Outcomes and Outputs for Disaster Preparedness**

| <b>PILLAR: PREPAREDNESS</b>  |  |   |                                       |  |   |
|------------------------------|--|---|---------------------------------------|--|---|
| <b>GOAL</b>                  | <b>Establish and strengthen capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters</b>   |   |                                       |  |   |
| <b>National Objectives</b>   | Increase the level of awareness of the community to the threats and impacts of all hazards, risks and vulnerabilities  | Equip the community with the necessary skills to cope with the negative impacts of a disaster | Increase the capacity of institutions | Develop and implement comprehensive national and local disaster preparedness policies, plans and systems | Strengthen partnership among all key players and stakeholders |
| <b>Provincial Objectives</b> | <ul style="list-style-type: none"> <li>• Ensure strict implementation of existing laws &amp; ordinance &amp; other related issuances</li> <li>• Reduce vulnerability &amp; exposure of communities to all hazards</li> <li>• Enhance capacities of communities / DRRM councils to reduce their own risks &amp; cope with the impacts of all hazards.</li> <li>• Increase disaster consciousness and responsibilities of communities.</li> <li>• Establish and institutionalize PDRRM- CCA governance center/ office</li> </ul>   |   |                                       |  |   |
| <b>Provincial Outcomes</b>   | <ul style="list-style-type: none"> <li>• DRRM compliant and climate change adaptive LGUs and communities</li> <li>• Disaster-resilient roads and infrastructures</li> <li>• Reduced risks and vulnerabilities of people and communities to all hazards</li> <li>• Increased capacities of local communities to reduce and manage risks</li> <li>• Response-ready and capacitated LGUs and DRRM Councils</li> <li>• Green and adaptive agricultural and industrial technologies</li> </ul>  |   |                                       |  |   |
| <b>Provincial Outputs</b>    | <ul style="list-style-type: none"> <li>• Compliance reports and findings</li> <li>• Approved local ordinance for quality assurance and quality control in building and construction of infrastructures</li> <li>• Draft ordinance for earthquake Trust Fund</li> <li>• Installation of early warning devices and forecasting systems</li> <li>• Risk Analysis and Vulnerability Assessment Reports as basis for production of hazard maps at all levels</li> <li>• Disaster Response Manual</li> <li>• Implemented and Monitored DRRM Plans and functional Office / Committees at all LGU, including <i>Purok</i> level</li> <li>• Evacuation centers and relocation sites well-identified and established</li> <li>• DRRM / CCA Database established and functional</li> <li>• Scaling up use of solar panels, rain water collectors, climate-change resistant seeds, etc.</li> </ul> |   |                                       |  |   |

**Table 8 Objectives, Outcomes and Outputs for Disaster Response**

| <b>PILLAR: RESPONSE</b>      |  |   |  |
|------------------------------|--|---|--|
| <b>GOAL</b>                  | <b>Provide life preservation and meet the basic subsistence needs of affected population based on acceptable standards during or immediately after a disaster</b>  |   |  |
| <b>National Objectives</b>   | To decrease the number of preventable deaths and injuries  | To provide basic subsistence needs of affected population | To immediately restore basic social services |
| <b>Provincial Objectives</b> | <ul style="list-style-type: none"> <li>• Deploy SAR teams and security forces to the scene with 8 hours. To conduct rapid damage and needs assessment (DANA) by the LDRRMC.</li> <li>• Conduct immediate relief operation w/in 24 hours (food &amp; non-food items &amp; deployment of WATSAN team.</li> <li>• Provide immediate medical services to disaster victims including psychological first aid</li> <li>• Conduct pre-emptive/ timely evacuation of vulnerable families/ families at risk.</li> </ul>   |   |  |
| <b>Provincial Outcomes</b>   | <ul style="list-style-type: none"> <li>• Zero preventable deaths</li> <li>• Low disabilities secondary to injuries</li> <li>• Crimes prevented</li> <li>• Timely and appropriate responses are provided and immediate relief for the affected families.</li> </ul>   |   |  |
| <b>Provincial Outputs</b>    | <ul style="list-style-type: none"> <li>• Rescue teams deployed, affected persons rescued and retrieved</li> <li>• Data validators/volunteers, medical teams deployed</li> <li>• Volunteers mobilized for relief operations and data gathering /validation / assessment</li> <li>• Relief goods delivered timely and appropriately</li> <li>• Amount of donations generated</li> <li>• Data on Damages accessible to all concerned like, casualties (death, injured, &amp; missing), priority needs</li> <li>• Camp management committees organized</li> <li>• LGU ordinance mandating pre-emptive evacuation of vulnerable families</li> </ul> |   |  |



**Table 9 Objectives, Outcomes and Outputs for Disaster Rehabilitation and Response**

| <b>PILLAR: REHABILITATION AND RECOVERY</b> |  |  |  |   |
|--|--|--|--|---|
| <b>GOAL</b>                                | <b>Restore and improve facilities, livelihood and living conditions and organizational capacities of affected communities, and reduced disaster risks in accordance with the “building back better” principle</b>  |  |  |   |
| <b>National Objectives</b>                 | To restore people’s means of livelihood and continuity of economic activities and business   | To restore shelter and other buildings/ installation | To reconstruct infrastructure and other public utilities | To assist in the physical and psychological rehabilitation of persons who suffered from the effects of disaster |
| <b>Provincial Objectives</b>               | <ul style="list-style-type: none"> <li>Rehabilitate people, means of livelihood &amp; sustain economic activities and business</li> <li>Enhance the skills &amp; capacity on livelihood related activities. To restore install shelter and other vertical structures/ buildings</li> <li>To provide safer location appropriate engineering that can withstand DRR-CCA. To reconstruct infrastructures &amp; other public utilities</li> <li>To provide adequate road network &amp; other infrastructure facilities</li> <li>To provide assistance, physical &amp; psychological depressed persons suffered from effects of disaster</li> </ul>                       |  |  |   |
| <b>Provincial Outcomes</b>                 | <ul style="list-style-type: none"> <li>Stable and economic activities provided. Damages, losses &amp; needs properly assessed &amp; analyzed</li> <li>Shelter/ buildings and living condition back to normal. Houses/ buildings rebuilt or repaired to be more resilient to hazards with safer sites for housing</li> <li>Disaster &amp; climate change resilient infrastructure constructed/ reconstructed &amp; rehabilitated</li> <li>Psychologically safe &amp; secure populace protected from the effects of disasters is able to restore to normal functioning</li> <li>Restored to normal, physical and psychological condition of affected people</li> </ul> |  |  |   |
| <b>Provincial Outputs</b>                  | <ul style="list-style-type: none"> <li>Crops, livestock, fisheries livelihood assistance provided.</li> <li>Number of P.Os member trained/ capacitated. Number of heads of livestock, poultry restocked</li> <li>totally damaged houses constructed; partially damaged houses repaired &amp; restored; classrooms constructed; temporarily learning spaces and schools provided/ installed</li> <li>Post- harvest support facilities established</li> <li>Number of children &amp; adult provided with awareness child protection</li> <li>Number of social workers provided with psychological care training</li> </ul>   |  |  |   |



## **DRRM Priority Plans and Projects**

From these provincial objectives, outcomes and outputs, the following priority plans and activities were formulated by the planning team for each DRRM pillar:

### **A. Disaster Prevention and Mitigation**

- Review and integration of DRRM/CCA policies in LGU policies, plans, budgets
- Draft ordinance re QA/QC of infrastructure projects
- Draft ordinance for earthquake trust fund
- Seminar – workshops and capacity building
- Conduct training on green agriculture
- Conduct risk analysis and vulnerability assessment
- Updating hazard maps
- Installing warning and forecasting system
- Disaster Response Manual
- Designate resettlement sites and evacuation centers
- Construction of core houses in resettlement sites
- Flood control measures
- Promote establishment of CCA/DDRM offices in municipalities and DRRM committees in barangays
- DRRM/CCA database systems

### **B. Disaster Preparedness**

- IEC
- Guides / Protocols for Emergency Response Team per Hazard/Disaster
- Conduct regular and periodic drills and simulation exercises
- Integration of DRRM/CCA in school curricula
- Capacity Building and DRRM skills training
- Establishment of Emergency Response Teams at all levels
- Installation of early warning systems, disaster command, communication centers
- Inventory of existing resources
- Provision of insurance to community disaster volunteer groups
- Continuous research on CCA/DDRM
- Establishment of CCA/DDRM – Governance Academy
- Purchase of CCTV Cameras
- Purchase of emergency rescue equipment, dive gears, gadgets
- Stockpiling of commodities
- Formulation of guidelines for the preparation and distribution of relief goods
- Mass blood letting

- IEC and training on food storage, food preservation, seedling and planting materials
- Creation of PDRRM Office
- DRRM Planning workshops for the entire province and preparation of contingency plans
- Monitoring compliance of RA 10121 and CCA RA 9729 and DRRM/CCA Plan implementation
- Enactment of ordinance for pre-emptive evacuation
- Enforcement of building codes
- Formulation of green technologies
- MOA with business / private sectors and NGOs

#### **C. Disaster Response**

- Activate Incident Command System (ICS)
- Deployment of SAR Teams & Search, Rescue & Retrieval operations
- Deployment of DANA Teams
- Submission of Disaster Report to the PDRRMC
- Repacking of goods
- Deployment of Relief Teams
- Relief goods distribution
- Conduct of coordination meeting
- Conduct of clearing operations
- Deployment of medical teams
- Deployment of psychosocial teams
- Establishment of first aid tents
- Organization of camp management committees
- Establishment of evacuation centers
- Pre-emptive evacuation
- Profiling of displaced families
- Assessment of factors to determine transition to recovery/ rehab phase
- Cloud-seeding

#### **D. Disaster Rehabilitation and Recovery**

- Profiling of displaced families
- Conduct DANA
- Livelihood trainings and projects
- Irrigation canals
- Housing projects
- Relocation sites

- Improvement / renovation of school facilities and procurement of equipment for schools
- skills training for early recovery
- construction and repair of major infrastructures
- Construction/ repair/ rehabilitation of roads, bridges & other vital, infrastructure
- Reconstruction of hospitals, health centers, day care centers Reconstruction of irrigation facilities. Rehabilitation of water
- Acquisition of health equipment Rehabilitation of back canals, dike, drainages, box culvert.
- Repair of flood control facilities
- Trainings/ briefing on stress debriefing

## Provincial Disaster Risk Reduction Management Plan

**Table 10** Indicative DRRM Plan Investment Per Pillar / Component

| DRRM Thematic Area / Pillar          | Indicative Budget Totals (In Million Pesos) |        |        |        |
|--------------------------------------|---|--------|--------|--------|
|                                      | 2017  | 2018   | 2019   | TOTAL  |
| Disaster Prevention and Mitigation   | 2.18M                                       | 37.32M | 29.84M | 69.34  |
| Disaster Preparedness                | 13.05M                                      | 26.64M | 25.48M | 65.17M |
| Disaster Response                    | 14.85M                                      | 11M    | 11M    | 36M    |
| Disaster Rehabilitation and Recovery | 233M  | 957.1M | 1.53M  | 1.19B  |



# Province of Bohol

## Provincial Disaster Risk Reduction Management Plan

### 2017 – 2019

**Table 11 PDRRM Plan for Disaster Prevention and Mitigation**

| PILLAR: PREVENTION AND MITIGATION   |   |   |  |  |     |     |     |      |     |    |     |      |    |  |             |                       |  |                         |
|---|---|---|--|--|-----|-----|-----|------|-----|----|-----|------|----|--|-------------|-----------------------|--|-------------------------|
| GOAL: AVOID HAZARDS AND MITIGATE THEIR POTENTIAL IMPACTS BY REDUCING VULNERABILITIES AND EXPOSURE AND ENHANCING CAPACITIES OF COMMUNITIES |   |   |  |  |     |     |     |      |     |    |     |      |    |  |             |                       |  |                         |
| Objectives  | Outcomes  | Outputs                                     | Activities   | THREE-YEAR TIMELINE AND INDICATIVE BUDGET (IN MILLION PESOS) |     |     |     |      |     |    |     |      |    |  |             | Sources of Funds      | Lead Agency  | Partners/Links Networks |
|   |   |   |  | 2017   |     |     |     | 2018 |     |    |     | 2019 |    |  |             |                       |  |                         |
|   |   |   |  | Q3   | Q4  | Q1  | Q2  | Q3   | Q4  | Q1 | Q2  | Q3   | Q4 |  |             |                       |  |                         |
| Ensure updating of vulnerability and hazard/ risk assessments   | Enhanced awareness of hazards                                       | ID of vulnerability and risks in every town | Conduct of vulnerability and risk assessments providewide  |  | 10T | 10T | 10T | 10T  | 10T |    | 20T | 50T  |    |  | PDRRM Funds | MGB, PHIVOLCS, PDRRMO | PDRRMO, BALDRRMO, DILG, OCD, MGB                                       |                         |
| To ensure projects comply with standards  | Public and private constructions are compliant to the Building Code | Approved Ordinance                          | Conduct workshop for the drafting of Ordinance Re Quality Control & Quality Assurance of Infrastructure Projects (commercial and residential)<br>Note: suggestion to be captured in the draft ord: |  | 15T |     | 20T |      |     |    | 25T |      |    |  | PDRRM Funds | PDRRMO, SP,PEO        | SP, Committee on Infrastructure (lead) PEO, PPDO, PDRRMC (All Members) |                         |

| PILLAR: PREVENTION AND MITIGATION   |                        |                    |   |  |     |      |    |    |    |      |    |    |             |                  |  |                         |
|---|------------------------|--------------------|---|--|-----|------|----|----|----|------|----|----|-------------|------------------|--|-------------------------|
| GOAL: AVOID HAZARDS AND MITIGATE THEIR POTENTIAL IMPACTS BY REDUCING VULNERABILITIES AND EXPOSURE AND ENHANCING CAPACITIES OF COMMUNITIES |                        |                    |   |  |     |      |    |    |    |      |    |    |             |                  |  |                         |
| Objectives  | Outcomes               | Outputs            | Activities  | THREE-YEAR TIMELINE AND INDICATIVE BUDGET (IN MILLION PESOS) |     |      |    |    |    |      |    |    |             | Sources of Funds | Lead Agency  | Partners/Links Networks |
|   |                        |                    |   | 2017   |     | 2018 |    |    |    | 2019 |    |    |             |                  |  |                         |
|   |                        |                    |   | Q3   | Q4  | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4          |                  |  |                         |
|   |                        |                    | Safety<br>Engineer must be designated in every LGU to conduct inspection of construction materials OR Independent Inspector to check & evaluate construction materials DTI to check if construction materials sold in establishments are within standards |  |     |      |    |    |    |      |    |    |             |                  |  |                         |
| Ensure available funds  | Enhance quick response | Approved Ordinance | Draft Ordinance Re Earthquake Trust Fund  |  | 15T |      |    |    |    |      |    |    | PDRRM Funds | PDRRMO, SP       | SP, Committee on Infrastructure & Environment (lead), PDRRMO, PDRRMC (All Members) |                         |



| PILLAR: PREVENTION AND MITIGATION   |   |  |  |  |      |      |      |    |    |      |      |                  |             |                         |                      |  |
|---|---|--|--|--|------|------|------|----|----|------|------|------------------|-------------|-------------------------|----------------------|--|
| GOAL: AVOID HAZARDS AND MITIGATE THEIR POTENTIAL IMPACTS BY REDUCING VULNERABILITIES AND EXPOSURE AND ENHANCING CAPACITIES OF COMMUNITIES |   |  |  |  |      |      |      |    |    |      |      |                  |             |                         |                      |  |
| Objectives  | Outcomes  | Outputs  | Activities   | THREE-YEAR TIMELINE AND INDICATIVE BUDGET (IN MILLION PESOS) |      |      |      |    |    |      |      | Sources of Funds | Lead Agency | Partners/Links Networks |                      |  |
|   |   |  |  | 2017   |      | 2018 |      |    |    | 2019 |      |                  |             |                         |                      |  |
|   |   |  |  | Q3   | Q4   | Q1   | Q2   | Q3 | Q4 | Q1   | Q2   |                  |             |                         | Q3                   | Q4   |
| Enhance capacities of councils/ communities to reduce their own risks and cope with the impacts of all hazards                            | Capacitated PDRMMC/M DRRMCs/BD RRMcs are capacitated,                           | PDRMMC MDRRMcs                                       | Conduct seminar/works hops on geological and meteorological man-made hazards |  | 15T  |      | 20T  |    |    |      | 25T  |                  |             | PDRRM Funds             | PDRRMO               | Tarsier 117 (Lead) MGB, PHIVOLCS PAGASA, PPDO BEMO, PNP, AFP |
|   | Health risks caused by contaminated food/water is minimized                     | 1 Provl. WSP   | Conduct workshop to formulate Water Safety Plan (WSP)                        |  | 20T  |      | 50T  |    |    |      | 100T |                  |             | PDRRM Funds I-NGOs      | PHO, PDRRMO          | PHO (Lead) BEMO, PPDO PDRMMC (All Members)                   |
|   | Communities adopted green agriculture/technologies and implemented CCA measures | Radio Plugging Brochures TV/Social Network Exposures | IEC on Organic Natural & Green Agriculture/Technologies and Sanitation       |  | 100T |      | 150T |    |    |      | 200T | 300T             | 200T        | PDRRMF, DA              | PDRRMO, TARSIER 117, | OPA (Lead) OPV, DA, PHO, BEMO, BFAR                          |
|   | Continued & Strong linkages   | 1 league of municipal engineers                      | Organize & Institutionalize League of  |  | 25T  |      |      |    |    |      |      |                  |             | PDRRMF                  | PEO, PDRRMO,         | MEOs, PICE   |



















| PILLAR: PREVENTION AND MITIGATION   |   |  |   |  |     |      |    |      |    |    |    |      |     |        |   |  |             |                         |
|---|---|--|---|--|-----|------|----|------|----|----|----|------|-----|--------|---|--|-------------|-------------------------|
| GOAL: AVOID HAZARDS AND MITIGATE THEIR POTENTIAL IMPACTS BY REDUCING VULNERABILITIES AND EXPOSURE AND ENHANCING CAPACITIES OF COMMUNITIES |   |  |   |  |     |      |    |      |    |    |    |      |     |        |   |  |             |                         |
| Objectives  | Outcomes  | Outputs  | Activities  | THREE-YEAR TIMELINE AND INDICATIVE BUDGET (IN MILLION PESOS) |     |      |    |      |    |    |    |      |     |        |   | Sources of Funds                               | Lead Agency | Partners/Links Networks |
|   |   |  |   | 2017   |     |      |    | 2018 |    |    |    | 2019 |     |        |   |  |             |                         |
|   |   |  |   | Q3   | Q4  | Q1   | Q2 | Q3   | Q4 | Q1 | Q2 | Q3   | Q4  |        |   |  |             |                         |
|   |   | 100% of the no. of newly appointed personnel           | Provide orientation on DRR-CCA to newly appointed personnel in the PLGU/MLGUs | 20T  |     | 20T  |    | 30T  |    |    |    |      |     |        | PDRRM Funds, OCD Funds  | PDRRMO, DILG, OCD                              |             |                         |
|   |   |  |   |  |     |      |    |      |    |    |    |      |     |        |   |  |             |                         |
| Establish and Institutionalize PDRRM-CCA Governance Center/Office   | Systematic disaster risk reduction management, response, rehabilitation and recovery operations | Approved ordinance PDRRM-CCA Center/Office operational | Draft Ordinance for the creation of PDRRM-CCA Center/Office                   | 20T  | 20T | 20T  |    |      |    |    |    |      |     |        | CCCPOSF,, PDRRMF  | SP (Lead) PDRRMO, DOST, PAGASA,OCD, DILG, CCC, |             |                         |
|   | Accessible DRR-CCA Data   | DRRM-CCA Database System                               | DRRM-CCA Database System Development  |  | 50T | 500T |    |      |    |    |    |      | 50T | PDRRMF | PPDO (Lead), PDRRMO BICTU, BEMO, PEO, PHO, OPSWD DILG, NEDA, MGB, DOST, AFP, PNP, PHIVOLCS, PAGASA, INGOS, NGAS |  |             |                         |





**Table 12**      **PDRRM Plan for Disaster Preparedness**

**PILLAR: DISASTER PREPAREDNESS**

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives   | Outcomes   | Outputs  | Activities   | Indicative Budget (in Million Pesos) |    |      |    |    |    |      |    |      |     |  |  | Source of Funds        | Lead Agency              | Partners / Links / Net-works  |
|--|--|--|--|--------------------------------------|----|------|----|----|----|------|----|------|-----|--|--|------------------------|--------------------------|---|
|  |  |  |  | 2017                                 |    | 2018 |    |    |    | 2019 |    |      |     |  |  |                        |                          |   |
|  |  |  |  | Q3                                   | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3   | Q4  |  |  |                        |                          |   |
| To fully strengthen community awareness on DRR CCA | Communities are fully capacitated and well informed on DRR CCA | Flyers, pamphlets and tarps prepared and produced                          | Preparation/production of DRR CCA materials  | .130                                 |    | .500 |    |    |    |      |    | .500 |     |  |  | DRRM Funds             | PDRRM O EDCom DILG DepEd | MLGU<br>BLGU<br>NGO   |
|  |  | IEC materials distributed  | Distribution of IEC materials on DRR CCA   |                                      |    | .050 |    |    |    |      |    | .050 |     |  |  | PDRRM Funds, ODA funds | PDRRM O EDCom DILG DepEd | MLGU<br>BLGU<br>NGO   |
|  |  | IEC conducted at all levels: Municipal Barangay Purok Schools Stakeholders | Conduct regular awareness of IEC campaign on DRR CCA with regular radio plugging in local radio stations: - Standard Manual of Operation |                                      |    | 1.5  |    |    |    |      |    |      | 1.5 |  |  | PDRRM Funds            | PDRRM O                  | MLGU<br>BLGU<br>Purok<br>Academe<br>NGO,<br>EDCom<br>DILG<br>DepEd,OP<br>SWD,DSWD |

# PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives | Outcome<br>s | Output<br>s                                  | Activities  | Indicative Budget (in Million Pesos) |    |    |    |      |    |    |    |      |    |  |                | Source<br>s of<br>Funds | Lead<br>Agency                                     | Partners<br>/ Links /<br>Net-<br>works |
|------------|--------------|--|---|--------------------------------------|----|----|----|------|----|----|----|------|----|--|----------------|-------------------------|--|--|
|            |              |  |   | 2017                                 |    |    |    | 2018 |    |    |    | 2019 |    |  |                |                         |  |  |
|            |              |  |   | Q3                                   | Q4 | Q1 | Q2 | Q3   | Q4 | Q1 | Q2 | Q3   | Q4 |  |                |                         |  |  |
|            |              |  | - Guide for<br>Emergency<br>Response<br>Team<br>- Family<br>Guide to<br>Action<br>- Distributio<br>n of<br>Goods<br>- Building<br>Code<br>Advocacy<br>- Promotion<br>of Green<br>Technology |                                      |    |    |    |      |    |    |    |      |    |  |                |                         |  |  |
|            |              | IEC<br>conduct<br>ed for<br>Food<br>Security | IEC on<br>Enhanced<br>Food Always<br>in the Home<br>- Organic<br>Natural<br>Backyard<br>and<br>Urban<br>Gardeni<br>ng with<br>Models  |                                      |    |    |    | 200T |    |    |    | 200T |    |  | PDRRM<br>Funds | OPA,<br>OPV             | PHO<br>OPSWD<br>DA<br>DOST<br>BISU<br>MILGU<br>NGO |  |



## PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives | Outcomes | Outputs                               | Activities   | Indicative Budget (in Million Pesos) |     |      |     |     |    |      |    |    |    |  |             | Sources of Funds                     | Lead Agency                           | Partners / Links / Net-works |
|------------|----------|---------------------------------------|--|--------------------------------------|-----|------|-----|-----|----|------|----|----|----|--|-------------|--------------------------------------|---------------------------------------|------------------------------|
|            |          |                                       |  | 2017                                 |     | 2018 |     |     |    | 2019 |    |    |    |  |             |                                      |                                       |                              |
|            |          |                                       |  | Q3                                   | Q4  | Q1   | Q2  | Q3  | Q4 | Q1   | Q2 | Q3 | Q4 |  |             |                                      |                                       |                              |
|            |          |                                       |  |                                      |     |      |     |     |    |      |    |    |    |  |             |                                      |                                       |                              |
|            |          |                                       | - Inland Natural Fishery Production  |                                      |     |      |     |     |    |      |    |    |    |  |             |                                      |                                       |                              |
|            |          |                                       | IEC on Food Preservation<br>- Storage of dried root crops, etc.<br>- Fruit/Vegetable preserves<br>- Fish/ Meat preserves |                                      |     |      |     |     |    |      |    |    |    |  | PDRRM Funds | OPA, OPV                             | PHO, OPSWD, DA, DOST, BISU, MLGU, NGO |                              |
|            |          |                                       | IEC on Storage of Seeds and Planting Materials   |                                      |     |      |     |     |    |      |    |    |    |  | PDRRM Funds | OPA, OPV                             | PHO, DA, DENR, MLGU, NGO              |                              |
|            |          | Manuals, Guidelines readily available | Preparation of the ff Manuals or Guidebook:<br>- Standard Manual of Operations for Operation Centers                     | 10T                                  | 20T |      | 30T | 30T |    |      |    |    |    |  | PDRRM Funds | PDRRM O EDCom DILG DepEd, DSWD OPSWD | MLGU NGO BALDRM O                     |                              |

## PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives | Outcomes | Outputs  | Activities  | Indicative Budget (in Million Pesos) |    |      |    |    |    |      |      |    |    |  |                     | Sources of Funds | Lead Agency | Partners / Links / Net-works |
|------------|----------|--|---|--------------------------------------|----|------|----|----|----|------|------|----|----|--|---------------------|------------------|-------------|------------------------------|
|            |          |  |   | 2017                                 |    | 2018 |    |    |    | 2019 |      |    |    |  |                     |                  |             |                              |
|            |          |  |   | Q3                                   | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2   | Q3 | Q4 |  |                     |                  |             |                              |
|            |          |  | - Guide for Emergency Response Teams (specifying protocols, duties responsibilities)<br>- Family Guide to Action in the vernacular<br>- Distribution of goods |                                      |    |      |    |    |    |      |      |    |    |  |                     |                  |             |                              |
|            |          | DRR CCA activities , etc posted in the website | Posting of DRR CCA activities, press releases, M&E reports, etc. in the PGBh website  |                                      |    |      |    |    |    |      |      |    |    |  | PDRRM O BICTU EdCOM | DILG             |             |                              |
|            |          | Conduct ed drills and simulati                 | Conduct Drills/ Simulation Exercises: - Fire Drills   | .130                                 |    | .130 |    |    |    |      | .130 |    |    |  | DRRM Fund           | Deped CHED NGO   |             |                              |



# PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives   | Outcomes   | Outputs   | Activities  | Indicative Budget (in Million Pesos) |       |      |    |    |    |      |    |    |    |  |                         | Sources of Funds  | Lead Agency | Partners / Links / Net-works |
|--|--|---|---|--------------------------------------|-------|------|----|----|----|------|----|----|----|--|-------------------------|---|-------------|------------------------------|
|  |  |   |   | 2017                                 |       | 2018 |    |    |    | 2019 |    |    |    |  |                         |   |             |                              |
|  |  |   |   | Q3                                   | Q4    | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 |  |                         |   |             |                              |
|  |  | on exercises  | - Dissemination of Fire Safety Precautions<br>- Earthquake Drill<br>- Mass Casualties |                                      |       |      |    |    |    |      |    |    |    |  | AFP<br>PA<br>PHO        |   |             |                              |
|  |  | Increased awareness of students on DRRM CCA                       | Integration of DRR CCA in school curricula, teachers' guides and manuals              |                                      |       |      |    |    |    |      |    |    |    |  | DepEd<br>PDRMO<br>DepEd | MLGU<br>Academe   |             |                              |
| To capacitate communities, and institutions to become disaster resilient and CC adaptive | Strengthened and functional institutions and communities are equipped with necessary | Capability Building Program on DRR/CCA Trainings conducted at all | Conduct of the following Trainings:<br>- Continuous Trainings for TARSIER 117         |                                      | 1.860 | 2.5  |    |    |    |      |    |    |    |  | PDRRM Funds/ MLGU Funds | PDRMO<br>BALDRMO<br>DILG<br>OCD<br>TARSIER<br>PRC<br>OPA<br>OPV<br>MLGU<br>BLGU |             |                              |



# PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives | Outcome<br>s  | Output<br>s   | Activities  | Indicative Budget (in Million Pesos) |    |      |    |    |    |      |    |    |    |  |  | Source<br>s of<br>Funds | Lead<br>Agency | Partners<br>/ Links /<br>Net-<br>works |
|------------|---|---|---|--------------------------------------|----|------|----|----|----|------|----|----|----|--|--|-------------------------|----------------|--|
|            |   |   |   | 2017                                 |    | 2018 |    |    |    | 2019 |    |    |    |  |  |                         |                |  |
|            |   |   |   | Q3                                   | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 |  |  |                         |                |  |
|            |   |   |   |                                      |    |      |    |    |    |      |    |    |    |  |  |                         |                |  |
|            | skills to<br>cope with<br>the<br>impacts of<br>disaster | levels<br>and for:<br>Municipal<br>Barangay<br>Purok<br>Schools<br>Stakeholders | - Emergency<br>Response<br>Team<br>Organized<br>and<br>Trained<br>at all<br>LGU<br>levels<br>- Training<br>for<br>PDRRMC<br>/ MDRRC<br>and<br>BDRRMC<br>- Training<br>for<br>Incident<br>Command<br>System<br>- Capacity<br>Building<br>for<br>Alternative<br>Staple<br>Food and<br>Alternative<br>Medicine |                                      |    |      |    |    |    |      |    |    |    |  |  | NGO                     |                |  |

## PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives | Outcomes | Outputs | Activities  | Indicative Budget (in Million Pesos) |    |      |    |    |    |      |    |    |    |  |  | Source of Funds | Lead Agency | Partners / Links / Net-works |
|------------|----------|---------|---|--------------------------------------|----|------|----|----|----|------|----|----|----|--|--|-----------------|-------------|------------------------------|
|            |          |         |   | 2017                                 |    | 2018 |    |    |    | 2019 |    |    |    |  |  |                 |             |                              |
|            |          |         |   | Q3                                   | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 |  |  |                 |             |                              |
|            |          |         | <ul style="list-style-type: none"><li>- Capability Building to Buffer Food Shortage in case of disaster</li><li>- Training on Food Preservation and Storage Technology</li><li>- Training on Health and Wellness</li><li>- Trainings on Single Rope Technique, High Angle Rescue and First Aid/ CPR</li><li>- Training on</li></ul> |                                      |    |      |    |    |    |      |    |    |    |  |  |                 |             |                              |

# PILAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives | Outcome<br>s | Output<br>s | Activities  | Indicative Budget (in Million Pesos) |    |      |    |    |    |      |    |    |    |  |  | Source<br>s of<br>Funds | Lead<br>Agency | Partners<br>/ Links /<br>Net-<br>works |
|------------|--------------|-------------|---|--------------------------------------|----|------|----|----|----|------|----|----|----|--|--|-------------------------|----------------|--|
|            |              |             |   | 2017                                 |    | 2018 |    |    |    | 2019 |    |    |    |  |  |                         |                |  |
|            |              |             |   | Q3                                   | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 |  |  |                         |                |  |
|            |              |             | Psychoso<br>cial<br>Support<br>and<br>Stress<br>Debriefin<br>g<br>- Training<br>for<br>Municipa<br>l<br>Engineer<br>s on<br>Structura<br>l Design<br>of<br>Buildings<br>- Training<br>on 143<br>Mobilizat<br>ion at<br>the<br>barangay<br>level<br>- Training<br>for<br>Accredite<br>d<br>Communi<br>ty<br>Disaster |                                      |    |      |    |    |    |      |    |    |    |  |  |                         |                |  |



## PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives   | Outcome<br>s  | Output<br>s                              | Activities   | Indicative Budget (in Million Pesos) |    |      |    |    |    |      |    |     |    |  |  | Source<br>s of<br>Funds | Lead<br>Agency   | Partners<br>/ Links /<br>Net-<br>works |
|--|---|--|--|--------------------------------------|----|------|----|----|----|------|----|-----|----|--|--|-------------------------|--|--|
|  |   |  |  | 2017                                 |    | 2018 |    |    |    | 2019 |    |     |    |  |  |                         |  |  |
|  |   |  |  | Q3                                   | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3  | Q4 |  |  |                         |  |  |
|  |   |  | Volunteer<br>rs<br>- Training<br>on<br>Management of<br>Dead<br>and<br>Missing<br>Persons<br>- Training<br>on<br>Damage<br>Assessment<br>Needs<br>Analysis<br>(DANA) |                                      |    |      |    |    |    |      |    |     |    |  |  |                         |  |  |
| To<br>capacitate<br>the MLGUs<br>in<br>emergency<br>response | Strengthen<br>ed<br>emergency<br>response<br>of MLGUs | Teams<br>establi<br>sh<br>ed/<br>created | Establishmen<br>t of the ff. at<br>the M/B<br>LGU:<br>- Emergen<br>cy<br>Response<br>Team<br>- Search<br>and<br>Rescue,<br>Retrieval<br>Team                         |                                      |    | 3.0  |    |    |    |      |    | 3.0 |    |  |  |                         | DRRM<br>Fund<br><br>PDRRM<br>O<br>DILG<br>OCD<br>BFP<br>TARSIER<br>PHO<br>OPA<br><br>MLGU<br>BLGU<br>NGO |  |

# PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives | Outcomes | Outputs | Activities   | Indicative Budget (in Million Pesos) |    |      |    |    |    |      |    |    |    |  |  | Source of Funds | Lead Agency | Partners / Links / Net-works |
|------------|----------|---------|--|--------------------------------------|----|------|----|----|----|------|----|----|----|--|--|-----------------|-------------|------------------------------|
|            |          |         |  | 2017                                 |    | 2018 |    |    |    | 2019 |    |    |    |  |  |                 |             |                              |
|            |          |         |  | Q3                                   | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 |  |  |                 |             |                              |
|            |          |         | <div>- DANA Team</div> <div>- Medical Team</div> <div>- Accredited Community Disaster Volunteers</div> <div>- Information Management Team</div> <div>- TWG on Enhanced Food Security</div> |                                      |    |      |    |    |    |      |    |    |    |  |  |                 |             |                              |



## PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives                      | Outcomes                   | Outputs                       | Activities  | Indicative Budget (in Million Pesos) |      |      |      |    |    |      |      |    |    |  |                               | Sources of Funds                 | Lead Agency    | Partners / Links / Net-works |
|---------------------------------|----------------------------|-------------------------------|---|--------------------------------------|------|------|------|----|----|------|------|----|----|--|-------------------------------|----------------------------------|----------------|------------------------------|
|                                 |                            |                               |   | 2017                                 |      | 2018 |      |    |    | 2019 |      |    |    |  |                               |                                  |                |                              |
|                                 |                            |                               |   | Q3                                   | Q4   | Q1   | Q2   | Q3 | Q4 | Q1   | Q2   | Q3 | Q4 |  |                               |                                  |                |                              |
| To ensure safety of communities | Preserved lives and assets | Systems / centers established | Establishment / installation of the following:<br>- Early Warning System<br>- Disaster Command / Auxiliary Center<br>- Disaster Operations Center<br>- Incident Command System<br>- Evacuation Center |                                      |      | 5.0  |      |    |    |      | 5.0  |    |    |  | PDRRM Fund Donors , ODA Funds | PDRRM O DILG OCD BFP Tarsier PHO | MLGU BLGU      |                              |
|                                 |                            |                               | - Installation of Communication System from Tarsier 117 to all  |                                      | 1.0M |      | 2.0M |    |    |      | 2.0M |    |    |  | PDRRM Funds, ODA Funds        | PDRRM O DILG OCD BFP Tarsier PHO | MLGU BALDRRM O |                              |



## PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives   | Outcomes   | Outputs  | Activities   | Indicative Budget (in Million Pesos) |      |      |      |      |      |    |    |      |    |  |   | Source<br>s of<br>Funds                   | Lead<br>Agency                          | Partners<br>/ Links /<br>Net-<br>works |
|--|--|--|--|--------------------------------------|------|------|------|------|------|----|----|------|----|--|---|---|---|--|
|  |  |  |  | 2017                                 |      |      |      | 2018 |      |    |    | 2019 |    |  |   |   |   |  |
|  |  |  |  | Q3                                   | Q4   | Q1   | Q2   | Q3   | Q4   | Q1 | Q2 | Q3   | Q4 |  |   |   |   |  |
|  |  |  | LGU<br>levels  |                                      |      |      |      |      |      |    |    |      |    |  |   |   |   |  |
|  |  | Integrated<br>operations and<br>essential<br>services<br>ensured   | Conduct an<br>Inventory of<br>existing<br>resources<br>and services                        |                                      |      | 50T  |      |      |      |    |    | 50T  |    |  | PDRRM<br>Funds                          | PDRRM<br>O                                |   |  |
| To provide<br>insurance to<br>Community<br>Disaster<br>Volunteers<br>for Bohol | Ready and<br>available<br>volunteers               | Accredited<br>Volunteer<br>Groups<br>provided<br>with<br>insurance | Provision of<br>Insurance to<br>Accredited<br>Community<br>Disaster<br>Volunteer<br>Groups |                                      |      | 500T |      |      |      |    |    | 500T |    |  | PDRRM<br>Funds                          | PDRRM<br>O<br>MLGU<br>BALDRR<br>MO        | GSIS, Red<br>Cross,<br>OCD,DILG,<br>COA |  |
| To ensure<br>availability<br>of science-<br>based<br>researches                | Available<br>science-<br>based<br>DRRM<br>Database | Research<br>and<br>Studies<br>conducted                            | Continuous<br>Research and<br>Studies on<br>DRR CCA  |                                      | 300T |      | 300T |      | 300T |    |    |      |    |  | PDRRM<br>Funds,<br>ODA<br>Funds,<br>PSF | PDRRM<br>O<br>Research<br>and<br>planning | Academe,<br>DOST,<br>PAGASA             |  |
| Ensure<br>availability<br>of DRRM<br>equipment<br>and tools                    | Enhanced<br>response<br>capacity                   | Disaster<br>Preparedness<br>Equipment<br>and<br>Gadgets            | Purchase of<br>CCTV<br>cameras for<br>Disaster<br>Emergency<br>Monitoring                  | 500T                                 |      |      |      |      |      |    |    |      |    |  | DRRM<br>Funds                           | PDRRM<br>O                                | PNP                                     |  |

# **PILLAR : DISASTER PREPAREDNESS**

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives                              | Outcome<br>s    | Output<br>s   | Activities  | Indicative Budget (in Million Pesos) |      |    |      |      |    |      |      |      |    |  |                               | Source<br>s of<br>Funds | Lead<br>Agency | Partners<br>/ Links /<br>Net-<br>works |
|---|-----------------|---------------|---|--------------------------------------|------|----|------|------|----|------|------|------|----|--|-------------------------------|-------------------------|----------------|--|
|   |                 |               |   | 2017                                 |      |    |      | 2018 |    |      |      | 2019 |    |  |                               |                         |                |  |
|   |                 |               |   | Q3                                   | Q4   | Q1 | Q2   | Q3   | Q4 | Q1   | Q2   | Q3   | Q4 |  |                               |                         |                |  |
|   |                 |               |   |                                      |      |    |      |      |    |      |      |      |    |  |                               |                         |                |  |
|   |                 | purchase<br>d | for Public<br>Safety  |                                      |      |    |      |      |    |      |      |      |    |  |                               |                         |                |  |
|   |                 |               | Purchase of<br>Emergency<br>Rescue<br>Ambulance<br>and All-<br>terrain<br>Rescue/<br>Utility<br>Vehicle         | 2.0M                                 | 5.0M |    |      | 5.0M |    |      |      | 5.0M |    |  | DRRM<br>Fund,<br>ODA<br>Funds | PDRRM<br>O              |                |  |
|   |                 |               | Purchase of<br>Barangay<br>Disaster<br>Emergency<br>Equipment<br>and Kits                                       | 1.0M                                 |      |    |      | 1.0M |    | 1.0M |      |      |    |  | DRRM<br>Funds                 | PDRRM<br>O              |                |  |
|   |                 |               | Purchase of<br>Paraphernalia/<br>Equipment<br>and Gadgets<br>(Generator<br>Sets and<br>Water<br>Purifier, etc.) | .6M                                  |      |    | 2.0M |      |    |      | 2.0M |      |    |  | DRRM<br>Funds                 | PDRRM<br>O              |                |  |
|   |                 |               | Purchase of<br>Diving Gears   |                                      |      |    |      | 1.0M |    |      |      | 1.0M |    |  | DRRM<br>Funds                 | PDRRM<br>O              |                |  |
| To establish<br>warehouse<br>for relief | Relief<br>goods | Wareho<br>use | Construction<br>and<br>operation of   |                                      |      |    | 10M  |      |    |      |      |      |    |  | DRRM<br>Funds<br>and          | OPSWD,<br>PDRRM<br>O    | DSWD,<br>NGOs  |  |



## PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives   | Outcome<br>s                                     | Output<br>s   | Activities                                    | Indicative Budget (in Million Pesos) |     |     |     |      |    |     |     |      |    |  |                 | Source<br>s of<br>Funds | Lead<br>Agency                | Partners<br>/ Links /<br>Net-<br>works |
|--|--|---|---|--------------------------------------|-----|-----|-----|------|----|-----|-----|------|----|--|-----------------|-------------------------|-------------------------------|--|
|  |  |   |   | 2017                                 |     |     |     | 2018 |    |     |     | 2019 |    |  |                 |                         |                               |  |
|  |  |   |   | Q3                                   | Q4  | Q1  | Q2  | Q3   | Q4 | Q1  | Q2  | Q3   | Q4 |  |                 |                         |                               |  |
|  |  |   |   |                                      |     |     |     |      |    |     |     |      |    |  |                 |                         |                               |  |
| goods and other supplies                                   | safely stockpiled                                | constructed   | Warehouse for relief goods                    |                                      |     |     |     |      |    |     |     |      |    |  | other sources   |                         |                               |  |
| Ensure available relief food and non-food items            | Enhanced quick response                          | Food and non-food items are readily available         | Stockpiling of food and non-food items        |                                      | .5M |     | .5M |      |    |     | .5M |      |    |  | DRRM Funds DSWD | PDDRM C OPSWD NFA       | Business Sector               |  |
|  |  | Persons blood-typed                                   | Mass blood typing                             |                                      |     |     |     |      |    |     |     |      |    |  |                 | PRC                     | NGO                           |  |
|  |  | Blood bags donated                                    | Mass blood donation                           |                                      |     |     |     |      |    |     |     |      |    |  |                 | PRC                     | NGO                           |  |
|  |  |   |   |                                      |     |     |     |      |    |     |     |      |    |  |                 |                         |                               |  |
| To develop and implement local policies, plans and systems | Better policies, plans and systems are in-placed | LGUs with approved DRRM CCA Plan and Contingency Plan | Conduct of Planning Workshop on LGU DRRM Plan |                                      |     | .5M |     |      |    |     | .5M |      |    |  | DRRM Fund       | PDDRM O DILG            | MLGU, BALDRRM O, DILG, PDRRMC |  |
|  |  |   |   |                                      |     | .3M |     |      |    | .3M |     |      |    |  | PDRRM O/PDR RMC | PDRRM O PDRRM C         | DILG                          |  |
|  |  |   | Development and conduct of regular review of  |                                      |     |     |     |      |    |     |     |      |    |  |                 |                         |                               |  |



## PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives   | Outcomes   | Outputs   | Activities   | Indicative Budget (in Million Pesos) |    |     |       |      |    |    |    |      |       |  |  | Source of Funds | Lead Agency         | Partners / Links / Net-works                         |
|--|--|---|--|--------------------------------------|----|-----|-------|------|----|----|----|------|-------|--|--|-----------------|---------------------|--|
|  |  |   |  | 2017                                 |    |     |       | 2018 |    |    |    | 2019 |       |  |  |                 |                     |  |
|  |  |   |  | Q3                                   | Q4 | Q1  | Q2    | Q3   | Q4 | Q1 | Q2 | Q3   | Q4    |  |  |                 |                     |  |
|  |  |   | Contingency Plans  |                                      |    | .1M |       |      |    |    |    | .1M  |       |  |  | PDRRM O         | PDRRM O, DILG       | BALDRRM O, DILG                                      |
|  |  | Tracking of LGUs compliance on RA 10121 and CCA RA 9729 | Monitoring and Evaluation of LGUs compliance on RA 10121 and CCA RA 9729           |                                      |    |     |       |      |    |    |    |      |       |  |  |                 |                     |  |
|  |  |   | M&E of DRR CCA Plan Implementation   |                                      |    |     | .050M |      |    |    |    |      | .050M |  |  | PDRRM Funds     | PDRRM O, DILG, PPDO |  |
|  |  | Enactment of Local Policy Development                   | Enactment of Ordinance on Forced or Pre-emptive Evacuation                         |                                      |    |     |       |      |    |    |    |      |       |  |  | SP, PDRRM C     | PDRRM, DILG         |  |
| To forge partnership and cooperation to all stakeholders | Active partnership and cooperation to all stakeholders are established | Guidelines for partners arrangement prepared            | Formulation of coordination mechanisms and guidelines for partnership arrangements |                                      |    |     | .050M |      |    |    |    |      | .050M |  |  | PDRRM Funds     | PDRRM O, PLGU, GO   | DILG, NGO, INGOs, CSCOs, Suppliers, BLCI, BWUI, BMS, |

## PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives  | Outcomes   | Outputs                           | Activities  | Indicative Budget (in Million Pesos) |     |       |      |     |    |       |      |    |     |  |                        | Sources of Funds                               | Lead Agency             | Partners / Links / Net-works |
|---|--|-----------------------------------|---|--------------------------------------|-----|-------|------|-----|----|-------|------|----|-----|--|------------------------|--|-------------------------|------------------------------|
|   |  |                                   |   | 2017                                 |     |       | 2018 |     |    |       | 2019 |    |     |  |                        |  |                         |                              |
|   |  |                                   |   | Q3                                   | Q4  | Q1    | Q2   | Q3  | Q4 | Q1    | Q2   | Q3 | Q4  |  |                        |  |                         |                              |
|   |  |                                   |   |                                      |     |       |      |     |    |       |      |    |     |  |                        | AMHOP, ETC.                                    |                         |                              |
|   |  | MOA/ MOU signed                   | MOA with Private Sectors  |                                      |     |       |      |     |    |       |      |    |     |  | PDRRM O PLGU           | DILG Business Sector PLGU NGOs                 |                         |                              |
| To strengthen psychosocial support and well-being | Early recovery of victims from traumatic experiences | Psychosocial debriefing trainings | Conduct of Capacity Development for Psychosocial/ stress Debriefers of the PGBh                           |                                      | .3M |       |      | .5M |    |       |      |    | .4M |  | PGBh and other sources | PHO, PDRRM O CDDEC, Academe, CSOs, NGOs, INGOS |                         |                              |
| To create directory of DRRM stakeholders          | Facilitated communication and response               | Directory created                 | Create Directory or database of PLGU, MLGUs, BLGUs, NGAs, Civic Organization Key Players and Stakeholders |                                      |     | .050M |      |     |    | .050M |      |    |     |  | PDRRM O                | PDRRM ODILG Tarsier                            | BICTU, PDRRM, OCD, DILG |                              |



## PILLAR : DISASTER PREPAREDNESS

**GOAL:** Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters

| Objectives | Outcome<br>s | Output<br>s | Activities | Indicative Budget (in Million Pesos) |       |        |            |       |     |            |      |      |      |  |  | Source<br>s of<br>Funds | Lead<br>Agency | Partners<br>/ Links /<br>Net-<br>works |
|------------|--------------|-------------|------------|--------------------------------------|-------|--------|------------|-------|-----|------------|------|------|------|--|--|-------------------------|----------------|--|
|            |              |             |            | 2017                                 |       |        |            | 2018  |     |            |      | 2019 |      |  |  |                         |                |  |
|            |              |             |            | Q3                                   | Q4    | Q1     | Q2         | Q3    | Q4  | Q1         | Q2   | Q3   | Q4   |  |  |                         |                |  |
|            |              |             |            |                                      |       |        |            |       |     |            |      |      |      |  |  |                         |                |  |
| TOTALS     |              |             |            | 4.37M                                | 8.98M | 12.68M | 16.43<br>M | 7.73M | .3M | 14.18<br>M | 5.2M | 6.6M | 1.0M |  |  |                         |                |  |



**Table 13 PDRRM Plan for Disaster Response**

| PILLAR : RESPONSE  |  |   |   |   |      |      |    |    |      |    |    |                  |             |                             |   |   |  |   |
|--|--|---|---|---|------|------|----|----|------|----|----|------------------|-------------|-----------------------------|---|---|--|---|
| GOAL: Provide life preservation and meet the basic subsistence needs of affected population based on acceptable standards during or immediately after a disaster |  |   |   |   |      |      |    |    |      |    |    |                  |             |                             |   |   |  |   |
| Objectives   | Outcomes   | Outputs   | Activities  | Three-Year Timeline and Indicative Budget(IN MILLION PESOS) |      |      |    |    |      |    |    | Sources of Funds | Lead Agency | Partners / Links / Networks |   |   |  |   |
|  |  |   |   | 2017  |      | 2018 |    |    | 2019 |    |    |                  |             |                             |   |   |  |   |
|  |  |   |   | Q3  | Q4   | Q1   | Q2 | Q3 | Q4   | Q1 | Q2 |                  |             |                             | Q3  | Q4  |  |   |
| To deploy SAR Teams & Security Forces to the scene within 8 hours  | Zero preventable deaths. Low disabilities secondary injuries. Crimes prevented | Number teams deployed. Number of persons rescued. Number of persons retrieved           | Activate ICS Deployment of SAR Teams & Search, Rescue & Retrieval operations Deployment of DANA Teams Submission of Disaster Report to the PDRRMC | 1M  | 1M   |      |    |    |      |    |    |                  |             |                             | C/M/PDRR M Funds-Quick Response Fund 30%                            | PDRRMC, PDRRMO. OCD   | TARSIER 117, AFP, PNP, BFP, PCG, ACDVs |   |
|  |  |   |   |   |      |      |    |    |      |    |    |                  |             |                             | Donations-Cash and in kind International Humanitarian Organizations |   | OCD, MDRRMC                            |   |
|  |  |   |   |   |      |      |    |    |      |    |    |                  |             |                             |   | PRC, DSWD, OPSWD, AFP, PCG, PAF, CSO, etc. Private sectors (BCCI), etc. |  |   |
| To conduct rapid Damage And Need Assessment (DANA) by the LDRRMC   | Coordinated, integrated system & timely appropriate responses provided &       | DATA ON: -Damages (infra & others) -Casualties (dead, injured, missing) -Priority needs | Repacking of goods Deployment of Relief Teams Relief goods distribution Conduct of coordination meeting   |   | 500T |      |    |    |      |    |    |                  |             |                             | 500T  | PDRRM Funds, donations  | OPSWD, DSWD                            | PDRRMO, DTI, PHO, Hospitals, PRC, TARSIER 117, Bohol Medical Society, CSOs, |

# PILAR : RESPONSE

**GOAL:** Provide life preservation and meet the basic subsistence needs of affected population based on acceptable standards during or immediately after a disaster

| Objectives  | Outcomes   | Outputs   | Activities  | Three-Year Timeline and Indicative Budget(IN MILLION PESOS) |    |    |    |      |    |    |    |      |    |  |  | Sources of Funds | Lead Agency | Partners / Links / Net-works                |
|---|--|---|---|---|----|----|----|------|----|----|----|------|----|--|--|------------------|-------------|---|
|   |  |   |   | 2017  |    |    |    | 2018 |    |    |    | 2019 |    |  |  |                  |             |   |
|   |  |   |   | Q3  | Q4 | Q1 | Q2 | Q3   | Q4 | Q1 | Q2 | Q3   | Q4 |  |  |                  |             |   |
|   | implemented  | Number of data validators/ volunteers   | Conduct of clearing operations  |   |    |    |    |      |    |    |    |      |    |  |  |                  | INGOs, NGOs |   |
| To conduct immediate relief operation within 24 hours (food & non-food items) & deployment of WATSAN Team | Immediate relief provided to affected families. Inventory (list). Masterlist of donors | Number of volunteers mobilized<br>Number of relief goods delivered<br>Number of beneficiaries served<br>-Amount of donations raised | Deployment of medical teams<br>Deployment of psychosocial teams<br>Establishment of first aid tents         | 300T  |    |    |    | 300T |    |    |    | 300T |    |  |  | DRRM Funds       | PHO, PDRRMO | DSWD, Red Cross, Academe, BMS, AMHOP, CEDEC |
| Number of cash/ food for work beneficiaries   | Improved people's spirit/ feelings   | Monitoring reports  | Organization of camp management committees<br>Establishment of evacuation centers<br>Pre-emptive evacuation | 50T   |    |    |    | 200T |    |    |    | 200T |    |  |  | PDRRM Funds      | OPSWD, DSWD | DSWD, OPSWD, Red Cross, NGOs, INGOs         |



# PILLAR : RESPONSE

**GOAL:** Provide life preservation and meet the basic subsistence needs of affected population based on acceptable standards during or immediately after a disaster

| Objectives   | Outcomes   | Outputs   | Activities  | Three-Year Timeline and Indicative Budget(IN MILLION PESOS) |        |    |      |       |    |    |       |      |    |  |  | Sources of Funds       | Lead Agency         | Partners / Links / Net-works      |
|--|--|---|---|---|--------|----|------|-------|----|----|-------|------|----|--|--|------------------------|---------------------|-----------------------------------|
|  |  |   |   | 2017  |        |    |      | 2018  |    |    |       | 2019 |    |  |  |                        |                     |                                   |
|  |  |   |   | Q3  | Q4     | Q1 | Q2   | Q3    | Q4 | Q1 | Q2    | Q3   | Q4 |  |  |                        |                     |                                   |
| To provide immediate medical services to disaster victims including Psychologic al first aid | Help victims surpass mental & psychological trauma | Number of medical teams deployed<br>Number of psycho-social teams deployed<br>Number of first aid tents established | Profiling of displaced families<br>Assessment of factors to determine transition to recovery/ rehab phase |   | 50T    |    |      | 50T   |    |    |       |      |    |  |  | PDRRMO Funds           | OPSWD, DSWD, PDRRMO | INGOs, NGOs, CSOs, CEDEC, Academe |
|  |  |   | Deployment of Psychosocial Debriefing Teams   |   | .2M    |    | .3M  |       |    |    |       |      |    |  |  | PDRRM Funds, ODA funds | OPSWD, DSWD, PDRRMO | INGOs, NGOs, CSOs, CEDEC, Academe |
| To conduct pre-emptive/ timely evacuation of vulnerable families/ families at risk           |  | Number of ECs established.<br>Number of IDPs settled in ECs.<br>Number of camp management committees organized      | Establishment of Evacuation Centers   |   | 12M    |    |      | 10M   |    |    |       | 10M  |    |  |  | PDRRM Funds, ODA funds |                     | NGOs, INGOs, DSWD, CSOs           |
| TOTALS   |  |   |   | 1.35M   | 13.75M |    | .35M | 11.0M | -  | -  | 11.0M | .35M |    |  |  |                        |                     |                                   |



**Table 14 PDRRM Plan for Disaster Rehabilitation and Recovery**

| PILLAR : REHABILITATION AND RECOVERY  |  |  |  |   |    |      |    |    |    |      |    |                  |             |                              |  |                   |   |
|---|--|--|--|---|----|------|----|----|----|------|----|------------------|-------------|------------------------------|--|-------------------|---|
| GOAL:   | Restore and improve facilities, livelihood and living conditions and organizational capacities of affected communities, and reduced disaster risks in accordance with the “building back better” principle |  |  |   |    |      |    |    |    |      |    |                  |             |                              |  |                   |   |
| Objectives  | Outcomes   | Outputs  | Activities   | Three-Year Timeline and Indicative Budget |    |      |    |    |    |      |    | Sources of Funds | Lead Agency | Partners / Links / Net-works |  |                   |   |
|   |  |  |  | 2017                                      |    | 2018 |    |    |    | 2019 |    |                  |             |                              |  |                   |   |
|   |  |  |  | Q3  | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 |                  |             |                              | Q3                                       | Q4                |   |
| To rehabilitate people's means of livelihood & sustain economic activities & business | Stable and economic activities provided  | Standardized template on data gathering<br><br>Crops, livestock, fisheries, livelihood assistance provided | - Conduct of post-disaster damage assessment                         | 300T                                      |    | 200T |    |    |    | 100T |    | 200T             |             |                              | PDRRMO Funds/ Municipal Funds            | PDRRM/ PDANA Team | DSWD, OCD, PHIVOLCS, MGB, UNDP, ILO, DOLE, DTI, OPV, OPSWD, BFAR, BEMO, POS, DA, WORLD FOOD |
| To enhance the skills & capacities on livelihood related activities                   | Damages, losses, & needs properly assessed and analysed  | Number of P.O members trained & capacitated<br><br>Volume of seaweed                                       | Conduct disaster needs assessment (DANA) on capacity of building for | 2M  |    |      | 1M |    |    |      |    | 1M               |             |                              | PDRRM Funds, BFAR, PGBh, DRR Fund, DSWD, | PDRRM/ PDANA Team | BFAR, OPA, ILO, LGUs, DSWD, OPSWD, DEPED, BEMO, OPA,  |

| PILLAR : REHABILITATION AND RECOVERY |  |  |   |   |    |      |    |    |      |    |    |                  |             |                              |    |                  |
|--------------------------------------|--|--|---|---|----|------|----|----|------|----|----|------------------|-------------|------------------------------|----|------------------|
| GOAL:                                | Restore and improve facilities, livelihood and living conditions and organizational capacities of affected communities, and reduced disaster risks in accordance with the “building back better” principle |  |   |   |    |      |    |    |      |    |    |                  |             |                              |    |                  |
| Objectives                           | Outcomes   | Outputs  | Activities  | Three-Year Timeline and Indicative Budget |    |      |    |    |      |    |    | Sources of Funds | Lead Agency | Partners / Links / Net-works |    |                  |
|                                      |  |  |   | 2017                                      |    | 2018 |    |    | 2019 |    |    |                  |             |                              |    |                  |
|                                      |  |  |   | Q3  | Q4 | Q1   | Q2 | Q3 | Q4   | Q1 | Q2 |                  |             |                              | Q3 | Q4               |
|                                      |  | seedlings provided   | LGUs & partners.  |   |    |      |    |    |      |    |    |                  |             | DA, OPSWD                    |    | INGOs, NGOs, DA, |
|                                      |  | Number of heads of livestock, poultry, chicken restocked                 | Seaweeds Production, Mushroom Culture, Bangus Culture in cages, Loom & Basket Weaving |   |    |      |    |    |      |    |    |                  |             |                              |    |                  |
|                                      |  | 35 fishpond operators availed of bangus fingerling                       |   |   |    |      |    |    |      |    |    |                  |             |                              |    |                  |
|                                      |  | Number of basket & loom weaving assistance restored in 9 municipalities. | Bagging of assorted vegetables & fruit trees  |   |    |      |    |    |      |    |    |                  |             |                              |    |                  |
|                                      |  |  | Cash for work program on coconut planting, bamboo planting, and seaweeds, mangrove.   |   |    |      |    |    |      |    |    |                  |             |                              |    |                  |



| PILLAR : REHABILITATION AND RECOVERY |          |  |   |   |    |      |    |    |    |      |    |    |    |                  |             |                              |
|--------------------------------------|----------|--|---|---|----|------|----|----|----|------|----|----|----|------------------|-------------|------------------------------|
| GOAL:                                |          | Restore and improve facilities, livelihood and living conditions and organizational capacities of affected communities, and reduced disaster risks in accordance with the “building back better” principle |   |   |    |      |    |    |    |      |    |    |    |                  |             |                              |
| Objectives                           | Outcomes | Outputs  | Activities  | Three-Year Timeline and Indicative Budget |    |      |    |    |    |      |    |    |    | Sources of Funds | Lead Agency | Partners / Links / Net-works |
|                                      |          |  |   | 2017                                      |    | 2018 |    |    |    | 2019 |    |    |    |                  |             |                              |
|                                      |          |  |   | Q3  | Q4 | Q1   | Q2 | Q3 | Q4 | Q1   | Q2 | Q3 | Q4 |                  |             |                              |
|                                      |          |  | Cash for work program on the Irrigation Canals.                       |   |    |      |    |    |    |      |    |    |    |                  |             |                              |
|                                      |          |  | Cash for work activities (emergency assistance to disaster survivors) |   |    |      |    |    |    |      |    |    |    |                  |             |                              |
|                                      |          |  | Crops, livestock & other agri-support facilities                      |   |    |      |    |    |    |      |    |    |    |                  |             |                              |
|                                      |          |  | Rehab of markets & slaughter houses in 10 municipalities.             |   |    |      |    |    |    |      |    |    |    |                  |             |                              |









| PILLAR : REHABILITATION AND RECOVERY   |  |  |  |   |    |      |    |     |    |      |    |                  |                  |  |    |    |
|--|--|--|--|---|----|------|----|-----|----|------|----|------------------|------------------|--|----|----|
| GOAL: Restore and improve facilities, livelihood and living conditions and organizational capacities of affected communities, and reduced disaster risks in accordance with the “building back better” principle |  |  |  |   |    |      |    |     |    |      |    |                  |                  |  |    |    |
| Objectives   | Outcomes   | Outputs  | Activities   | Three-Year Timeline and Indicative Budget |    |      |    |     |    |      |    | Sources of Funds | Lead Agency      | Partners / Links / Net-works   |    |    |
|  |  |  |  | 2017                                      |    | 2018 |    |     |    | 2019 |    |                  |                  |  |    |    |
|  |  |  |  | Q3  | Q4 | Q1   | Q2 | Q3  | Q4 | Q1   | Q2 |                  |                  |  | Q3 | Q4 |
|  |  | Number of Irrigation facilities rehabilitated  |  |   |    |      |    |     |    |      |    |                  |                  |  |    |    |
|  |  |  |  |   |    |      |    |     |    |      |    |                  |                  |  |    |    |
| To provide adequate road network & other infrastructure facilities   | Passable & usable public utilities.  | Number of canals, dike, drainage rehabilitated   | Reconstruction, rehabilitation of dikes, canals, water facilities, flood control systems | 10M                                       |    | 100M |    | 50M |    | 300M | 4M |                  | DPWH, PEO, DPWH  | PICE, UAP, WHO, UNICEF   |    |    |
|  |  | Number of flood control facilities repaired  |  |   |    |      |    |     |    |      |    |                  |                  |  |    |    |
|  |  |  |  |   |    |      |    |     |    |      |    |                  |                  |  |    |    |
| To provide to physical & psychological depressed persons suffered from the effects of disaster   | Psychologically safe & secure populace protected from the effects of disaster is able to restore to normal | Number of children & adult provided with awareness & child protection. Number of social workers provided with psychological care training. | Conduct of psychosocial debriefing activities  | 1M  |    |      |    | 1M  |    | 1M   |    |                  | DOH, DSWD, OPSWD | PHO, RHU, WHO, UNICEF, MHO, OPSWD/DSWD, PMO, UNICEF, PNP, CFSI, Save the |    |    |

| PILLAR : REHABILITATION AND RECOVERY   |  |   |            |   |    |      |     |       |       |      |       |    |    |                  |                               |                              |
|--|--|---|------------|---|----|------|-----|-------|-------|------|-------|----|----|------------------|-------------------------------|------------------------------|
| GOAL: Restore and improve facilities, livelihood and living conditions and organizational capacities of affected communities, and reduced disaster risks in accordance with the “building back better” principle |  |   |            |   |    |      |     |       |       |      |       |    |    |                  |                               |                              |
| Objectives   | Outcomes   | Outputs   | Activities | Three-Year Timeline and Indicative Budget |    |      |     |       |       |      |       |    |    | Sources of Funds | Lead Agency                   | Partners / Links / Net-works |
|  |  |   |            | 2017                                      |    | 2018 |     |       |       | 2019 |       |    |    |                  |                               |                              |
|  |  |   |            | Q3  | Q4 | Q1   | Q2  | Q3    | Q4    | Q1   | Q2    | Q3 | Q4 |                  |                               |                              |
|  | functioning Restored to normal physical & psychological condition of affected people | Psychosocial intervention trainings & care provided |            |   |    |      |     |       |       |      |       |    |    |                  | Children, DepeEd, AFP, PAGCOR |                              |
| TOTAL  |  |   |            | 233.3M                                    |    | 800M | 16M | 51.0M | 90.0M | 1.3M | 1.23M | -  | -  |                  |                               |                              |



## 4.0 SUMMARY OF INDICATIVE BUDGET

### PDRRM PLAN 2017-2019

| PILLAR                               | 3 <sup>RD</sup><br>QUARTER<br>2017 | 4 <sup>TH</sup><br>QUARTER<br>2017 | 1 <sup>ST</sup><br>QUARTER<br>2018 | 2 <sup>ND</sup><br>QUARTER<br>2018 | 3 <sup>RD</sup><br>QUARTER<br>2018 | 4 <sup>TH</sup><br>QUARTER<br>2018 | 1 <sup>ST</sup><br>QUARTER<br>2019 | 2 <sup>ND</sup><br>QUARTER<br>2019 | 3 <sup>RD</sup><br>QUARTER<br>2019 | 4 <sup>TH</sup><br>QUARTER<br>2019 | TOTAL            |
|--------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------|
| Disaster Prevention and Mitigation   | .140M                              | 2.04M                              | 1.95M                              | 32.52M                             | .79M                               | 2.06M                              |                                    | 3.39M                              | 15.8M                              | 10.65M                             | 69.34M           |
| Disaster Preparedness                | 4.37M                              | 8.68M                              | 12.68M                             | 6.43M                              | 7.23M                              | .3M                                | 14.18M                             | 4.6M                               | 6.2M                               | 1.0M                               | 65.67M           |
| Disaster Response                    | 1.35M                              | 13.55M                             |                                    | .05M                               | 11.0M                              | -                                  | -                                  | 11.0M                              | .05M                               |                                    | 37M              |
| Disaster Recovery and Rehabilitation | 233.3M                             |                                    | 800M                               | 16M                                | 51.0M                              | 90.0M                              | 1.3M                               | 1.23M                              | -                                  | -                                  | 1,192.83B        |
| <b>TOTAL</b>                         | <b>239.16M</b>                     | <b>24.27M</b>                      | <b>814.63M</b>                     | <b>55M</b>                         | <b>70.02M</b>                      | <b>92.36M</b>                      | <b>15.48M</b>                      | <b>20.22M</b>                      | <b>22.05M</b>                      | <b>11.65M</b>                      | <b>1,364.84B</b> |

## 5.0 PDRRM Plan Monitoring and Evaluation

Feedback mechanisms are important aspects of gauging performance targets and learning from our experiences on the ground. The NDRRMP, being a long plan which transcends various administrations and leaderships, need to be constantly looked into in terms of its relevance and impact on the changing situations on the ground.<sup>9</sup>

The NDRRM Plan further suggests that -

1. Monitoring and evaluation are essential components of results-based programming in DRRM as these will ensure that the plan's on-time implementation and that learnings from past experiences become input to the plan altogether. Also, through monitoring and evaluation activities, appropriate and needed revisions and/or changes can be identified, from the identified activities to the implementation mechanisms, in case more appropriate ones are realized.
2. These will be led by the Office of Civil Defence, in close coordination with the four vice chairpersons of the NDRRMC by focusing on relevance, effectiveness, efficiency, impact and sustainability. A standard monitoring and evaluation template will be developed by the OCD together with the members of the Technical Management Group.
3. Primarily, monitoring and evaluation will be based on the indicators, targets and activities identified in each of the four priority areas on DRRM. The indicators set in the NDRRMP will be applicable to both the national and local levels. The national level targets will be monitored by the lead and implementing agencies, in close coordination with the regional and local DRRM councils. Each lead agency will in turn submit reports to the respective vice chairperson of the NDRRMC in charge of the specific priority area.
4. The local level targets will be operationalized depending on the needs and situation on the LGU. These will be captured in the respective local DRRM plans which the LGUs need to develop through their respective local DRRM offices and councils. Customization of the targets will depend on the risk assessments and analysis done in their respective local areas. The local DRRM plan will be mainstreamed into the CDP and CLUP and will form part of the LGU mandated plans.
5. Monitoring and evaluation will also include an audit report on the use and status of the National DRRM Fund and how the said fund contributed to the attainment of the NDRRMP.

The Provincial Government of Bohol has an institutionalized Provincial Monitoring and Evaluation System (ProMES) that will be used in the conduct of M&E for the PDRRM Plan.

---

<sup>9</sup> NDRMM Plan, p35



LDRRM Planning participants agreed to periodically and regularly monitor outputs, tracking accomplishments vis-à-vis targets, and outcomes, which are significant changes in people's knowledge, skills and attitudes as well as transformations at the institutional and community level.

## Monitoring and Evaluation Framework

The following table was agreed upon by LDRRM Planning Workshop participants as the M&E Framework of the Bohol PDRRM Plan:

**Table 15 PDRRM Plan Monitoring and Evaluation Framework**

| Areas   | Description   |
|---|---|
| <b>What are to be monitored:</b>                    | <ul style="list-style-type: none"> <li>• Kinds and types of plans, programs and activities</li> <li>• Targets versus accomplishments</li> <li>• Performance indicators</li> <li>• Fund utilization</li> <li>• Status of implementation whether ongoing, completed or spent / expended / disbursed or paid and not just earmarked</li> <li>• Percentage of accomplishments, both physical and financial</li> <li>• Facilitation factors</li> <li>• Hindering factors</li> <li>• Level of PLGU and stakeholder support and cooperation</li> </ul> |
| <b>Who will monitor?</b>                            | <ol style="list-style-type: none"> <li>1. Provincial Monitoring and Evaluation Team (ProMES) led by the Project Development and Monitoring Unit (PDMU) of the Provincial Planning and Development Office (PPDO)</li> <li>2. Administrative and Training Office of the PDRRMO (per Executive Order by the Governor)</li> <li>3. Representative from the PDRRMO per Memorandum Order by the Governor</li> <li>4. Head of the PDRRM Office</li> <li>5. Civil Society and Private Sector representatives</li> </ol>                                 |
| <b>How often is Monitoring and Evaluation done?</b> | <ul style="list-style-type: none"> <li>• Implementing offices conduct monthly progress monitoring of activities where their offices are the implementers</li> <li>• Quarterly performance monitoring</li> <li>• Semi-annual monitoring report</li> <li>• Annual assessment and evaluation</li> </ul>  |

| Areas   | Description   |
|---|---|
| <b>How will monitoring data and information be shared?</b>                                    | <ul style="list-style-type: none"> <li>• Prescribed monitoring templates will be used by implementing offices / departments</li> <li>• ProMES monitoring templates will also be used, especially for quarterly, semi-annual and annual reporting for easy consolidation by the PDMU-PPDO</li> <li>• Hard and soft copies of monitoring and evaluation reports</li> </ul>  |
| <b>To whom will monitoring data be reported or shared?<br/>Who are the users of the data?</b> | <ul style="list-style-type: none"> <li>a) Provincial Governor</li> <li>b) Provincial Vice-Governor</li> <li>c) Sangguniang Panlalawigan</li> <li>d) Provincial Disaster Risk Reduction Management Council</li> <li>e) Management Executive Board (MEB)</li> <li>f) Office of Civil Defense (OCD)</li> <li>g) Provincial Development Council (PDC)</li> <li>h) General Public and Stakeholders</li> </ul>                      |
| <b>How and in what form will monitoring data be reported or shared?</b>                       | <ul style="list-style-type: none"> <li>• Printed and hard copies of monthly, quarterly, semi-annual and annual report</li> <li>• Electronic files posted in the PGBh website for web-based and online reporting and feedback</li> <li>• Film shows and video clips through the Effective Development Communication (EDCom) Office</li> <li>• Photo files and photo clips</li> <li>• Activity documentation reports</li> </ul> |

## Monitoring and Evaluation Template

Workshop participants agreed that the following monitoring template will be used for the quarterly, semi-annual and annual monitoring and evaluation report.

**Table 16 PDRRM Plan Monitoring and Evaluation Template**

| Activity | Targets<br>(Performance Indicators) | Actual Accomplishments<br>(Actual vs Targets)<br>In % |           | Facilitating Factors | Hindering Factors |
|----------|-------------------------------------|---|-----------|----------------------|-------------------|
|          |                                     | Physical  | Financial |                      |                   |
|          |                                     |   |           |                      |                   |
|          |                                     |   |           |                      |                   |
|          |                                     |   |           |                      |                   |
|          |                                     |   |           |                      |                   |
|          |                                     |   |           |                      |                   |
|          |                                     |   |           |                      |                   |
|          |                                     |   |           |                      |                   |



## 6.0 PDRRM Plan Sustainability and Communication Plan

### Sustainability Plan

The planning process is just the preparation of the LDRRM Plan. More needs to be done after the planning workshop to ensure plan sustainability. A Sustainability Plan aims to continue what has been started. Sustainability generally includes

- ✓ Institutionalization by legislation
- ✓ Increasing ownership by funding from own-sourced funds
- ✓ Providing permanent implementation arrangements and administrative support (people, offices, budgets, etc.)

Table 18 below summarizes the Sustainability Plan agreed by stakeholders:

**Table 17 Sustainability Plan of the PDRRM Plan**

| Sustainability Plan  |   |
|--|---|
| Policy Support   | Implementation Arrangements   |
| <ul style="list-style-type: none"> <li>An order institutionalizing PDRRM-CCA CTR/ OFFICE</li> </ul>  | <ul style="list-style-type: none"> <li>Adoption of IRRs for measures passed.</li> </ul>   |
| <ul style="list-style-type: none"> <li>Resolution authorizing the governor to enter into MOA with private sectors for availability of foods/ services in times of calamity/ crisis.</li> </ul>   | <ul style="list-style-type: none"> <li>Appropriate structure within the PDRRMO recommending the 4 pillars with separate in-house monitoring officer.</li> <li>Network/ collaborate with private, business, civil society, NGA, International donors, humanitarian agency &amp; other key players.</li> <li>PDRRMC secretariat- OPSWD</li> <li>PDC secretariat- PPDO</li> <li>Sangguniang Panlalawigan.</li> </ul> |
| <ul style="list-style-type: none"> <li>Resolution penalizing the private sector/ establishment for refusal to provide goods/ services in the times of calamity.</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>Ordinance creating an earthquake trust fund.</li> </ul>   |   |
| <ul style="list-style-type: none"> <li>Ordinance creating quality control assurance system ensuring compliance with construction standards or building code.</li> <li>PDRRMC resolution approving the DRRM/ CCA plan.</li> <li>PDC resolution approving the DRRM/ CCA plan</li> <li>SP resolution adopting the plan.</li> <li>Ordinance creating the PDRRMO</li> </ul> | <ul style="list-style-type: none"> <li>A functional and operational Provincial Disaster Risk Reduction Management Office (PDRRMO) who will provide the steering structure to implement the Plan.</li> </ul>   |

## Communication Plan

Plans need to be communicated and shared to stakeholders to ensure their continuance and sustainability. This is to disseminate information to stakeholders about the plan and in the process generate “buy-in” from all sectors. The PDRRM Plan needs to be “owned” by Boholano leaders and communities to ensure its successful implementation. A plan that is known, understood, appreciated / valued will most likely generate more participation in its implementation.

- A plan to disseminate information about the Plan
- Generate “buy-in” from all sectors and stakeholders
- Intended to increase “ownership” of the Plan
- A plan that is known, understood, appreciated / valued will most likely generate more participation in its implementation

**Table 18 PDRRM Communication Plan**

| Key Messages to be Communicated to Stakeholders for “buy-in” on the DRRM Plan  | Communicators or Message Senders   | Audience and Message Users   | Communication Media, Channels and Approaches   |
|--|--|--|--|
| <ul style="list-style-type: none"> <li>• Prevention and mitigation action plan, 2014-2016.</li> </ul>  | <ul style="list-style-type: none"> <li>• PDRRMC, MDRRMCs, BDRRMCs</li> </ul>   | <ul style="list-style-type: none"> <li>• Communities</li> <li>• Students</li> <li>• General Populace</li> <li>• Tourists</li> <li>• Business Sectors</li> </ul>                    | <ul style="list-style-type: none"> <li>• Social networks</li> <li>• SMS</li> <li>• Radio</li> <li>• Television</li> </ul>  |
| <ul style="list-style-type: none"> <li>• Policies/ordinance/resolutions</li> <li>• Habang may buhay may pag-asa.</li> <li>• Be PREPARED! “LAGING HANDA”</li> <li>• “PANGANDAM KALUWASAN MATAGAMTAM”</li> </ul> | <ul style="list-style-type: none"> <li>• Teachers</li> <li>• PDRRMO to lead in cascading the plan to the local level.</li> <li>• PDRRMC Council</li> </ul> | <ul style="list-style-type: none"> <li>• PDRRMC, PDC, B-LGU, LFC, SP, Stakeholders, Partners</li> <li>• Communities MLGU/BLGU/ Purok, Schools &amp; other stakeholders.</li> </ul> | <ul style="list-style-type: none"> <li>• Barangay assemblies</li> <li>• Tarps</li> <li>• Posters</li> <li>• Sunday church bulletins</li> <li>• Newspaper</li> <li>• Magazines</li> <li>• Leaflets / brochure dissemination</li> <li>• Download thru Provincial website.</li> </ul> |



| Key Messages to be Communicated to Stakeholders for “buy-in” on the DRRM Plan | Communicators or Message Senders | Audience and Message Users | Communication Media, Channels and Approaches   |
|---|----------------------------------|----------------------------|--|
|   |                                  |                            | <ul style="list-style-type: none"> <li>• EDCOM to publish in local capitol bulletin.</li> <li>• Radio broadcast (Kita ug ang Gobernador, DYRD, kapihan sa PIA)</li> <li>• Radio plugging, local newspapers, IEC materials, billboards, tarpaulin.</li> </ul> |

### Annex A

#### Matrix for Past Rainfall-Induced Landslide Events

| DESCRIPTION   | POPULATION/AREAS<br>AFFECTED   | IMPACTS  |
|---|--|--|
| July 31, 2011<br>Localized landslide in<br>old limestone quarry   | Brgy. Lincod, Maribojoc, Bohol<br>(N9°43'42.0", E123°52'17.8")                           | 1 family and 6 persons<br>affected 2 dead, 4 injured;<br>P600,000.00 damaged<br>private and commercial<br>properties |
| March 16, 2011 @ 3:30 p.m.<br>Landslide/Slope failure,<br>underlain by porous,<br>cavernous, coralline limestone      | Sitio Ilaya, Brgy. Bugang Sur,<br>Bilar, Bohol; 1 partially<br>damaged house             | Damaged road but no<br>available data on cost  |
| March 2011<br>Landslide/Slope failure   | Brgy. Can-ipol, Jagna, Bohol   | Damaged road but no<br>available data on cost  |
| March 2011<br>Localized Slope failure<br>underlain by weathered<br>mudstone & limestone                               | So. Katiwian, Brgy. Calabacita,<br>Jagna, Bohol  | Damaged road but no<br>available data on cost  |
| March 2011<br>Road Slip/Subsidence, tension<br>cracks along 200-m road<br>length                                      | Purok Caimito, Brgy.<br>Cawayanan, Tubigon, Bohol  | Damaged road but no<br>available data on cost  |
| March 2011<br>Landslide/Rockfall/Wedge<br>failure, underlain by highly<br>fractured/heavily jointed<br>volcanic rocks | Tagbilaran North Road<br>Km 102.000 Brgy. Burgos,<br>Talibon, Bohol                      | Damaged road but no<br>available data on cost  |
| March 2011<br>Slump/Landslide, underlain by<br>weathered agglomerate  | Sitio Mabca, Brgy. Overland,<br>Buenavista, Bohol  | Damaged road but no<br>available data on cost  |
| March 2011<br>Landslide   | Brgy. Libertad, Tubigon, Bohol   | Damaged road but no<br>available data on cost  |
| March 2011<br>Landslide/Localized Slope<br>failure, underlain by<br>moderately<br>weathered limestone                 | Km 82 Brgy. Lataban and So.<br>Danao, Brgy. Magsaysay, Sierra<br>Bullones, Bohol         | Damaged road but no<br>available data on cost  |
| June 3, 2008<br>Minor Landslide   | Brgy. Sagasa, Balilihan, Bohol   | No available data  |
| March 17, 2008<br>Landslide   | Loboc, Bohol   | No available data  |
| Early March 2008<br>Landslide/Road Slip, underlain<br>by shales interbedded with<br>sandstone                         | Loboc-Carmen Road in Brgy.<br>Gotozon, Loboc, Bohol<br>(N9039'03.50",<br>E124°01'39.70") | Damaged road but no<br>available data on cost  |
| February 18, 2008   | National Highway in Poblacion<br>Central (Liloan) Cortes, Bohol                          | Damaged road but no<br>available data on cost  |



| DESCRIPTION   | POPULATION/AREAS AFFECTED  | IMPACTS   |
|---|--|---|
| Landslide/Road Slip, recurred in early 2011/ steep slope cut in the '70's, underlain by limestone   | (N9°43'18.60", E123°52'28.20")   |   |
| January 11, 2007<br>Minor Landslide   | Loboc-Sikatuna, Bohol  | No available data   |
| September 13, 2006<br>Landslide   | Mayana, Jagna, Bohol   | No available data   |
| August 23, 2006<br>Landslide  | Mayana, Jagna, Bohol   | No available data   |
| March 20, 2006<br>Landslide   | Mayana, Jagna, Bohol   | No available data   |
| March 6, 2006<br>Landcracks   | Sierra Bullones, Bohol   | No available data   |
| March 2, 2006<br>Landcracks   | Cortes, Bohol  | No available data   |
| February 27, 2006<br>Landcracks   | Alicia, Bohol  | No available data   |
| December 16, 2005<br>Landslide underlain by tuffaceous sediments  | Brgy. Imelda, Duero, Bohol (N9°45'19.7", 9°45'31.2", E124°22'46.5", 124°23'51.0")<br>1 family and 5 persons affected | 1 house damaged;<br>No available data on damage cost  |
| October 15, 2005<br>Landslide/ Rotational Slip after heavy rainfall; underlain by limestone   | So. Ilaya, Brgy. Labogon, Duero, Bohol (N9°44'44.4", 9°45'00", E124°23'03.6", E124°25'13")                           | No available data   |
| July 11, 2005<br>Landslide  | Mayana, Jagna, Bohol   | P5M - damaged houses<br>P4.5M – infrastructure<br>P5.3M – agriculture<br>Total damages – P14.8M |
| 1980's/ July 11, 2005<br>Landslide/Rockfall, underlain by shale, tuffaceous siltstone and tuffaceous sandstone, with possible presence of a fault | Brgy. Mayana, Jagna, Bohol (N9°43'55.5", E124°20'56.1")<br>More or less 255 persons affected                         | Damaged road and 51 residences but no available data on cost                                    |
| November 2001<br>Landslide/ Rotational Slip   | Brgy. Candasog, Loboc, Bohol (N9°38'50.0", E124°02'25.1")<br>15 has.   | No available data   |
| November 22, 1998<br>Debris/ Rock fall underlain by highly fractured & brecciated ultramatics, clastics and limestone                             | Tagbilaran-Guindulman Road, Bohol; 20 hectares; 30 families and more or less 150 persons affected                    | No available data   |
| 1070's/ July 1997<br>Landslide/rockfall/wedge failure/slope failure   | DWRP/Angilan River, Duero, Bohol; 50 hectares  | No available data   |

**Annex B**  
**Summary of Rainfall-Induced Landslide Susceptibility in Bohol**

| Municipality | High            |                              | Moderate        |                              | Low             |                              |
|--------------|-----------------|------------------------------|-----------------|------------------------------|-----------------|------------------------------|
|              | No. of Barangay | Land Area (m <sup>2</sup> .) | No. of Barangay | Land Area (m <sup>2</sup> .) | No. of Barangay | Land Area (m <sup>2</sup> .) |
| Albuquerque  | 1               | 1,467,095                    | 4               | 3,396,862                    | 11              | 18,840,460                   |
| Alicia       | 8               | 22,514,498                   | 15              | 27,528,545                   | 13              | 43,555,285                   |
| Anda         | 15              | 23,708,747                   | 13              | 13,054,693                   | 0               | 0                            |
| Antequera    | 0               | 0                            | 12              | 17,019,805                   | 20              | 33,037,297                   |
| Baclayon     | 0               | 0                            | 12              | 18,167,373                   | 11              | 7,900,230                    |
| Balilihan    | 3               | 1,054,966                    | 22              | 39,141,677                   | 31              | 81,323,007                   |
| Batuan       | 0               | 0                            | 13              | 45,546,907                   | 15              | 31,025,717                   |
| Bien Unido   | 0               | 0                            | 0               | 0                            | 7               | 2,586,672                    |
| Bilar        | 0               | 0                            | 18              | 94,812,953                   | 17              | 23,664,873                   |
| Buenavista   | 8               | 1,996,176                    | 13              | 12,774,117                   | 25              | 72,768,460                   |
| Calape       | 9               | 8,787,785                    | 9               | 7,948,401                    | 18              | 23,284,257                   |
| Candijay     | 13              | 16,937,247                   | 17              | 20,621,433                   | 17              | 15,720,233                   |
| Carmen       | 9               | 14,846,425                   | 23              | 57,456,658                   | 29              | 97,565,508                   |
| Catigbian    | 9               | 3,709,200                    | 16              | 30,231,695                   | 20              | 38,439,362                   |
| Clarin       | 2               | 928,878                      | 6               | 3,051,958                    | 22              | 32,337,400                   |
| Corella      | 0               | 0                            | 5               | 16,963,839                   | 8               | 20,554,599                   |
| Cortes       | 0               | 0                            | 0               | 0                            | 14              | 25,035,051                   |
| Dagohoy      | 2               | 1,225,878                    | 7               | 21,205,591                   | 14              | 42,471,552                   |
| Danao        | 12              | 24,333,738                   | 15              | 56,541,908                   | 15              | 55,392,127                   |
| Dausi        | 0               | 0                            | 5               | 635,194                      | 0               | 0                            |
| Dimiao       | 4               | 611,318                      | 20              | 28351083                     | 32              | 24,038,584                   |
| Duero        | 13              | 18,564,280                   | 19              | 28,173,474                   | 6               | 20,608,387                   |
| GHernandez   | 21              | 18,028,674                   | 27              | 61,122,343                   | 20              | 15,790,368                   |
| Getafe       | 2               | 340,792                      | 6               | 14,565,467                   | 14              | 51,318,364                   |
| Guindulman   | 14              | 34,880,127                   | 13              | 31,260,000                   | 13              | 11,470,434                   |
| Inabanga     | 9               | 5,183,626                    | 21              | 26,639,192                   | 30              | 18,027,733                   |
| Jagna        | 25              | 25,944,747                   | 31              | 55,339,371                   | 16              | 15,991,023                   |
| Lila         | 6               | 4,127,844                    | 15              | 19,765,183                   | 7               | 4,008,565                    |
| Loay         | 2               | 238,172                      | 7               | 4,205,817                    | 16              | 13,472,906                   |
| Loboc        | 8               | 2,742,857                    | 21              | 31,446,898                   | 25              | 18,457,576                   |
| Loon         | 19              | 15,746,036                   | 27              | 18,618,690                   | 35              | 36,720,320                   |



| Municipality    | High            |                              | Moderate        |                              | Low             |                              |
|-----------------|-----------------|------------------------------|-----------------|------------------------------|-----------------|------------------------------|
|                 | No. of Barangay | Land Area (m <sup>2</sup> .) | No. of Barangay | Land Area (m <sup>2</sup> .) | No. of Barangay | Land Area (m <sup>2</sup> .) |
| Mabini          | 18              | 16,580,034                   | 20              | 14,739,356                   | 16              | 24,021,579                   |
| Maribojoc       | 8               | 16,023,736                   | 8               | 6,376,459                    | 15              | 18,136,374                   |
| Pilar           | 9               | 10,937,063                   | 12              | 20,198,807                   | 20              | 75,692,497                   |
| Pres. Garcia    | 0               | 0                            | 0               | 0                            | 20              | 17,495,289                   |
| Sagbayan        | 6               | 1,818,715                    | 11              | 10,412,270                   | 18              | 24,592,197                   |
| San Isidro      | 1               | 60,444                       | 10              | 15,539,372                   | 12              | 38,108,871                   |
| San Miguel      | 3               | 1,944,151                    | 5               | 6,239,812                    | 17              | 63,744,345                   |
| Sevilla         | 0               | 0                            | 7               | 22,720,038                   | 13              | 41,925,676                   |
| Sierra Bullones | 12              | 6,065,677                    | 17              | 24,883,581                   | 22              | 45,029,349                   |
| Sikatuna        | 2               | 2,825,537                    | 6               | 5,470,049                    | 9               | 9,767,845                    |
| Tagbilaran City | 0               | 0                            | 2               | 733,829                      | 12              | 17,298,159                   |
| Talibon         | 0               | 0                            | 7               | 20,606,090                   | 23              | 67,941,114                   |
| Trinidad        | 0               | 0                            | 4               | 13,442,904                   | 13              | 37,035,058                   |
| Tubigon         | 1               | 691,063                      | 8               | 6,022,812                    | 20              | 32,275,358                   |
| Ubay            | 5               | 18,466,171                   | 6               | 8,868,368                    | 30              | 52,117,300                   |
| Valencia        | 19              | 9,735,765                    | 31              | 41,520,233                   | 31              | 36,076,030                   |
| <b>TOTAL</b>    | <b>298</b>      | <b>333,067,462</b>           | <b>586</b>      | <b>1,023,361,107</b>         | <b>812</b>      | <b>1,496,663,391</b>         |

**Annex C**  
**Summary for Storm Surge/Big Waves Susceptibility**

| Municipality    | No. of<br>Barangay | Total Land Area<br>(sq. m.) |
|-----------------|--------------------|-----------------------------|
| Alburquerque    | 6                  | 291,729                     |
| Anda            | 8                  | 1,374,400                   |
| Baclayon        | 5                  | 1,674,550                   |
| Bien Unido      | 14                 | 4,024,686                   |
| Buenavista      | 4                  | 142,768                     |
| Calape          | 14                 | 1,170,617                   |
| Candijay        | 4                  | 1,753,119                   |
| Clarin          | 6                  | 266,912                     |
| Cortes          | 2                  | 277,492                     |
| Dauis           | 5                  | 26,788                      |
| Dimiao          | 8                  | 99,534                      |
| Duero           | 9                  | 336,343                     |
| G-Hernandez     | 11                 | 383,157                     |
| Getafe          | 19                 | 14,593,415                  |
| Guindulman      | 7                  | 542,374                     |
| Inabanga        | 15                 | 1,132,530                   |
| Jagna           | 13                 | 398,066                     |
| Lila            | 10                 | 393,233                     |
| Loay            | 13                 | 680,983                     |
| Loon            | 26                 | 1,088,480                   |
| Mabini          | 15                 | 3,991,375                   |
| Maribojoc       | 9                  | 883,488                     |
| Panglao         | 8                  | 2,341,532                   |
| Pres. Garcia    | 21                 | 4,092,553                   |
| Tagbilaran City | 5                  | 138,244                     |
| Talibon         | 17                 | 11,812,330                  |
| Tubigon         | 14                 | 633,596                     |
| Ubay            | 20                 | 4,408,879                   |
| Valencia        | 8                  | 234,231                     |
| <b>TOTAL</b>    | <b>316</b>         | <b>59,187,404</b>           |



**Annex D**  
**Summary for Earthquake Susceptibility**

| Municipality | Susceptibility Level |                      |             |                      |
|--------------|----------------------|----------------------|-------------|----------------------|
|              | Intensity 7          |                      | Intensity 8 |                      |
|              | Barangay             | Land Area<br>(sq.m.) | Barangay    | Land Area<br>(sq.m.) |
| Albuquerque  | 0                    | 0                    | 11          | 26,363,037           |
| Alicia       | 0                    | 0                    | 15          | 118,335,078          |
| Anda         | 0                    | 0                    | 16          | 50,352,615           |
| Antequera    | 15                   | 24,866,419           | 15          | 29,964,269           |
| Baclayon     | 0                    | 0                    | 17          | 31,713,811           |
| Balilihan    | 9                    | 6,157,300            | 31          | 119,741,019          |
| Batuan       | 0                    | 0                    | 15          | 91,281,433           |
| Bien Unido   | 13                   | 23,101,895           | 2           | 3,508,681            |
| Bilar        | 0                    | 0                    | 19          | 134,951,293          |
| Buenavista   | 15                   | 67,123,687           | 24          | 34,016,623           |
| Calape       | 33                   | 72,457,438           | 1           | 25,366               |
| Candijay     | 0                    | 0                    | 21          | 93,105,632           |
| Carmen       | 3                    | 6,583,395            | 29          | 213,661,109          |
| Catigbian    | 18                   | 29,064,007           | 18          | 54,567,757           |
| Clarin       | 18                   | 37,562,022           | 18          | 14,856,951           |
| Corella      | 0                    | 0                    | 8           | 38,897,600           |
| Cortes       | 0                    | 0                    | 14          | 30,071,089           |
| Dagohoy      | 1                    | 446,576              | 15          | 73,252,428           |
| Danao        | 16                   | 88,452,260           | 13          | 55,673,469           |
| Dauis        | 5                    | 4,154,139            | 12          | 41,207,256           |
| Dimiao       | 0                    | 0                    | 35          | 55,289,585           |
| Duero        | 0                    | 0                    | 21          | 74,896,568           |
| G-Hernandez  | 0                    | 0                    | 30          | 99,851,224           |
| Getafe       | 3                    | 27,517,032           | 24          | 68,482,136           |
| Guindulman   | 0                    | 0                    | 19          | 101,428,262          |
| Inabanga     | 20                   | 32,837,220           | 40          | 67,876,210           |
| Jagna        | 0                    | 0                    | 33          | 105,752,345          |
| Lila         | 0                    | 0                    | 18          | 33,350,442           |
| Loay         | 0                    | 0                    | 24          | 29,557,344           |
| Loboc        | 0                    | 0                    | 28          | 57,331,014           |
| Loon         | 67                   | 97,036,882           | 1           | 452                  |
| Mabini       | 22                   | 86,898,747           | 22          | 86,898,747           |
| Maribojoc    | 12                   | 26,971,346           | 16          | 25,889,135           |
| Panglao      | 2                    | 370,811              | 10          | 47,394,290           |
| Pilar        | 0                    | 0                    | 21          | 121,179,717          |
| Pres. Garcia | 23                   | 43,873,441           | 5           | 1,753,528            |

| Municipality    | Susceptibility Level |                      |             |                      |
|-----------------|----------------------|----------------------|-------------|----------------------|
|                 | Intensity 7          |                      | Intensity 8 |                      |
|                 | Barangay             | Land Area<br>(sq.m.) | Barangay    | Land Area<br>(sq.m.) |
| Sagbayan        | 19                   | 60,020,017           | 15          | 33,410,205           |
| San Isidro      | 12                   | 53,139,434           | 3           | 6,429,688            |
| San Miguel      | 4                    | 7,231,765            | 18          | 107,238,612          |
| Sevilla         | 0                    | 0                    | 13          | 66,822,158           |
| Sierra Bullones | 0                    | 0                    | 22          | 85,536,843           |
| Sikatuna        | 0                    | 0                    | 10          | 20,895,668           |
| Tagbilaran City | 0                    | 0                    | 15          | 29,336,707           |
| Talibon         | 21                   | 110,386,546          | 12          | 24,218,837           |
| Trinidad        | 6                    | 36,300,744           | 20          | 80,045,239           |
| Tubigon         | 23                   | 46,385,787           | 19          | 14,309,698           |
| Ubay            | 1                    | 555,425              | 44          | 227,923,368          |
| Valencia        | 0                    | 0                    | 35          | 94,094,544           |
| TOTAL           | 381                  | 989,494,335          | 887         | 3,022,739,082        |



**Annex E**  
**Summary for Earthquake-Induced Landslide Susceptibility**

| Municipality | Susceptibility Levels |                   |                 |                   |                 |                   |
|--------------|-----------------------|-------------------|-----------------|-------------------|-----------------|-------------------|
|              | High                  |                   | Moderate        |                   | Low             |                   |
|              | No. of Barangay       | Land Area (sq.m.) | No. of Barangay | Land Area (sq.m.) | No. of Barangay | Land Area (sq.m.) |
| Albuquerque  | 5                     | 23,334            | 10              | 848,886           | 11              | 2,429,444         |
| Alicia       | 7                     | 63,089            | 15              | 3,537,428         | 15              | 8,279,021         |
| Anda         | 0                     | 0                 | 15              | 618,817           | 15              | 5,238,640         |
| Antequera    | 0                     | 0                 | 21              | 561,776           | 21              | 5,016,953         |
| Baclayon     | 2                     | 808               | 9               | 456,091           | 13              | 2,643,130         |
| Balilihan    | 6                     | 53,219            | 30              | 5,292,219         | 31              | 18,123,129        |
| Batuan       | 8                     | 67,663            | 15              | 7,570,349         | 15              | 19,401,609        |
| Bilar        | 18                    | 1,598,134         | 18              | 15,491,435        | 19              | 27,047,249        |
| Buenavista   | 0                     | 0                 | 15              | 83,281            | 23              | 4,204,381         |
| Calape       | 0                     | 0                 | 15              | 394,470           | 18              | 5,230,686         |
| Candijay     | 6                     | 28,671            | 20              | 2,280,024         | 20              | 7,574,727         |
| Carmen       | 4                     | 667,911           | 26              | 4,788,782         | 29              | 14,853,761        |
| Catigbian    | 2                     | 2,009             | 17              | 1,360,527         | 21              | 7,336,280         |
| Clarín       | 0                     | 0                 | 10              | 95,594            | 18              | 1,763,915         |
| Corella      | 1                     | 1,179             | 7               | 816,122           | 8               | 3,653,257         |
| Cortes       | 0                     | 0                 | 9               | 116,888           | 14              | 654,588           |
| Dagohoy      | 1                     | 8,032             | 10              | 1,041,130         | 14              | 5,067,418         |
| Danao        | 2                     | 4,914             | 14              | 1,565,781         | 17              | 12,898,827        |
| Dausi        | 0                     | 0                 | 2               | 5,919             | 4               | 125,403           |
| Dimiao       | 19                    | 204,597           | 30              | 3,423,317         | 35              | 3,230,031         |
| Duero        | 9                     | 77,402            | 20              | 4,605,047         | 21              | 9,661,484         |
| G-Hernandez  | 15                    | 415,368           | 30              | 6,197,753         | 30              | 12,779,230        |
| Getafe       | 0                     | 0                 | 4               | 65,338            | 11              | 2,708,909         |
| Guindulman   | 5                     | 115,586           | 15              | 5,189,652         | 17              | 12,403,464        |
| Inabanga     | 0                     | 0                 | 18              | 126,594           | 28              | 3,674,513         |
| Jagna        | 8                     | 146,480           | 32              | 5,271,279         | 33              | 12,188,800        |
| Lila         | 13                    | 807,982           | 18              | 2,297,851         | 18              | 3,636,209         |
| Loay         | 8                     | 74,312            | 16              | 1,119,458         | 22              | 1,737,722         |
| Loboc        | 22                    | 725,685           | 28              | 5,068,279         | 28              | 8,313,832         |
| Loon         | 0                     | 0                 | 31              | 363,684           | 52              | 7,359,600         |
| Mabini       | 0                     | 0                 | 19              | 763,655           | 21              | 4,705,441         |
| Maribojoc    | 0                     | 0                 | 11              | 281,738           | 17              | 341,704           |
| Panglao      | 0                     | 0                 | 1               | 3,997             | 1               | 39,406            |
| Pilar        | 7                     | 177,593           | 19              | 2,362,107         | 21              | 4,129,137         |
| Pres. Garcia | 0                     | 0                 | 3               | 3,602             | 17              | 292,853           |
| Sagbayan     | 0                     | 0                 | 22              | 684,339           | 24              | 4,021,605         |
| San Isidro   | 1                     | 393               | 12              | 1,150,989         | 12              | 7,946,250         |

| Municipality    | Susceptibility Levels |                   |                 |                   |                 |                   |
|-----------------|-----------------------|-------------------|-----------------|-------------------|-----------------|-------------------|
|                 | High                  |                   | Moderate        |                   | Low             |                   |
|                 | No. of Barangay       | Land Area (sq.m.) | No. of Barangay | Land Area (sq.m.) | No. of Barangay | Land Area (sq.m.) |
| San Miguel      | 0                     | 0                 | 8               | 115,897           | 11              | 1,719,710         |
| Sevilla         | 6                     | 97,021            | 13              | 4,389,039         | 13              | 11,885,370        |
| Sierra Bullones | 15                    | 428,626           | 19              | 2,863,919         | 22              | 4,292,093         |
| Sikatuna        | 3                     | 4,629             | 10              | 994,371           | 10              | 2,842,434         |
| Tagbilaran City | 0                     | 0                 | 6               | 38,746            | 8               | 194,467           |
| Talibon         | 0                     | 0                 | 4               | 83,117            | 10              | 3,315,254         |
| Trinidad        | 0                     | 0                 | 3               | 155,993           | 7               | 3,016,726         |
| Tubigon         | 0                     | 0                 | 16              | 177,127           | 19              | 3,028,484         |
| Ubay            | 0                     | 0                 | 13              | 822,881           | 19              | 4,699,798         |
| Valencia        | 22                    | 768,748           | 34              | 6,847,956         | 35              | 9,747,827         |
| TOTAL           | 215                   | 6,563,385         | 733             | 102,393,244       | 887             | 298,527,771       |



**Annex F**  
**Summary Matrix for Hazard Susceptibility**

| Municipality    | Geologic Hazards |              |     |         | Hydro-meteorologic Hazards |     |    |        |
|-----------------|------------------|--------------|-----|---------|----------------------------|-----|----|--------|
|                 | EQ               | Liquefaction | EIL | Tsunami | Floods                     | RIL | SS | Others |
| Alburquerque    |                  |              |     |         |                            |     |    |        |
| Alicia          |                  |              |     |         |                            |     |    |        |
| Anda            |                  |              |     |         |                            |     |    |        |
| Antequera       |                  |              |     |         |                            |     |    |        |
| Baclayon        |                  |              |     |         |                            |     |    |        |
| Balilihan       |                  |              |     |         |                            |     |    |        |
| Batuan          |                  |              |     |         |                            |     |    |        |
| Bien Unido      |                  |              |     |         |                            |     |    |        |
| Bilar           |                  |              |     |         |                            |     |    |        |
| Buenavista      |                  |              |     |         |                            |     |    |        |
| Calape          |                  |              |     |         |                            |     |    |        |
| Candijay        |                  |              |     |         |                            |     |    |        |
| Carmen          |                  |              |     |         |                            |     |    |        |
| Catigbian       |                  |              |     |         |                            |     |    |        |
| Clarín          |                  |              |     |         |                            |     |    |        |
| Corella         |                  |              |     |         |                            |     |    |        |
| Cortes          |                  |              |     |         |                            |     |    |        |
| Dagohoy         |                  |              |     |         |                            |     |    |        |
| Danao           |                  |              |     |         |                            |     |    |        |
| Dauis           |                  |              |     |         |                            |     |    |        |
| Dimiao          |                  |              |     |         |                            |     |    |        |
| Duero           |                  |              |     |         |                            |     |    |        |
| G-Hernandez     |                  |              |     |         |                            |     |    |        |
| Getafe          |                  |              |     |         |                            |     |    |        |
| Guindulman      |                  |              |     |         |                            |     |    |        |
| Inabanga        |                  |              |     |         |                            |     |    |        |
| Jagna           |                  |              |     |         |                            |     |    |        |
| Lila            |                  |              |     |         |                            |     |    |        |
| Loay            |                  |              |     |         |                            |     |    |        |
| Loboc           |                  |              |     |         |                            |     |    |        |
| Loon            |                  |              |     |         |                            |     |    |        |
| Mabini          |                  |              |     |         |                            |     |    |        |
| Maribojoc       |                  |              |     |         |                            |     |    |        |
| Panglao         |                  |              |     |         |                            |     |    |        |
| Pilar           |                  |              |     |         |                            |     |    |        |
| Pres. Garcia    |                  |              |     |         |                            |     |    |        |
| Sagbayan        |                  |              |     |         |                            |     |    |        |
| San Isidro      |                  |              |     |         |                            |     |    |        |
| San Miguel      |                  |              |     |         |                            |     |    |        |
| Sevilla         |                  |              |     |         |                            |     |    |        |
| Sierra Bullones |                  |              |     |         |                            |     |    |        |
| Sikatuna        |                  |              |     |         |                            |     |    |        |
| Tagbilaran City |                  |              |     |         |                            |     |    |        |
| Talibon         |                  |              |     |         |                            |     |    |        |
| Trinidad        |                  |              |     |         |                            |     |    |        |
| Tubigon         |                  |              |     |         |                            |     |    |        |
| Ubay            |                  |              |     |         |                            |     |    |        |
| Valencia        |                  |              |     |         |                            |     |    |        |

