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

Region 12, SOCCSKSARGEN Region

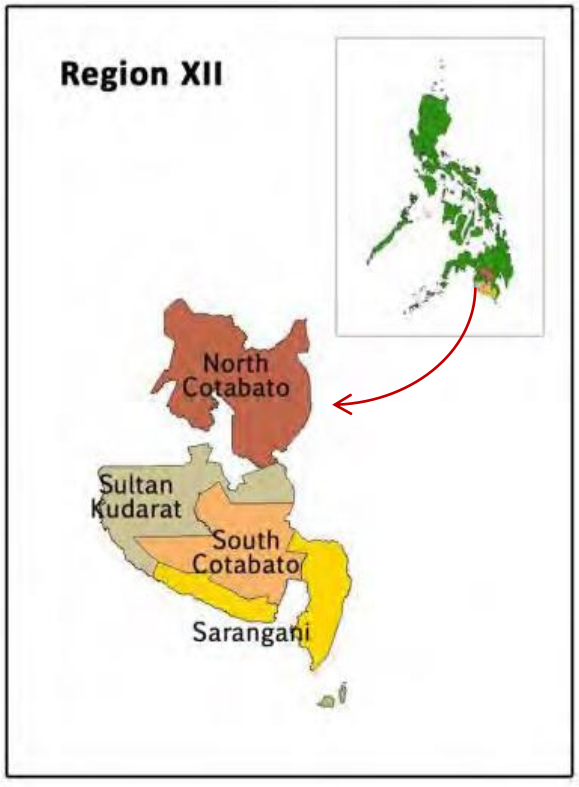
I. Background and Rationale

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 (PMPCRFD) 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 12 to support implementation of the PMPCRFD for CY 2016-2028.

Figure 1. Location of the Region 123



II. Regional Profile

SOCCSKSARGEN, is located in central Mindanao, and is officially designated as Region XII. The name is an acronym that stands for the region's four provinces and one of its cities: South Cotabato, Cotabato, Sultan Kudarat, Sarangani and General Santos City. The regional center is Koronadal City located in the province of South Cotabato. Cotabato City itself is part of SOCCSKSARGEN, but Maguindanao is part of the Autonomous Region in Muslim Mindanao. The region is

branded as the 12th paradise of the Philippines.

2.1 Physical features

The region has extensive coastlines, valleys and mountain ranges. Known for its river system, the region is the catch basin of Mindanao. The system is a rich source of food, potable water and energy production. Cotabato contains the Rio Grande de Mindanao, which is the longest river in Mindanao and the second longest in the Philippines.

The physiographic characteristics of the region vary from flat, fertile plains to irregular landscapes to wide valleys, scattered hills and intensive mountain ranges. Its coastline is extensive and stretches to 320 kilometers, particularly along the Sultan Kudarat, Sarangani and General Santos City coastal zone. Along the coasts are lowland areas covered with mangroves and beaches. A chain of inactive volcanoes and low hills occupy the interior.

The region falls under the 4th Climatic Type having rainfall that is more or less evenly distributed throughout the year. This rainfall pattern contributes to the high production levels in agriculture of the region. Region XII is seldom visited by typhoon. (National Economic and Development Authority Regional Office No. XII, 2011)

2.2 Socio-Economic Profie

SOCCSKSARGEN is composed of four provinces, five cities, 45 municipalities and 1,192 barangays. The provinces are Cotabato, South Cotabato, Sarangani and Sultan Kudarat. The cities are Cotabato, General Santos, Kidapawan, Koronadal, and Tacurong. Koronadal City is the administrative center of Region XII and is located in South Cotabato. The municipalities and cities of the region are grouped into seven congressional districts. (National Economic and Development Authority Regional Office No. XII, 2011)

Region XII is among the leaders in the country in palay and corn production. It is the top producer of high value crops like coffee, banana, asparagus, and oil palm. General Santos City is host to 80 percent of the tuna industry in the country. And the region is No. 7 in terms of livestock inventory.

The region has world-class infrastructure facilities, such as the General Santos International Airport and the General Santos Port. In support of the development of the agriculture and fishery sector, the Malitubog-Maridagao River Irrigation System currently services around 5,500 hectares of rice fields in the Provinces of Cotabato (Pikit, Carmen) and Maguindanao (Pagalungan, Pagagawan). The Mt. Apo Geothermal Plant located in Kidapawan City, Cotabato Province also contributes to the power requirement of the Mindanao Grid.

Based on the 2015 national census Region 12 has a total population of 4,545,276. Its average annual population growth rate from 2000 to 2015 is about 2.28%. North Cotabato is the most populated province while Cotabato City has the highest annual population growth rate in the region at 4.03% (Table 1).

Table 1. Population and Annual Population Growth Rates of Region 12

Provinces	Population			Annual Pop. Growth Rate		
	May 2000	May 2010	Aug. 2015	2000-2010	2010-2015	2000-2015
REGION XII	**3,222,169**	**4,109,571**	**4,545,276**	**2.46**	**1.94**	**2.28**
North Cotabato	958,643	1,226,508	1,379,747	2.49	2.27	2.41
South Cotabato (excluding Gen. Santos City)	690,728	827,200	915,289	1.82	1.94	1.86
Gen. Santos City	411,822	538,086	594,446	2.71	1.91	2.43
Sultan Kudarat	586,505	747,087	812,095	2.45	1.60	2.16
Sarangani	410,622	498,904	544,261	1.97	1.67	1.86
Cotabato City	163,849	271,786	299,438	5.19	1.86	4.03

Source: PSA, CY 2000, 2010, 2015

The major earners in the region are fishing, agriculture and forest- related products. Fishing is a major economic activity because of the rich fishing grounds of Iligan Bay, the Moro Gulf and the Celebes Sea. Hydroelectric power is provided by the Maria Cristina Falls. Steel, cement and coconut oil are some of the important products of the region. Coconut, pineapple, rubber, sugarcane, rice, corn, banana and other fruits are the main agricultural produce (http://en.wikipilipinas.org)

2.3 Resources

Given its natural endowment, SOCCSKSARGEN Region has great potentials for high levels of agriculture production, tourism development, energy generation, and other resource based industries. Support to develop these industries includes the implementation of high impact infrastructure amenities, such as airports and irrigation dams.

Region 12 has rich mineral resources such as gold, copper, iron, chromium, silver, zinc, clay gypsum, limestone and phosphate. It is also the main source for hydroelectric power for Mindanao.

Land Resources

Region 12 has a total land area of 1,874,946 hectares. Of this, 61% or 1,144,400 hectares are classified as forestlands while 39% or 730,546 hectares are alienable and disposable lands (table 2). Most of the forestlands are situated in the provinces of Sultan Kudarat and South Cotabato.

Table 2. Land Classification in Region 12

Land Classification	Area (ha)	%
Forestlands	1,144,400	61%
Classified Forestlands	926,400	49%
Established Timberlands	684,780	36%
Forest Reserves, National Park/ Prot. Areas & Other Reservations	241,620	13%

Land Classification	Area (ha)	%
Unclassified forestlands	218,000	12%
Alienable and disposable lands	730,546	39%
Total	1,874,946	100%

Source: Philippine Forestry Statistics, CY 2014

Forests Resources

About 13% (249,050 hectares) of the region's land area are still forested consisting of open forest (10%), closed forest (3%), and mangrove forests (0.1%). Most of the forests are located in Sultan Kudarat (104,815 ha.) followed by the province of South Cotabato (64,328 ha). Cotabato has the least forest, covering only an estimated area of 39,947 hectares. Table 3 summarizes the land cover per province in Region 12 for CY 2010.

Table 3. Land Cover of Region 12, CY 2010

Province	Land Area	Total Forest	Close Forest	Open Forest	Mangrove Forest	% forest of region's area	% of Prov. Forested	% of total Forest Closed
Region 12	1,874,946	249,050	54,247	193,202	1,601	13%	13%	22%
Cotabato	656,590	39,947	7,896	31,381	670	2%	6%	20%
Sarangani	746,876	39,960	1,776	38,037	147	5.6%	14%	27%
South Cotabato		64,328	26,465	37,839	24			
Sultan Kudarat	471,480	104,815	18,111	85,945	760	5.6%	22%	17%
%		13%	3%	10%	0.1%			

Source: Phil Forestry Statistics, CY 2014

In general, there was a decrease in the forest cover of Region 12. From about 349,234 hectares in 2003 its total forest (close, open and mangrove forests) has decreased to 249,050 hectares in 2010. This means that around 100,184 hectares of forests were lost in Region 12 in a span of 7 years or an annual loss of about 14,312 hectares. This condition has adverse implications on the ability of the forest ecosystem to provide ecosystems goods and services to local communities. Specifically, the biodiversity resources of the region is in critical condition since close forest has decreased considerably in all provinces of region 12. The forest cover change in Region 12 is summarized in table 4.

Table 4. Forest Cover Change in Region 12 (CY 2003-CY 2010)

Provinces	Close Forest			Open Forest			Mangrove Forest			Net Change
	2010	2003	Change	2010	2003	Change	2010	2003	Change	
Region 12			-			-			0	-
Cotabato	7,896	18808	(10,912)	31,381	61332	(29,951)	670	914	(244)	(41,107)
Sarangani	1,776	29908	(28,132)	38,037	18315	19,722	147	139	8	(8,402)
South Cotabato	26,465	52234	(25,769)	37,839	28208	9,631	24	0	24	(16,114)
Sultan Kudarat	18,111	25435	(7,324)	85,945	113558	(27,613)	760	383	377	(34,560)
Total*	54,248	126,385	(72,137)	193,202	221,413	(28,211)	1,601	1,436	165	(100,183)

* Include plantations

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

Water resources

The region is richly endowed with abundant watersheds and water resources more than adequate to supply its requirement for irrigation, domestic and industrial uses. Among the major rivers that traverse the region are the Rio Grande de Mindanao and the Ala River. In addition, SOCCSKSARGEN is located within the second largest basin in the Philippines which is known as the Mindanao River Basin.

Region 12 has five proclaimed watershed forest reserves covering approximately 272,759 hectares (table 5). These reserves together with other watersheds in the region support national irrigation systems as indicated in table 6.

Table 5. List of Watershed Forest Reserves in Region 12

Name of Reserve	Location	Area (ha)	Proc. No.
Allah Watershed Forest Reserve	Isulan, Banga, Surallah, Kiamba	92,450	2455
Kabulnan River Watershed Forest Reserve	Esperanza, Isulan, Bagumbayan, Ninoy Aquino, Kalamansig, Palembang (Sultan Kudarat), Ampatuan (Maguindanao.), Lake Sebu (South Cotabato)	116,452	241
Koronadal Watershed Forest Reserve	Marbel	1137	607
Libungan Watershed Forest Reserve	Libungan, Alamada	52,820	563
Sebu Watershed Forest Reserve	Banga and Kiamba	9,900	65
Region 12 Total		**272,759**	**3,931**

Source: Philippine Forestry Statistics, CY 2014

Table 6. Watersheds Supporting NIA Irrigation Systems (NIS) in Region 12

River Basin	Name of Watershed	NIS Supported	Province	Municipality	Watershed Area NIA (ha)	NIS Service Area (In ha)
Mindanao RB Liguasan Marsh	Kabacan River Watershed	Kabacan-Pagalungan RIS	North Cotabato	Kabacan & Kidapawan	74,000	4,428
Mindanao RB	Libungan River Watershed	Libungan RIS	North Cotabato	Libungan	51,700	4,496
Mindanao RB Liguasan Marsh	M'lang River Watershed	M'lang RIS	North Cotabato	M'lang & Makilala	20,100	2,981
Mindanao RB Liguasan Marsh	Malasila River Watershed	Malasila RIS	North Cotabato	Tuluran & Makilala	31,200	4,006
Mindanao RB	Allah River Watershed	Allah 1 RIS, Allah II Lambayong RIS	South Cotabato	T'Boli, rala, Surallah	158,290	23,355
Mindanao RB	Banga River Watershed	Banga RIS	South Cotabato	Banga	28,800	2,682
Silway-Klinan RB	Silway River Watershed	Silway RIS	South Cotabato	Dadiangas, Polomolok &	53,300	1,406
Mindanao RB	Palian River Watershed	Marbel RIS 1 & 2	South Cotabato	Marbel & Tupi	20,675	3,557
Minadanao RB	Alip River Watershed	Alip RIS	Sultan Kudarat	Columbio, Lutayan	37,950	1,500
Total					476,015	48,411

Biodiversity Resources

Region 12 has four proclaimed protected areas which serve as habitats of various terrestrial and marine species. These areas as listed in table 7 are classified as protected landscape, protected seascapes, game refuge and bird sanctuary and national parks. Apart from the biodiversity resources they contain, these protected areas provide livelihood to local communities and serve as nature-based tourism areas.

Table 7. List of Protected Areas in Region 12

Name	Location	Area (ha)	PA Classification
Mount Matutum	South Cotabato	15,600	Protected Landscape
Sarangani Bay	Sarangani	215,950	Protected Seascape
Lake Buluan	Cotabato	6,300	Game refuge and bird sanctuary
Mount Apo*	Cotabato	3,632.74	National Parks
TOTAL		241,483	

* Portions of the PA are part of region 11

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

Nature-Based Tourism Areas

The region boasts of various eco-tourism destinations, such as, Lake Sebu, Mt. Apo, and the Gumasa beaches, including diving sites, historic caves and bird and bat sanctuaries. The following areas are among the frequently visited tourist destinations in region 12.

Mt. Apo – This area is famous for mountain climbing. The mountain may be climbed year-round through several trails leading to the summit, coming from Kidapawan, North Cotabato. An average hike requires 2–4 days. Various sights include Lake Venado, one of the highest lakes in the Philippines, and the old crater of Mt. Apo near its summit.

Lake Sebu – This is a natural lake located in the municipality of Lake Sebu, South Cotabato and within the Alah Valley region. The Philippine government has recognized it as one of the country's most important watersheds. Apart from supplying water for irrigation to the provinces of Sultan Kudarat and South Cotabato. Lake Sebu is also a prime eco-tourism destination, famous for its 2 km Zipline, which considered longest in the Philippines.

Baras Bird Sanctuary – This most visited site in Tacurong, is truly a humbling experience. In an almost two hectares of land lying by a river bank, the crack of dawn offers a melodious harmony of birds; thousands dot the skies also during sunsets, a pleasure for bird watchers.

Gumasa Beach in Glan – Considered as the "Small Boracay in Mindanao" Barangay Gumasa has a six kilometer-long crescent beach on Sarangani's eastern shore and only about an hour's drive from General Santos City. The white sand and fine crystal lands attracts local tourists

Fishport Complex – With the advent of the operation of General Santos City Fish Port Complex, post-harvest technology equipment needed to prolong the shelf-life of tuna and

other species of fish, are made available, thus playing a vital role for trading and other post harvest activities. Aside from providing economic opportunities to local populations, the fishport complex has now evolved to be a major tourist destination in region 12 (http://philippinesmyphilippines.wordpress.com).

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 12, the estimated increase in temperature will range from 1.9ºC to 2.5ºC, with higher temperature increase during the months of March to May. Meanwhile, decrease in rainfall is estimated to range from -4.2% to -18%. These reductions in rainfall is mostly expected from March to August, while up to 15.6% increase in rainfall is expected during the rainy months of December, January and February (table 8 and 9).

Table 8. Seasonal temperature increases in 2050 under medium-range emission scenario, Region 12

Provinces	Observed Baseline in °C (1971-2000)				Change in 2050 in °C (2036-2065)			
	DJF	MAM	JJA	SON	DJF	MAM	JJA	SON
North Cotabato	26.8	27.9	27.0	27.1	2.1	2.5	2.4	2.1
Sarangani	27.7	28.4	27.3	27.6	1.9	2.4	2.2	2.0
South Cotabato	27.7	28.5	27.4	27.7	2.0	2.3	2.2	2.1
Sultan Kudarat	27.8	28.6	27.6	27.8	2.0	2.2	2.2	2.0

Source: PAGASA, 2011

Table 9. Seasonal rainfall change (in %) in 2050 under medium-range emission scenario in Region 12

Provinces	Observed Baseline (1971-2000)				Change in 2050 (2036-2065)			
	DJF	MAM	JJA	SON	DJF	MAM	JJA	SON
North Cotabato	235.4	353.2	572.5	486.0	8.1	-4.5	-8.7	-4.2
Sarangani	212.3	212.6	333.6	302.5	15.6	-17.6	-10.4	-5.3
South Cotabato	183.3	234.1	402.8	351.7	8.6	-10.8	-18.0	-14.4
Sultan Kudarat	189.3	311.0	513.1	448.7	7.5	-4.2	-13.6	1.3

Source: PAGASA (2011)

With more rains during the rainy season, floods, soil erosion and landslide may be aggravated endangering lives and properties of communities especially in Sarangani province. However, it is apparent that region 12 will have lesser rainfall in most time of the year in 2050. As such, prolonged dry season is more likely to occur in the region, which could result to significant damages to crops. Added to this scenario is the risk to high temperature increase in region 12 which could lead to more forest fires and consequently to loss of biodiversity.

III. Development Challenges in the Forestry Sector of Region 12

The challenges faced by the forestry sector in Region 12 is summarized in the succeeding discussions

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1. There is a need to strengthen the protection and conservation of existing forests and rehabilitate degraded forestlands in Region 12. With an annual loss of about 14,311 hectares, all the existing forests in the region would be lost by 2027 if current condition remain and forest protection efforts are not strengthened.

2. Being a major source of hydroelectric power to Mindanao and supporting the irrigation requirement of about 48,411 hectares of NIS service areas, the protection and rehabilitation of the watersheds of region 12 is very crucial. The ability of the region to continuously supply irrigation and domestic water as well as hydro electric energy may be compromised if the watersheds are not adequately protected and land uses within the watersheds are not harmonized.

3. Loss of Biodiversity is a critical problem that has been going on in region 12. A closer examination of the forest cover loss data in the region would show that large areas of close forests (72,137 hectares) had been destroyed in the entire region in a span of 7 years from 2003 to 2010. Since close forests are known to contain rich biodiversity resources, large scale destruction of this type of forest imply significant loss of habitats of important biodiversity species. Among the provinces of region 12, Sarangani and, South Cotabato are the most critical provinces as they lost large areas of close forests (28,132 hectares and 25,769 hectares, respectively).

4. Reducing the impacts of climate change hazards should be given priority attention. Region 12 is vulnerable to climate related hazards such as drought, floods, landslides, storm surge, 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 including their livelihood. Floods, drought and forest fires are the high risk hazards in region 12 because of the projected decrease in rainfall and temperature increase in most times of the year in 2050. Appropriate mitigation and adaptation plans will have to be formulated and implemented in order that LGUs and communities can respond to climate changes.

5. National demand for timber and fuelwood has increased considerably due to population increase and expanding economy of the country. However because of the moratorium on timber harvesting in natural forests, this demand is mainly addressed through wood imports which drains much on our foreign exchange reserve. It is therefore necessary to establish forest plantations locally to internally meet wood demand in the country. The Mindanao region, which includes region 12, is more in a position to respond to this need because of the favourable climatic conditions for tree plantation development.

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 12 include the following:

1. It is strategically located in Mindanao and the BIMP-East ASEAN Growth Area (EAGA). Its location facilitates the export of various products and eases mobility of people in the area.
2. The region has world-class infrastructure facilities, such as the General Santos International Airport, the General Santos Port and the various NIA irrigation systems
3. Fish processing facilities located at the General Santos Fishport Complex.
4. The Mt. Apo Geothermal Plant located in Kidapawan City, Cotabato Province which contributes to the power requirement of the Mindanao Grid.
5. The various eco-tourism destinations, such as, Lake Sebu, Mt. Apo, and the Gumasa beaches, including diving sites, historic caves and bird and bat sanctuaries.
6. The development of mining industry has great potential for spurring economic growth in the region. Investments in this sector is expected to reach 191.4 billion pesos that would generate around 15,000 jobs in the next six years.
7. Presence of watershed reservations that provide water for dams and other reservoirs for irrigation, power generation and for domestic/ industrial use;
8. Extensive areas of forests, lakes, rivers, biodiversity resources, beaches and other marine resources that are potential for ecotourism;
9. Existing plantations of timber, banana and fruit trees, such as durian, that provide livelihood to local population and which have potential for agroforestry farms;
10. Established markets for various products such as durian, banana, rice, rubber, fuelwood and other non-timber products;
11. Large areas of existing forests that can be supported through REDD +
12. Relatively high rainfall in most provinces and
13. Low exposure to typhoon

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. Ecotourism
2. Power generation
3. Water production for domestic use and to support rice production;
4. Timber products

5. Fuelwood products
6. Cattle
7. Fisheries products such as tuna and shrimps
8. High value crops such as coffee, oil palm, banana and rubber
9. Handicrafts

The matrix of comparative advantages and competitive goods and services of Region 12 as identified by DENR Region 12 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 has adopted 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 12 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. Watershed rehabilitation to ensure availability of water for irrigation, power generation and for domestic/ industrial uses
6. Agroforestry farm development to diversify livelihood & support production of rubber, coffee, cacao and other fruit trees;
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 21 LGUs into their comprehensive land use plans;
2. To undertake vulnerability assessment and adaptation planning in 8 priority watersheds;
3. To formulate the integrated watershed management plan of 6 priority watersheds;
4. To protect 302,605 hectares of existing forests and plantations starting in 2016 gradually increasing to 549,171 hectares in 2028;
5. To diversify livelihood of local communities by developing 11,223 hectares of agroforestry farms;
6. To rehabilitate 27,390 hectares of protection forests through assisted natural regeneration.
7. To implement REDD+ in Sultan Kudarat

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 10.

Table 10. 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.)	8	0	0	8
2. Formulation of integrated watershed management plans (no.)	1	5	0	6
3. Updating of IWMP (No)				
4. FLUP formulation (no. of LGUs)	2	19	0	21
5. Protection of existing forests and plantations including mangroves (ha)	302,605	427,806	549,171	549,171
6. Mangrove rehabilitation (ha)	0	0	0	0
7. Agroforestry development (mixed crops in ha)	2,714	8,509	0	11,223
8. Rehabilitation of protection forests (ANR) in ha.	27,390	0	0	27,390
9. Training on vulnerability assessment, adaptation planning, integrated pest management, IWM, FLUP (no. of training)	0	24	24	48
10. REDD+ implementation (No. Of province)	0	0	1	1

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 12 will give more focus on addressing demands for timber, fuelwood, cattle, agroforestry products, water, biodiversity for ecotourism, and the need to improve environmental conditions especially in urban centers..

Objectives

The specific objectives of this program are:

1. To develop 215,509 hectares of tree plantations for timber production;
2. To develop 5,000 hectares of plantations for fuelwood production;
3. To protect, conserve and rehabilitate 7,855 hectares of priority watersheds for power generation, domestic and industrial use and for irrigation to support production of rice and other agricultural crops;
4. To develop 16,349 hectares of pasture areas to address local demands for meat; and
5. To develop at least 500 hectares of forest parks, and green belts in key cities and urban centers 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 11.

Table 11. 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	1,144,400	0	1,144,400
2. Development of seed production areas in all provinces(no.of sites)	0	4	0	4
3. Establishment of mechanized nurseries (no.)	0	1	0	1
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	0	100,509	115,000	215,509
6. Management of grazing lands (ha)	11,966	12,289	16,349	16,349
7. Watershed rehabilitation				
Vegetative SWC (ha)	1,050	6,475	330	7,855
Structural soil and water conservation (cu. Meters)	0	10,601	0	10,601
Organization and capacitation of watershed management bodies , such as the watershed management council (no.)	0	20	0	20
Identification and characterization of other watersheds	0	5	0	5
8. Support to urban forestry in major cities and urban centers (hectares)	0	500	0	500

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 12 are summarized in table 12.

Table 12. Summary of Activities, Targets and Period of Implementation to Institutionalize Responsive Governance in Region 12

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	34	0	34
2. Tenure issuance in open access forestlands (ha)	0	50,000	150,000	200,000
3. Organization and capacitation of multi-sectoral collaborative management bodies (region and province)	25	25	0	25
4. Creation and operationalization of regional/ provincial TWG on climate change (no.)	0	7	6	13
5. Capability enhancement for DENR/ LGUs (no. of trainings)	5	24	24	53
6. Semi-annual / annual monitoring and evaluation of PMPCRFD implementation (No.)	2	12	12	26
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	50	0	50
2. Upgrading of regional MIS facilities (no.)	0	5	5	5
3. Implementation of forest certification (Provinces)	0	4	4	4
4. Identification and assessment of sustainable sources of financing in forestry projects (No. of sites assessed)	0	4	4	8
5.Forestry research (no. of studies)	0	6	6	12

VI. Plan Implementation

This regional action plan shall be implemented by DENR Region 12 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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ANNEX

Annex 1. Comparative Advantages and Competitive Goods and Services, Region 12

Comparative advantages	Durian & fruits	Cattle	Fuel-wood	Rice	Timber	Handicraft	water	ecotourism	fisheries	Hydro power	rubber	cacao	coffee	REDD+
Vast areas of A & D lands				X										
Existing watersheds				X			X			X				
grazing lands		X												
less typhoons	X		X		X						X			
more rainfall	X		X		X						X	X	X	
dams for irrigation and power				X			X			X				
Existing tree plantations			X		X						X			
fruit orchards	X							X						
established markets	X	X	X	X	X	X			X	X	X	X	X	
skilled handicraft makers						X								
Processing plants						X			X		X			
Natural forests							X	X		X				X
Protected areas								X						X
caves, waterfalls, lakes, rivers, beaches								X						
mangroves									X					
Private investors	X	X	X		X	X		X	X		X	X	X	