

REGIONAL ACTION PLAN FOR IMPLEMENTING THE PHILIPPINE MASTER PLAN FOR CLIMATE RESILIENT FORESTRY DEVELOPMENT

Region 10, Northern Mindanao

I. Background and Rationale

The first Philippine forestry master plan which was formulated in 1990 was revised in 2003 in view of new developments in the forestry and environment sectors both at the local and international scenes. Ten years after its implementation, the Forest Management Bureau (FMB) again decided to update the 2003 revised master plan for forestry development (RMPFD), to take into consideration the potential impacts of climate change to the forestry sector. The revision was in consonance with the Climate Change Act of 2009 requiring that all government programs and policies should consider the impacts of climate change. Hence, a Philippine master plan for climate resilient forestry development (PMPCRFDD) was formulated where three strategic programs were identified for implementation to ensure that the forestry sector can respond to the adverse impacts of climate change and address varying demands for forest ecosystems goods and services from multiple clients. The three major programs include the following:

1. Program on strengthening resilience of forest ecosystems and communities to climate change;
2. Program responding to demands for forest ecosystem goods and services; and
3. Program promoting responsive governance in the forestry sector.

This plan outlines the action plan of DENR Region 10 to support implementation of the PMPCRFDD for CY 2016-2028.

II. Regional Profile

2.1 Physical Profile

Region X, known as Northern Mindanao occupies the north-central part of Mindanao Island. It is bounded by the Mindanao Sea on the north, Western Mindanao on the west, Caraga Region on the east, and Regions XI and XII on the south. Geologically, this region is a combination of plains, rolling hills, mountains and coastal areas with rich soil, abundant minerals and agricultural resources. It is strategically located since it serves as the gateway to and from the rest of Mindanao. Its modern port facilities and extensive road networks linking it to various parts of the Mindanao region makes it an ideal destination for tourism all year round. Moreover, it has abundant water resources which led to the development of hydro electric plants in the area. These plants generate the bulk of power available in the Mindanao grid.

Three types of climate prevail in different areas of this region. Type II (no dry season with very pronounced maximum rainfall from November to January) prevails in the provinces of Camiguin and Misamis Occidental. Type III (relatively dry from November to April and wet

during the rest of the year), affects Misamis Oriental and Central Bukidnon while type IV (rainfall is evenly distributed throughout the year), is predominant in Northeastern Misamis Oriental and Bukidnon.

2.2 Socio-Economic Profile

The Northern Mindanao region is composed of the provinces of Bukidnon, Camiguin, Lanao del Norte, Misamis Occidental and Misamis Oriental. It has two (2) urbanized cities, namely, Cagayan de Oro City and Iligan City and seven (7) component cities: El Salvador City, Gingoog City, Malaybalay City, Oroquieta City, Tanguib City, and Valencia City. The total number of municipalities and barangays are 84 and 2,022, respectively. The regional center is Cagayan de Oro City (<http://countrystat.psa.gov.ph>).

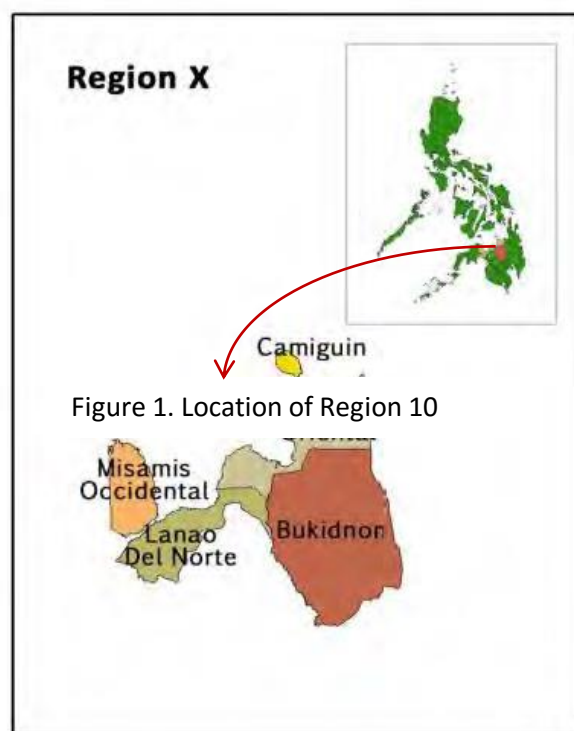


Figure 1. Location of Region 10

Region 10 has the largest economy in the Islands of Mindanao, contributing 24.3% of the island's total production. According to the Philippines Statistical Authority (PSA), the region's economy contributed 3.73% to the country's GDP. The region is known to be the top producer of pineapples in the country. Palay production has also grown significantly because of irrigation projects in the region. Bukidnon is known as the food basket of Mindanao and is home to a number of plantations such as Lapanday diversified products corporation, Del Monte and Dole Philippines. These plantations regularly produce pineapples, bananas and corn. In addition to that, almost 40% of the workers in the Northern Mindanao region is employed in agriculture.

Based on the 2015 national census, Region 10 has a total population of 4,689,302. Its average annual population growth rate from 2000 to 2015 is about 1.92%. Bukidnon is the most populated province but Cagayan de Oro and Lanao del Norte have the highest annual population growth rate at 2.53% and 2.37%, respectively (Table 1).

Table 1. Population and Annual Population Growth Rates of Region 10

Provinces	Population			Annual Pop. Growth Rate		
	May 2000	May 2010	Aug. 2015	2000-2010	2010-2015	2000-2015
REGION X (NORTHERN MINDANAO)	3,505,708	4,297,323	4,689,302	2.06	1.68	1.92
BUKIDNON	1,060,415	1,299,192	1,415,226	2.05	1.64	1.91
CAMIGUIN	74,232	83,807	88,478	1.22	1.04	1.16
LANAO DEL NORTE (excluding ILIGAN CITY)	473,062	607,917	676,395	2.54	2.05	2.37
ILIGAN CITY	285,061	322,821	342,618	1.25	1.14	1.21
MISAMIS	486,723	567,642	602,126	1.55	1.13	1.40

Provinces	Population			Annual Pop. Growth Rate		
	May 2000	May 2010	Aug. 2015	2000-2010	2010-2015	2000-2015
OCCIDENTAL						
MISAMIS ORIENTAL (excluding Cagayan de Oro City)	664,338	813,856	888,509	2.05	1.68	1.92
CAGAYAN DE ORO CITY	461,877	602,088	675,950	2.69	2.23	2.53

Source: PSA, CY 2000, 2010, 2015

2.3 Resources

Region 10 has varied resources that include land, forests and biodiversity resources, water, minerals and ecotourism areas, among others.

Land Resources

Region 10 has a total land area of 1,714,803 hectares. Of this, 52% or 897,134 hectares are classified as forestlands while 48% or 817,669 hectares are alienable and disposable lands (table 2). Most of the forestlands are situated in the provinces of Bukidnon and Lanao del Norte.

Table 2. Land Classification in Region 10

Land Classification	Area (ha)	%
Forestlands	897,134	52%
Classified Forestlands	844,532	49%
Established Timberlands	687,444	40%
Forest Reserves, National Park/ Prot. Areas & Other Reservations	157,088	9%
Unclassified forestlands	52,602	3%
Alienable and disposable lands	817,669	48%
Total	1,714,803	100%

Source: Philippine Forestry Statistics, CY 2014

Forests Resources

About 22% (377,858 hectares) of the region's land area are still forested consisting of open forest (11.2%), closed forest (10%), and mangrove forests (1.8%). Most of the forests are located in Bukidnon (202,322 ha.) followed by the provinces of Lanao del Norte (66,384 ha) and Misamis Oriental (59,690 ha.). Camiguin has the least forest, covering only an estimated area of 5,718 hectares. Table 3 summarizes the land cover per province in Region 10 for CY 2010.

Table 3. Land Cover of Region 10, CY 2010

Province	Land Area	Total Forest	Close Forest	Open Forest	Mangrove Forest	% of Region's Forest	% of Prov. Forested	% of total Forest Closed
Region 10	1,714,803	377,858	173,962	197,517	6,379	22%	22%	46%

Province	Land Area	Total Forest	Close Forest	Open Forest	Mangrove Forest	% of Region's Forest	% of Prov. Forested	% of total Forest Closed
Bukidnon	829,378	202,322	125,361	76,961	0	12%	24%	62%
Camiguin	25,286	5,718	3,994	1,705	19	0.3%	23%	70%
Lanao del Norte	309,204	66,384	11,934	52,122	2,328	4%	21%	18%
Misamis Occidental	193,932	43,744	23,859	16,146	3,739	3%	23%	55%
Misamis Oriental	357,003	59,690	8,814	50,583	293	3%	17%	15%

Source: Phil Forestry Statistics, CY 2014

In general, there was an increase in the forest cover of Region 10. From about 337,493 hectares in 2003 its total forest (close, open and mangrove forests) has increased to 377,858 hectares in 2010. This means that around 40,365 hectares of forests were added in Region 10 in a span of 7 years or an annual increase of 5,766.43 hectares. While there was an overall increase in forest cover, Misamis Oriental lost large areas of close forests (5,685 ha.). Thus, in terms of biodiversity loss, this province is most critical in Region 10. On the other hand, Bukidnon has developed most of its open forests (61,341 ha.) into close forests implying that forest protection in this province has been very effective. Misamis Oriental also registered an increase in forest cover for all types of forests. The forest cover change in Region 10 is summarized in table 4.

Table 4. Forest Cover Change in Region 10 (CY 2003-CY 2010)

Provinces	Close Forest			Open Forest			Mangrove Forest			Net Change
	2010	2003	Change	2010	2003	Change	2010	2003	Change	
Region 10			-			-			0	-
Bukidnon	125,361	64,020	61,341	76,961	108,575	(31,614)	0	0	0	29,727
Camiguin	3,994	0	3,994	1,705	7367	(5,662)	19	0	19	(1,649)
Lanao del Norte	11,934	6,637	5,297	52,122	61,266	(9,144)	2,328	722	1,606	(2,241)
Misamis Occidental	23,859	29,544	(5,685)	16,146	12,726	3,420	3,739	1,610	2,129	(136)
Misamis Oriental	8,814	6,870	1,944	50,583	37,996	12,587	293	160	133	14,664
Total**	173,962	107,071	66,891	197,517	227,930	(30,413)	6,379	2,492	3,887	40,365

* Include plantations

Source: Philippine Forestry Statistics, CY 2004 and CY 2014.

Water resources

The Philippine Forestry Statistics of 2014 indicate that there are three proclaimed watershed forest reserves in region 10 covering an estimated area of 371,386 hectares (table 5). However, in addition, there are other watersheds in the region which had been identified/ inventoried which supply water for irrigation, power generation and for domestic/ industrial uses. Accordingly, the region has 43 small watersheds (10,000 hectares or less) and 27 big watersheds (10,001 hectares and over). About 31% of these watersheds are crucial for hydropower and irrigation uses while 69% are tapped to supply water for domestic and industrial uses.

Table 5. List of Watershed Forest Reserves in Region 10

Name of Reserve	Location	Area (ha)	Proc. No.
Region 10			
Mahoganao Watershed Forest Reserve	Cagayan	136	470
Muleta-Manupali Watershed Forest Reserve	Lantapan and Pangantukan	61,500	127
Pulangi Watershed Reservation	Impasugong, Cabanglasan, San Fernando, Lantapan, Maramag, Quezon, Valencia City and Malaybalay City	309,750	E.O. 871
Total		371, 386	

Source; Philippine Forestry Statistics, CY 2014

Biodiversity Resources

The region has nine sites under the National Integrated Protected Area System (NIPAS), covering a total of 157,340 hectares (table 6). Of these sites, four are classified as protected landscapes and seascapes and five are classified as natural parks. These protected areas serve as habitats to important species of flora and fauna some of which are highly endangered. For instance, the wild bird species McGregor's cuckoo-shrike (*Coracina mcgregori*) can be found in Mt. Malindang, Mt. Kitanglad, Mt. Bliss, and in Dagupan, Misamis Oriental. Efforts to conserve this species are ongoing, considering its vulnerable status.

Table 6. List of Protected Areas in Region 10

Name	Location	Area (ha)	PA Classification
Mimbilisan	Misamis Oriental	66	Protected Landscape
Baliangao	Misamis Occidental	295	Protected landscape & seascape
Initao-Libertad	Misamis Oriental	800.45	Protected landscape & seascape
Mount Kitanglad Range	Bukidnon	31,235.19	Natural Parks
Mt. Balatukan Range	Bukidnon		Natural Park
Mount Malindang	Misamis Occidental	34,694	Natural Park
Mount Kalatungan Range	Bukidnon	21,247.73	Natural Park
Mount Inayawan Range	Lanao del Norte	3,632.74	Natural Park
Bacolod Kauswagan	Lanao del Norte		Protected landscape & seascape
TOTAL		157,340	

Source: http://readtiger.com/wkp/en/List_of_protected_areas_of_the_Philippines

Tourism Areas

Region 10 has varied areas for tourism. One of the region's top natural attractions is Mt. Kitanglad an inactive volcano that is the fourth highest peak in the Philippines at 2,899 meters, and an Association of Southeast Asian Nations Heritage Park. The 98-meter Maria Cristina Falls is also more than a tourist spot. It provides most of the electricity for Iligan City. In addition, there's the two-tiered, 265-meter Limunsudan Falls - the second-highest in the country. There are other falls and attractions in the region which are favourite tourist destinations.

Katibawasan Falls measures 250 feet high cascades to rock pool surrounded by ground orchids, wild ferns, trees, and boulders. Its cold water provides an ideal summer splash to bathers and picnickers.

Binangawan Falls has several miniature and gigantic waterfalls gushing through majestic granite stones that converge in one main pool, covered with luscious unspoiled vegetation, and a mystical rainbow is arched by the fall's mist as the sunlight penetrates through it.

Ardent Hot Spring has vapor rising from the heated waters that run down the vents of the dormant Hibok-Hibok volcano. The springs are ideal to bathe in at night surrounded by cool mountain air.

Tausan Falls has 25 meter high rapid waterfalls which entails a very scenic hike passing thru the quaint Barrio Mainit. The falls can be tapped as a mini hydro source of power. (<http://www.lakwatsero.com/destinations/camiguin-island/>)

The top 10 tourist destination in Bukidnon are Lake Apo, Paiyak Cave, Pinamaloy Lake, Napalit Lake, Nasuli Spring, Minalaya Falls, Mangima Canyon, Kaamulan Park, Sumalsag Cave, and Luan-Luan Spring (<http://www.lakwatsero.com/destinations/camiguin-island/>).

2.4 Vulnerability to Climate Change Hazards.

Climate projections by PAGASA (2011) indicate that there will be increasing temperature in 2050. In terms of rainfall, rainy season will have more rainfall while dry season will become drier. For Region 10, the estimated increase in temperature will range from 1.9°C to 2.4°C, with higher temperature increase during the months of March to August. Meanwhile, decrease in rainfall is estimated to range from -0.1% to -17.8%. This reduction in rainfall is more pronounced from March to August, while only up to 7.1% increase in rainfall is expected between the months of September to February. (table 7 and 8). With lesser rains expected in the region especially during the dry season, water availability for irrigation, power generation and domestic/ industrial use will be adversely affected. This will have serious implications on the power supply in Mindanao since most of the watersheds in region 10 are the source of water to power plants in the region. The projected increase in temperature in region 10 will most likely lead to more forest fire, hence endangering biodiversity resources. Misamis Occidental is also at risk to landslide and flooding when rainfall increases during the rainy season.

Table 7. Seasonal temperature increases in 2050 under medium-range emission scenario, Region 10

Provinces	Observed Baseline in °C (1971-2000)				Change in 2050 in °C (2036-2065)			
	DJF	MAM	JJA	SON	DJF	MAM	JJA	SON
Bukidnon	25.1	26.5	25.8	25.7	1.9	2.3	2.4	2.1
Lanao del Norte	24.4	25.5	25.4	25.2	1.9	2.2	2.1	1.9
Misamis Occ.	25.6	26.7	26.6	26.4	1.9	2.2	2.2	1.9
Misamis Or.	25.4	26.8	26.9	26.5	1.9	2.3	2.4	2

Source: PAGASA, 2011

Table 8. Seasonal rainfall change (in %) in 2050 under medium-range emission scenario in Region 10

Provinces	Observed Baseline (1971-2000)				Change in 2050 (2036-2065)			
	DJF	MAM	JJA	SON	DJF	MAM	JJA	SON
Bukidnon	329.7	335.6	653.8	559.5	-5.1	-13	-9.7	-5.8
Lanao del Norte	337.5	350.3	662.5	621.1	2.5	-1.9	1.4	7.1
Misamis Occ.	392.1	323.4	633.1	728.3	5.2	0.3	-5.1	4.6
Misamis Or.	442.5	296	615.7	581.1	1.8	-17.8	-5.2	-0.1

Source: PAGASA (2011)

III. Development Challenges in the Forestry Sector of Region 10

The challenges faced by the forestry sector in Region 10 are summarized in the succeeding discussions.

1. There is a need to continue the protection of existing forests and rehabilitate degraded forestlands in Region 10. While the general trend is that forest cover is increasing in Region 10, this trend must be sustained to further enhance ecosystems services to local communities. The protection of close forests in Misamis Occidental is a major concern since this is the only province in the region where large areas of close forests were destroyed. Camiguin and Lanao del Norte are also problem areas in terms of forest protection since these provinces registered a net forest loss between 2003 and 2010.
2. Protection and rehabilitation of watersheds to ensure adequate supply of water for irrigation, domestic use and power generation. The watersheds in region 10 are crucial in power generation as well as in agriculture since they supply the water requirements of power plants and irrigation dam in the region and in Mindanao in general. As such the protection and rehabilitation of these watersheds is of utmost importance to the entire island of Mindanao.
3. Biodiversity resources must be protected continuously. While the general trend is that there is an increase in the area of close forests, Misamis Occidental also registered a loss of about 5,685 hectares of close forests. This situation should be addressed immediately to prevent the continuous destruction of habitats of critical species.
4. Reducing the impacts of climate change hazards should be given priority attention. Many areas in Region 10 are highly vulnerable to climate and geological related hazards such as floods, landslides, storm surge, drought and forest fires. The increased frequency and intensity of these hazards, aggravated by changes in climatic conditions, will continue to endanger the lives and properties of communities. Most LGUs and majority of the population are not prepared for hazards and communities are not organized for disaster risk reduction.
5. With increasing population, demand for various forestry goods and services has correspondingly increased. Demand for wood for instance has increase tremendously but the existing forests could not supply this demand due to an existing moratorium on timber harvesting in natural forests. Thus, it is imperative to develop tree plantations as sources of timber and fuelwood for the growing population and industries.

6. Collaborative management is necessary to address the overlapping mandates of different agencies in the management of forests and forestlands. However, to be effective, the capabilities of members of the collaborative management bodies must be upgraded. Most LGUs for instance, lack technical capability and financial resources to manage and implement devolved forestry programs. They also lack the capability to enforce forestry laws and regulations and mobilize communities in forest protection activities. Most of them do not have approved forest land use plans which can complement their comprehensive land use plans and local development plans.

IV. Regional Comparative Advantages and Competitive Goods and Services: Opportunities for Forestry Development

While lots of challenges exist in the forestry sector, the region has inherent comparative advantages and competitive goods and services which can be strengthened to maximize the forestry sector's contribution to regional development. The comparative advantages of Region 10 include the following:

1. It has vast areas of agricultural lands suited for the production of rice, pineapple and other crops;
2. Presence of watershed reservations that provide water for dams and other reservoirs for irrigation, power generation and for domestic use;
3. Extensive areas of forests, lakes, rivers, biodiversity resources, and beaches that are potential for ecotourism;
4. Existing pasture areas that can be developed further for grazing purposes to satisfy local demand for meat;
5. Existing forest plantations for timber and fuelwood;
6. Existing fruit orchards
7. Presence of wood processing plants
8. Established markets for various products such as rice, pineapple and cattle fuelwood rubber and other non-timber products;
9. Presence of mangroves and coastal resources that support fisheries
10. Less frequented by typhoon;
11. Relatively high rainfall in most provinces

The following are the region's competitive goods and services which can be supported through its regional action plan for PMPCRFD implementation, to maximize the forestry sector's contribution to regional and national development.

1. Nature-Based tourism
2. Power generation
3. Rubber production;
4. Pineapple production
5. Water production for domestic use and to support rice production;
6. Timber and Fuelwood products
7. Cattle production
8. Fruits such as durian and

9. REDD+ implementation

The matrix of comparative advantages and competitive goods and services of Region 10 as identified by DENR Region 10 is attached as annex 1.

V. Regional Action Plan for Implementing the Philippine Master Plan for Climate Resilient Forestry Development

The regional action plan for implementing the PMPCRFD addresses the forestry challenges and maximizes the opportunities provided by the comparative advantages and competitive goods and services of the region. It focuses on ensuring the health and resiliency of forest ecosystems and communities to climate change hazards so that forest resources can sustainably provide and meet the increasing demands for forest ecosystems goods and services. Equally important is the institutionalization of climate responsive governance where various stakeholders collaborate and participate in making decisions in the management of forest resources and ecosystems.

5.1 The Forestry Sector Vision

The region adopts the vision of the Philippine master plan for climate resilient forestry development as follows:

*Climate resilient and sustainably managed watersheds and forest ecosystems,
providing environmental and economic benefits to society*

To achieve the vision and address the challenges in the forestry sector, the region adopts the following goals of the PMPCRFD:

1. To place all forestlands under sustainable management in order to meet demands for forest goods and services and to promote resilience to climate change;
2. To strengthen resilience of forest dependent communities to climate change hazard;
3. To place all forestlands of the region under appropriate land management arrangements; and
4. To sustainably manage watersheds in partnership with stakeholders.

5.2 Strategic Programs

Considering the identified issues and the region's comparative advantages and competitive goods and services, the forestry programs in Region 10 will focus on the following:

1. Protection of existing forests to support ecotourism, hazard mitigation and watershed management for power generation, irrigation and domestic water supply;
2. Grazing land management to take advantage of the region's existing pasture areas;
3. Forest Plantation development to address demand for timber and fuelwood;
4. Rehabilitation of other protection forests to mitigate climate change hazards such as flooding;

5. Agroforestry farm development to diversify livelihood & support rubber and pineapple production;
6. Rehabilitation of degraded mangroves for fisheries and disaster risk reduction
7. Institutionalizing collaborative management

a. Program to Strengthen Resilience of Forest Ecosystems and Communities to Climate Change Hazards

Effective climate change mitigation and adaptation strategies will be integrated into the regional forestry action plan to meet the multiple objectives of preventing further forest degradation, reducing disaster risks, maximizing productivity, and reducing vulnerability to climate hazards.

Objectives

1. To align land uses within watersheds and forest ecosystems by integrating the forest land use plans of 71 LGUs into their comprehensive land use plans;
2. To undertake vulnerability assessment and adaptation planning in 40 priority watersheds;
3. To formulate the integrated watershed management plan of 60 priority watersheds;
4. To protect 407,856 hectares of existing forests and plantations starting in 2016 gradually increasing to 630,971 hectares in 2028;
5. To diversify livelihood of local communities by developing 29,941 hectares of agroforestry farms;
6. To rehabilitate 19,835 hectares of protection forests through assisted natural regeneration;
7. Rehabilitate 215 hectares of degraded mangrove areas; and
8. To implement REDD+ in the province of Bukidnon

Strategic Activities, Targets and Period of Implementation

The activities that will be implemented to strengthen resilience of forest ecosystems and communities to climate change hazards, and their implementation period and targets are summarized in table 9.

Table 9. Summary of Activities and Period of Implementation to Strengthen Resilience of Communities and Ecosystems to Climate Change Hazards

Strategic Programs and Activities	Targets and Implementation Period			
	2016	2017 -2022	2023 -2028	Total
1. Vulnerability assessment and adaptation planning in priority watersheds (no.)	0	19	21	40
2. Formulation of integrated watershed management plans (no.)	0	18	42	60
3. Updating of IWMP (No)				

Strategic Programs and Activities	Targets and Implementation Period			
	2016	2017 -2022	2023 -2028	Total
4. FLUP formulation (no. of LGUs)	11	60	0	71
5. Protection of existing forests and plantations including mangroves (ha)	407,856	554,671	630,971	630,971
6. Mangrove rehabilitation (ha)	0	215	0	215
7. Agroforestry development (mixed crops in ha)	0	29,941	0	29,941
8. Rehabilitation of protection forests (ANR) in ha.	7,744	12,091	0	19,835
9. Implementation of REDD+ (No of provinces)	0	0	1	1
10. Training on vulnerability assessment, adaptation planning, integrated pest management, IWM, FLUP (no. of training)	0	15	15	30

b. Program to Address Increasing Demands for Forest Goods and Services

Considering the regional comparative advantages, and its competitive goods and services, the regional action plan of Region 10 will give more focus on addressing demands for fuelwood, cattle, agroforestry products such as pineapple and rubber, water, biodiversity for ecotourism, and the need to reduce disaster risks and improve environmental conditions especially in urban centers..

Objectives

The specific objectives of this program are:

1. To develop 140,000 hectares of timber plantations
2. To develop 5,000 hectares of fuelwood plantations;
3. To protect, conserve and rehabilitate 39,575 hectares of priority watersheds for power generation, domestic and industrial use and for irrigation to support production of rice and other agricultural crops;
4. Continue to develop the existing 8,240 hectares of pasture areas to address local demands for meat; and
5. To develop forest parks, and green belts in key cities of the region

Strategic Activities, Targets and Period of Implementation

The activities, targets and their period of implementation to address demands for forest goods and services are summarized in table 10.

Table 10. Summary of Activities, Targets and Period of Implementation to Address Demands for Forest Goods and Services

Strategic Activities	Targets and Implementation Period			
	2016	2017 -2022	2023 -2028	Total
1. Demarcation of forestland boundaries & forest management zones (ha.)	0	897,134		897,134
4. Fuelwood/ bio energy plantation dev't in all provinces (ha)	0	1,800	3,200	5,000
5. Development of forest plantations for timber	6,124	79,400	54,476	140,000
6. Management of grazing lands (ha)	8,240	8,240	8,240	8,240

Strategic Activities	Targets and Implementation Period			
	2016	2017 -2022	2023 -2028	Total
7. Watershed rehabilitation	7,440	19,660	12,475	39,575
Vegetative SWC (ha)				
Structural soil and water conservation (cu. Meters)				
Organization and capacitation of watershed management bodies , such as the watershed management council (no.)	0	6	6	12
8. Support to urban forestry in major cities and urban centers (LGUs assisted)	0	15	15	30

c. Institutionalizing Responsive Governance in Forestry

The governance of forestlands and protected areas in the region has been complicated, by overlapping institutional mandates and overlapping tenure at the forest management unit level. With different policy issuances, such as the local government code, indigenous peoples rights act, national integrated protected area system act and the water code, among others, DENR no longer has exclusive jurisdiction over forest ecosystems. This overlapping mandates have resulted to overlapping tenure instruments at the forest management unit level. In many instances, CADTs, protected areas, watershed reserves, and CBFMAs overlap with each other, leading to confusion on who is accountable for the management of the allocated forestlands and protected areas.

Apart from overlapping mandates and overlapping tenure, the different demands for forest ecosystems goods and services from multiple clients, which often times are conflicting, requires collaborative management of forests and forestlands. In view of this situation, the forestry sector in the region will enhance the skills and capabilities of its personnel so that it can effectively collaborate with other stakeholders in implementing programs on strengthening resilience to climate change hazards and respond to demands for forest ecosystems goods and services.

Objectives

The primary objectives of this program are the following:

1. To establish clear accountability in the management of forestlands;
2. To promote active participation of stakeholders in the management of forests and forestlands;
3. Keep track of progress in the implementation of the Philippine forestry master plan and
3. Strengthen the capabilities of DENR and other stakeholders in implementing forest management programs related to enhancing resilience to climate change and responding to demands for forest goods and services from multiple clients.

Strategic Activities and Targets

The activities, targets and their implementation periods to institutionalize responsive governance in the forestry sector in Region 10 are summarized in table 11.

Table 11. Summary of Activities, Targets and Period of Implementation to Institutionalize Responsive Governance in Region 10

Strategic Programs and Activities	Targets per Implementation Period			
	2016	2017 -2022	2023 -2028	Total
Promoting Responsive Governance				
1. Inventory of forest occupants (No.of LGUs)	0	11	60	71
2. Tenure issuance in open access forestlands (ha)	0	20,000	30,000	50,000
3. Organization and capacitation of multi-sectoral collaborative management bodies (region and province)	0	6	6	12
4. Creation and operationalization of regional/ provincial TWG on climate change (no.)	0	6	6	12
5. Capability enhancement for DENR/ LGUs (no. of trainings)	0	18	12	30
6. Semi-annual / annual monitoring and evaluation of PMPCRFD implementation (No.)	1	12	12	25
7. Performance assessment of tenure holders (No.)	1	6	6	13

d. Support programs

Cross cutting support programs will focus on facilitating implementation of the three major forestry programs in the region. These are designed to inform the public of the important role of forest ecosystems in mitigating the adverse impacts of climate change and in securing water supply and other forest ecosystems goods and services. These are also intended to develop sustainable financing mechanisms, promote science based decision making and improve accountability through forest certification and improved data base.

Objectives

The support programs aim to:

1. Generate stakeholders' support in the implementation of the Philippine master plan for climate resilient forestry development;
2. Develop a data base management system to establish appropriate baseline data as basis for management decisions and monitoring and evaluation
3. Identify sustainable sources of financing for implementing the forestry master plan
4. Institutionalize a system for certifying sustainably managed forests and industries
5. Provide research based information for forest management decision making, vulnerability assessment and climate change adaptation planning.

Strategic Activities, Targets and Period of Implementation

The strategic activities, targets and period of implementation to achieve the objectives of this program are summarized in table 13,

Table 13. Summary of Support Program Activities, Targets and Implementation Period

Strategic Activities	Targets per Implementation Period			
	2016	2017 -2022	2023 -2028	Total
1. Information, education and communication campaign (no. of LGUs)	0	20	25	45
2. Upgrading of regional MIS facilities (no.)	0	6	6	12
3. Implementation of forest certification (Provinces)	0	1	4	5
4. Identification and assessment of sustainable sources of financing in forestry projects (No. of sites assessed)	0	10	5	15
5.Forestry research (no. of studies)	1	12	12	13

VI. Plan Implementation

This regional action plan shall be implemented by DENR Region 10 in collaboration with LGUs, NCIP, CBFMA/ CADT holders, private investors, and other relevant stakeholders. Orientation/ information campaign about the regional action will be undertaken for LGUs and key stakeholders to encourage them to participate in its implementation.

Financing of the regional action plan for implementing the PMPCRFD will come both from the government and the private sector. Government financing will primarily come from existing programs/ projects of the DENR and to some extent from existing programs of the LGUs, especially those related to disaster risk reduction, climate change adaptation and the formulation/ updating of the comprehensive land use plans which integrates the FLUP, protected area management plans, ADSDPP and the watershed management plans as mandated under existing guidelines. Fund sourcing will be undertaken for activities and programs which are not included in existing programs and projects of DENR, LGUs and other agencies. Where there are opportunities for donor assistance, unfunded programs and projects will be submitted for possible financial support.

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ANNEXES

Annex 1. Comparative Advantages and Competitive Goods and Services, Region 10

Comparative advantages		Cattle	Fuel-wood	Rice	timber/falcata	wood furniture	water for power irrigation	Nature-Based tourism	fisheries	non timber products	rubber	cacao	coffee	REDD+
vast areas of agricultural lands				X										
Existing watersheds				X			X	X						
grazing lands		X												
less typhoons	X				X						X			
more rainfall	X		X		X						X	X	X	
dams for irrigation and power				X			X							
Existing tree plantations					X	X								
fruit orchards	X							X						
established markets	X	X	X	X	X	X				X	X	X	X	
Wood processing plants						X								
Natural forests								X		X				X
Protected areas								X						X
caves								X						
beaches								X						
waterfalls								X						
lakes and rivers								X	X					
mangroves			X						X					
rubber buyers											X			
coffee/cacao investors												X	X	

