



# 10-YEAR SOLID WASTE MANAGEMENT PLAN

CY 2024-2033

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## EXECUTIVE SUMMARY

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This updated 10-Year (CY 2024-2033) Solid Waste Management Plan of La Union was prepared to ensure the continuity of implementation of solid waste management programs, projects, and activities in the Province in accordance with the National Solid Waste Management Framework and pursuant to the provisions of the Republic Act 9003 or the Ecological Solid Waste Management Act of 2000.

This plan supports, complements, and integrates the approved 10-Year Solid Waste Management of the component Local Government Units (LGUs) of La Union to ensure optimum and efficient management of solid waste provincewide. This plan follows the waste management hierarchy demonstrating circular economy aligned with the Sustainable Development Goals (SDGs), specifically on SDG No. 12-5 "Substantially Reduce Waste Generation." It covers all the elements of the conceptual framework of RA 9003 from waste generation, storage, collection, processing and recovery, and disposal.

This plan focuses on strategies on source reduction, waste minimization, increasing collection coverage, building partnerships for recovery and recycling, provision of solid waste management support equipment, introducing innovative program and technology, upgrading existing final waste disposal facilities, and social and behavioral change communication strategies. This plan also aims to continue and enhance the incentivized programs of the PGLU for all the sectors of the society – the LGUs, barangays, institutions, establishments, academe, and non-government organizations in recognition of their invaluable support and cooperation on the implementation of various solid waste management programs in the Province.

To ensure the effectiveness and efficiency in executing and completing those strategies especially on the monitoring and enforcement of compliances to various laws and regulations, this plan underscores the need to strengthen the institutional aspects or human resource in solid waste management by steering the presence of city/municipal environment and natural resources office/officer in all of the component LGUs and enhancing the capacities of LGUs in the administration of solid waste management in their respective jurisdictions. As stated in the 2023 Plastic Code of La Union, this plan targets the creation of the Environmental Education and Enforcement Unit as the monitoring arm of the 2023 Plastic Code of La Union.

With the hope to establish a unified policy in the Province in terms of banning the use of single-use plastic, the 2023 Plastic Code of La Union was approved and hopes to bring significant reduction in the generation of plastic wastes in the Province. Moreover, this Ordinance also intends to introduce positive behavioral change in the community by shifting away from the “throw-away” attitude of consumers to creating a habit of using reusables.

This plan also includes research and development on the emerging solid waste management concerns such as disaster wastes management, reduction and prevention of marine litters/ debris, prevalence of microplastic pollution, production of alternative eco-friendly packaging materials, transboundary waste issues and the conduct of Waste Analysis and Characterization Study (WACS) as a means of monitoring and evaluation of programs and activities targeted in the plan.

This plan also targets the establishment of various pollution control and mitigation infrastructures such as wastewater treatment facilities, upgraded sanitary landfill facilities, trash traps, and materials recovery facilities. The Province intends to

enter or explore Public-Private Partnership on the establishment of Treatment, Storage, and Disposal Facility and Waste-to-Energy Facility.

In terms of financial aspect, the projected investment and annual cost is also presented in the plan. The budget for the implementation of solid waste management programs and projects will be primarily sourced from the Internal Revenue Allocation (IRA) and specifically from the 20% Development Fund, General Fund, and Special Purpose Appropriations.

### Introduction

#### 1.1. Purpose

Pursuant to Section 16 of the Republic Act 9003 or the Ecological Solid Waste Management Act of 2000 mandating all provinces, cities or municipalities, through their local solid waste management boards, to prepare its respective 10-Year Solid Waste Management Plans consistent with the National Solid Waste Management Framework and to ensure the continuity of the implementation of the provincial plan, this updated 10-Year Solid Waste Management Plan was prepared covering the period of CY 2024 up to CY 2033.

This waste management plan reflects the specific programs, projects, and activities as well as strategic initiatives of the Provincial Government that supports, complements, and integrates the approved 10-Year Solid Waste Management of the component Local Government Units (LGUs) of La Union.

This plan focuses on promoting, advocating, and educating the general public on waste minimization, waste diversion, segregation, recycling, composting, community participation on infrastructure projects, research and development, monitoring and evaluation, celebration of environmental events and advocacies, capacity development, and updates on laws/ compliances to environmental permits, registrations, and reporting duties that would ensure efficient management of solid wastes provincewide.



## 1.2 Approach

This plan entails various approaches and strategies such as the conduct of Waste Analysis and Characterization Study in accordance to the National Solid Waste Management Commission (NSWMC) Resolution No. 1380, series of 2020 “Adopting the Guidelines on the Waste Analysis and Characterization Study and its Related Manual”, review of existing information and related studies, conduct of consultation meetings with the Provincial Solid Waste Management Board members and public hearings with stakeholders. Data gathering was also conducted from various agencies and offices such as the Provincial Planning and Development Office, Provincial Engineering Office, Provincial General Services Office, Department of Environment and Natural Resources Region 1, Philippine Statistics Authority, and from the approved 10-Year Solid Waste Management Plans of component LGUs. Various trainings and orientations were also attended for skills enhancement on implementing various solid waste management programs and projects. Self-administered survey questionnaires as data collection tool was also utilized in monitoring and data gathering during the time of pandemic.

This plan employs holistic approach, engaging all stakeholders, from local authorities (provincial, municipal/city/barangays), as well as the national and regional agencies, non-government organizations, community organizations, service users or the waste generators, environmental advocates, private sectors (both formal and informal) in all the elements of waste system; covering all aspects of solid waste management such as on institutional, technical, financial, social, legal and environmental aspects.

### 1.3. Acknowledgement

This 10-Year Solid Waste Management Plan CY 2024-2033 supports the Province's vision to become the Heart of Agri-Tourism in Northern Luzon by 2025, as the agriculture and tourism work hand in hand with environment, sustainable and efficient solid waste management is one of the driving elements that boosts agri-tourism in the Province.

Aligned with the Sustainable Development Goals, the Provincial Government of La Union recognizes the importance of ensuring efficient management of solid wastes provincewide for building sustainable and resilient communities. Those programs, projects, and activities, herein stated and targeted in this plan, are geared towards transformative governance that catalyzes the realization of the Province's vision to position La Union as the Heart of Agri-Tourism in Northern Luzon by 2025.

Through this plan, the Provincial Government of La Union commits to uphold an effective, efficient, and sustainable ecological solid waste management program through strong and dynamic stakeholder participation and environmental governance. With #La Union Probinsyanihan, the Provincial Government remains resolute in its commitment in protecting the environment for the future generations to have a better place to live in.

### Provincial Profile

#### 21. Location

The Province of La Union is located in the southwestern part of the Ilocos Region, bounded on the north and northeast by Ilocos Sur; on the south by Pangasinan; on the east by Benguet; and on the west by the Lingayen Gulf and West Philippine Sea.

Among the Ilocos provinces, La Union is the smallest in terms of land area with 149,309 hectares or equivalent to 11.60% of the region's 1,284,019 hectares (about 0.5 percent of the total land area of the country).

The Province of La Union is divided into two political districts. District 1's land area of 70,069 hectares is 46.93% of the province's area and 5.46 % of the region's area. The municipality of San Gabriel has the biggest land area with a share of 10.38 percent or 15,500 hectares followed by the City of San Fernando (10,688 hectares) while Luna has the smallest area with only about 3.01 % (4,489 hectares).

Second District's land area is 79,240 hectares, which is 53.07 % of the province's area and 6.17 % of the region. Bagulin has the widest area (14,762 hectares), followed by Aringay (12,207 hectares) while Sto. Tomas has the least (3,242 hectares).

The province accounts the second least of the number of municipalities and barangays in the region. Under its jurisdiction are one (1) city and 19

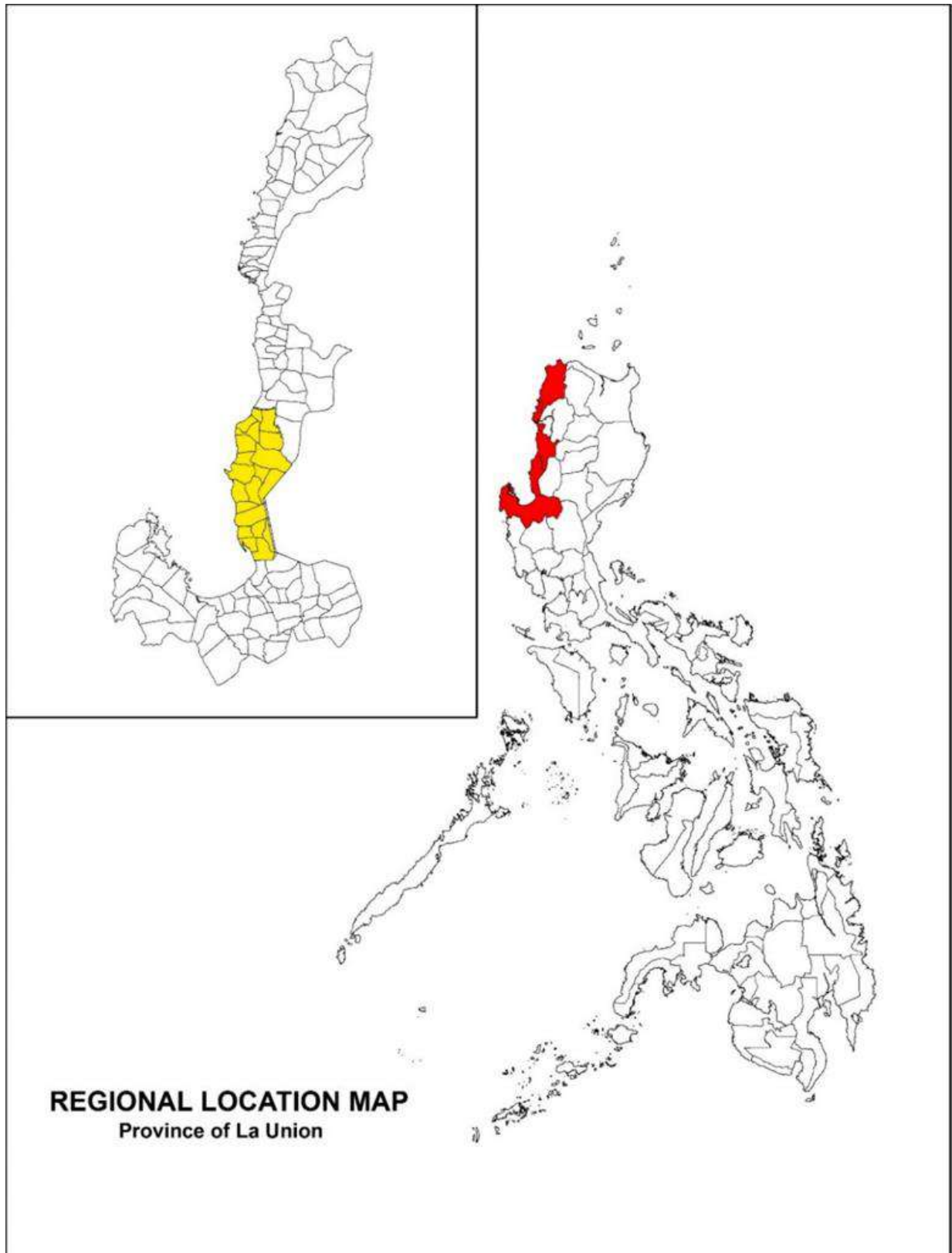
municipalities which is equivalent to 16.39 percent of the region, and 576 barangays accounting to 17.76 % of the region's total.

Table 21 Land Area, Number of Barangays, By Municipality/City in La Union

District Municipality/City	Land Area (Hectares)	%	Number of Barangays	%
<b>DISTRICT I</b>	<b>70,069</b>	<b>46.93</b>	<b>299</b>	<b>51.91</b>
Bacnotan	6,507	4.36	47	8.16
Balaoan	6,870	4.60	36	6.25
Bangar	3,604	2.41	33	5.73
Luna	4,489	3.01	40	6.94
City of San Fernando	10,688	7.16	59	10.24
San Gabriel	15,500	10.38	15	2.60
San Juan	5,186	3.47	41	7.12
Santol	8,237	5.52	11	1.91
Sudipen	8,988	6.02	17	2.95
<b>DISTRICT II</b>	<b>79,240</b>	<b>53.07</b>	<b>277</b>	<b>48.09</b>
Agoo	5,135	3.44	49	8.51
Aringay	12,207	8.18	24	4.17
Bagulin	14,762	9.89	10	1.74
Bauang	7,160	4.80	39	6.77
Burgos	4,516	3.02	12	2.08
Caba	4,862	3.26	17	2.95
Naguilian	8,740	5.85	37	6.42
Pugo	5,585	3.74	14	2.43
Rosario	7,000	4.69	33	5.73
Santo Tomas	3,242	2.17	24	4.17
Tubao	6,031	4.04	18	3.13
<b>LA UNION</b>	<b>149,309</b>	<b>100.00</b>	<b>576</b>	<b>100.00</b>

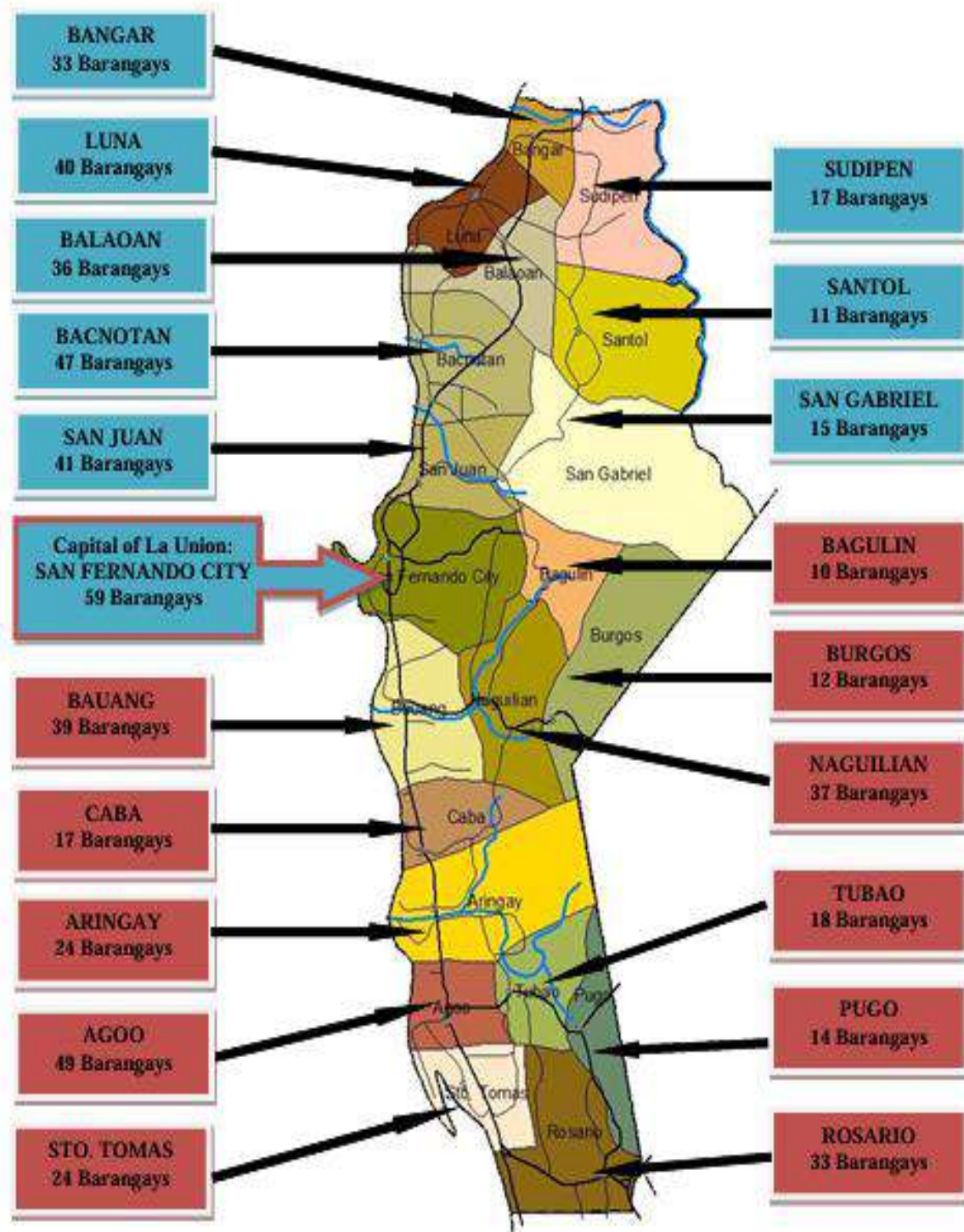
Source of Data:

- DENR - Land Evaluation Party, San Fernando City (La Union)
- DENR - Land Management Services
- National Statistics Office



**Figure 21.1 Regional Location Map of La Union Province**

Source: Provincial Development and Physical Framework Plan 2017-2025



Source of Data: Provincial Planning and Development Office

**Figure 21.2 Map of La Union Showing its City and Municipalities**  
 Source: Provincial Development and Physical Framework Plan 2017-2025



### **Existing Settlement/Growth Pattern**

The major settlement/growth area in the province is in the City of San Fernando which is also the economic and educational hub of the province. The major growth center role of the City will influence the growth of its neighboring towns. The towns of Bauang, Naguilian, and Bacnotan are a minor growth center that will take a greater role as spillover of City's urbanization. The towns of San Juan, Bacnotan, San Gabriel and Bagulin will be benefited by the City's influence. These towns comprise the Central La Union Metro Planning Area (CELUMEPA).

The minor growth center of Agoo and Rosario will radiate to its neighboring towns of Pugo, Tubao, Caba, Aringay and Sto. Tomas. The northern town of Bangar, also a minor growth area, will influence the growth of Luna, Sudipen, Santol and Balaoan.

## **22 History**

A year after Adelantado Miguel Lopez de Legazpi made Manila the capital of the Philippines on June 24, 1571, the Spaniards started the colonization of Ilokos. In June 1572, the conquistadores led by Juan Salcedo (grandson of Legazpi) landed in Agoo, then a part of Pangasinan called "el puerto de Japon" because enterprising Japanese merchants have been trading with the natives through this port.

The Spaniards marched up north without any resistance. They had their first taste of the Ilokanos' bravery and fighting heart during a historic battle in Purao (literally, "white" and maybe due to the white sands of the beach)

now known as Balaoan. The Spaniards befriended the Ilokanos who reluctantly acceded to be under Spanish rule.

After Cebu became the first provincia in 1565, new provinces have been created by the Spaniards. Three main functions were considered: political-civil administration, ecclesiastical governance and geographical considerations.

For more than two and one-half centuries, the original Ilokos province remained intact until 1818 when it split into Ilokos Norte and Ilokos Sur. In 1846, Abra was created by Governor General Narciso Zaldúa Claveria.

Governor General Claveria was a visionary administrator. He believed that combining three contiguous areas that are far from their respective provincial capitals was a viable solution to the demands of political-civil administration. He also saw the territory's agricultural and commercial growth potentials and the kicker was the extension of Hispanic civilization and Christianity to the area. Bangar, Namacpacan and Balaoan in the southern portion of Ilokos Sur were quite a distance from the cabecera of Vigan and in almost like manner, Sto. Tomas, Agoo, Aringay, Caba, Bauang, Naguilian, San Fernando, San Juan and Bacnotan were that far from Pangasinan's capital of Lingayen. The 40-45 rancherias in the depths of Central Cordillera of the Benguet district bordered by the three Ilokos Sur towns and the nine of Pangasinan have even worse problems.

Thus, on October 29, 1849, Governor General Claveria signed the proposal (promovido) to unite the Pangasinan-Ilokos-Cordillera areas into a new province called La Union (the official name designated by Claveria himself). For 124 days, high and important Spanish colonial officers studied and deliberated on the proposition to create La Union or not. On March 2,

1850, Governor General Antonio Maria Blanco signed the Superior Decreto that founded La Union – the 34th province since the founding of Cebu in 1565. It was classified as a political-military government (gobierno politico-militar). Blanco appointed on March 4, 1850 Captain Toribio Ruiz de la Escalera (Claveria's former trusted aide de camp) as the first Gobernador Military y Politico. La Union is the union of lands, people, cultures and resources. On April 18, 1854, Queen Isabella II of Spain issued the royal decree (real orden) from Madrid confirming Blanco's Superior Decreto.

By 1860, there was a dramatic progress in commerce and agriculture in the province primarily because of tobacco. Spanish authorities banked on the prized leaf for further economic development. The industry was so lucrative that a Tobacco Monopoly was established. All tobacco leaves were strictly monitored and bought exclusively by the government at a fixed price.

By 1896, the people of La Union had enough of the Spanish atrocities. The torture of the native priests, Padres Adriano Garces of Balaoan, Mariano Gaerlan of San Fernando and Mariano Dacanay of Bacnotan; the execution of Balaoan's Siete Martires, majority of whom are ancestors of Board Member Joaquin C. Ostrea, Jr.; the persecution of Masons, whose membership included the elite natives; and others have all the more agitated the people to unite and fight their masters for three centuries. On May 22, 1898, a shot from a revolver killed the much-hated Friar Mariano Garcia of Santo Tomas, it was a shot heard in the whole province which eventually ignited the revolution in what the Spaniards used to call, "Una Provincia Modelo."

Led by Manuel Bondoc Tinio, a boy general under the command of General Emilio Aguinaldo, the Spaniards were finally defeated in La Union,

some of whom escaped and sought refuge in Vigan. With the help of the Americans, the Filipinos were finally freed from Spain only to find out later that they will be subjected to a new colonial rule.

A Revolutionary Government was established with Aguinaldo as President. Tinio acted as “de facto governor” of La Union but was later on replaced by Dr. Lucino Almeida as Presidente Provincial. During the American occupation, Dr. Almeida was reappointed as provincial chief, only to be convicted and exiled after his revolutionary connections were discovered. In defense of their hard-fought freedom, the people of La Union resisted American power and maintained their allegiance to Aguinaldo. Due however to the superior American military firepower, the whole province and the whole archipelago, were finally subdued and pacified.

Joaquin Luna	1904-1907
Sixto Zanduetta	1908-1919
Pio Ancheta	1919-1922, 1931
Thomas De Guzman	1922-1923, 1928-1931
Juan Lucero	1923-1929
Mauro Ortiz	1931-1934
Juan Rivera	1934-1937
Francisco Nisce	1937-1940
Bernardo Gapuz	1940

The Americans prioritized education during their rule. Schools were massively constructed and public education attracted the Filipinos. Democracy, which was given equal importance, facilitated the election of La Union's first Civil Governor in 1901 in the person of Don Joaquin Ortega, grandfather of Governor Manuel C. Ortega. Nine other equally able governors followed Don Joaquin before the outbreak of World War II:

Just as when the Filipinos were awaiting independence as promised by the Americans under the Tydings-Mcduffie Law, World War II exploded. The Filipinos gallantly fought side by side with the Americans. Amidst all the chaos and anarchy, three provincial chieftains rose to the occasion to lead the people of La Union, Gov. Bernardo Gapuz (1940), Gov. Jorge Camacho (1941-1942) and Gov. Bonifacio Tadiar (1942-1944).

On January 4, 1945, the tides of war changed in La Union as Filipino-American soldiers captured Baroro Bridge in Bacnotan, a strategic bridge that connects the rest of Northern Luzon to San Fernando. The victory ensured the liberation of La Union. It was followed by the historic Battle of San Fernando and Bacsil Ridge. Defeated, the Japanese Imperial Army retreated to Baguio City where they joined their comrades and made their last stand. From the ashes of war, La Union underwent massive reconstruction and rehabilitation. Patient and hardworking, the people of La Union marched on to progress and development led by a new breed of innovative, highly competent and down to earth governors.

Agaton Yaranon	1946-1947
Doroteo Aguila	1948-1951
Juan Carbonell	1952-1955
Bernardo Gapuz	1956-1959
Eulogio De Guzman	1960-1967
Juvenal Guerrero	1968-1977
Tomas Asprer	1977-1986
Robert V. Dulay	1986-1987
Joaquin Ortega	1988-1992
Justo O. Orros	1992-2001
Victor F. Ortega	2001-2007
Manuel C. Ortega	2007-2016
Francisco Emmanuel R. Ortega	2016- 2022
Raphaelle Veronica Ortega-David	2022-present

## 23. Population

In year 2015, the Census of Population showed that La Union has a total population of 786,653 persons. Compared with the Regional Population of 5,026,128, the province rank number 3 in terms of population or 16 percent of the total regional population. The First District's population is 46 percent of the total population while District II has a bigger share of 54 percent because it covers a greater number of municipalities. Upland/rural municipalities of both districts have the least percentage share. The annual population growth rate from 2010- 2015 is 1.12 percent, a figure higher by 0.07 percent from that of the 2007-2010 figure which is 1.05 percent and lower by 0.22 from that of the 2000-2007 figure which is 1.27 percent. According to the 2015 actual population census of the Philippine Statistics Authority (PSA), the province's population is seen to double in a span of 62 years, or by year 2077. The annual population growth rate is higher than the region's 1.09 but relatively lower compared with the national APGR of 1.72. The First District has a relatively longer breathing space (77 years) to prepare for the doubling of its population due to a lower population growth rate of 0.89 percent. This is 25 years more than the doubling time of the population in the Second District. Six municipalities and one city of the province posted a high population growth. For District I, San Gabriel had the highest population growth rate of 1.71 percent and its population is expected to double in 40 years or by the year 2055 while Luna has the least at 0.23 percent and population is forecasted to double in 305 years (2320). In District II, the municipalities of Pugo at 3.40 percent, Naguilian at 2.18 percent and Sto. Tomas at 1.58 percent have the highest population growth rates. Their population is expected to double in 20 - 44 years or by year 2035 to year 2059. The municipality of Burgos, identified as an upland



area, has the least growth rate of 0.52 percent and its population is seen to double in 133 years (2148).

In 2020, the Census of Population showed that La Union had a total population of 822,352. Compared with the Regional Population of 5,301,139, the province ranked second with the most number of population or 15.5% of the total regional population. The First district comprises 45.79% of the total population while the second district has a bigger share of 54.21% of the total population of the province.

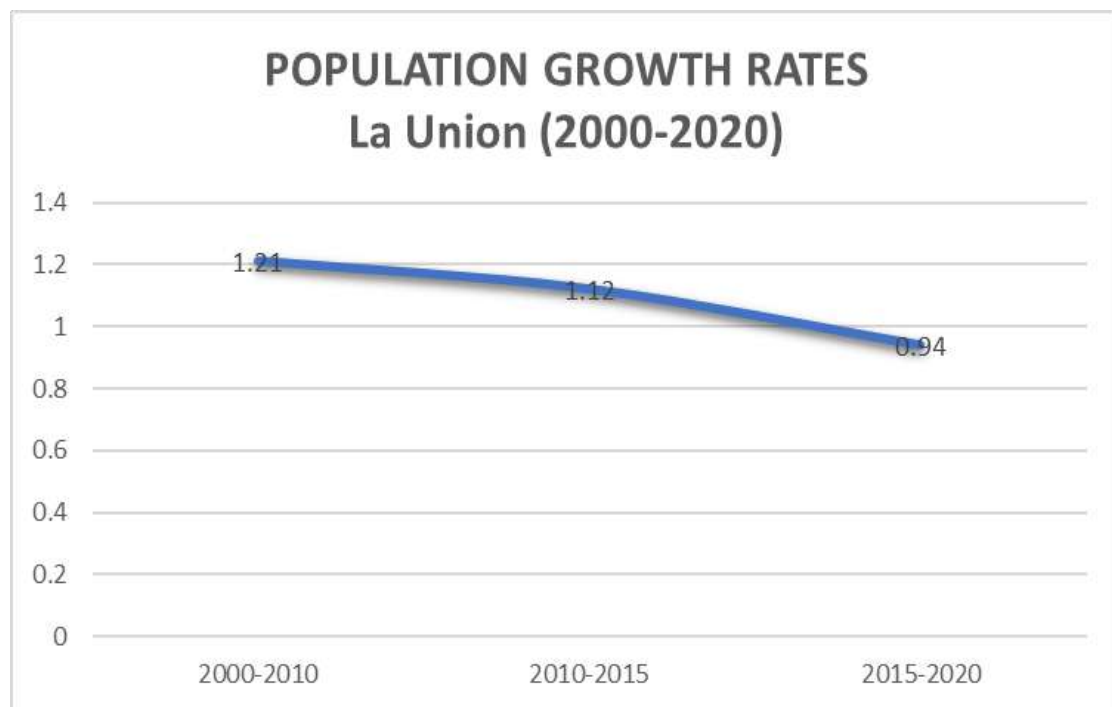


Figure 2.3.1. Province of La Union Population Growth Rates: 2000-2020

Source: Philippine Statistics Authority

Table 2.3.1 Population Density

City/ Municipality	Land Area (Hectares)	Population		Growth Rate 2015-2020	Population Density (persons/km)	
		2015	2020		2015	2020
District I						
Bacnotan	6507	42078	44388	1.13	538	568
Balaoan	6870	39188	40339	0.61	570	587
Bangar	3604	35947	38041	1.20	962	1018
Luna	4489	35802	37318	0.88	835	870
City of San Fernando	10688	121812	125640	0.65	1186	1223
San Gabriel	15500	18172	18943	0.88	140	146
San Juan	5186	37188	40507	1.81	651	70
Santol	8237	12476	14166	2.71	133	151
Sudipen	8988	17056	17187	0.16	175	176
District II						
Agoo	5135	63692	66028	0.76	1205	1250
Aringay	12207	47458	50380	1.26	561	596
Bagulin	14762	13456	14428	1.48	125	134
Bauang	7160	75032	78449	0.94	1026	1072
Burgos	4516	8067	9006	2.34	114	127
Caba	4862	22039	23119	1.01	476	499
Naguilian	8740	54221	52189	-0.80	518	499
Pugo	5585	19690	19337	-0.38	313	308
Rosario	7000	55458	60278	1.77	750	815
Santo Tomas	3242	39092	40846	0.93	611	638
Tubao	6031	28729	31763	2.13	566	626
La Union	149309	786653	822352	0.94	525	548

Source: Philippine Statistics Authority  
DENR-Land Evaluation Party

Table 2.3.2 Population Projection

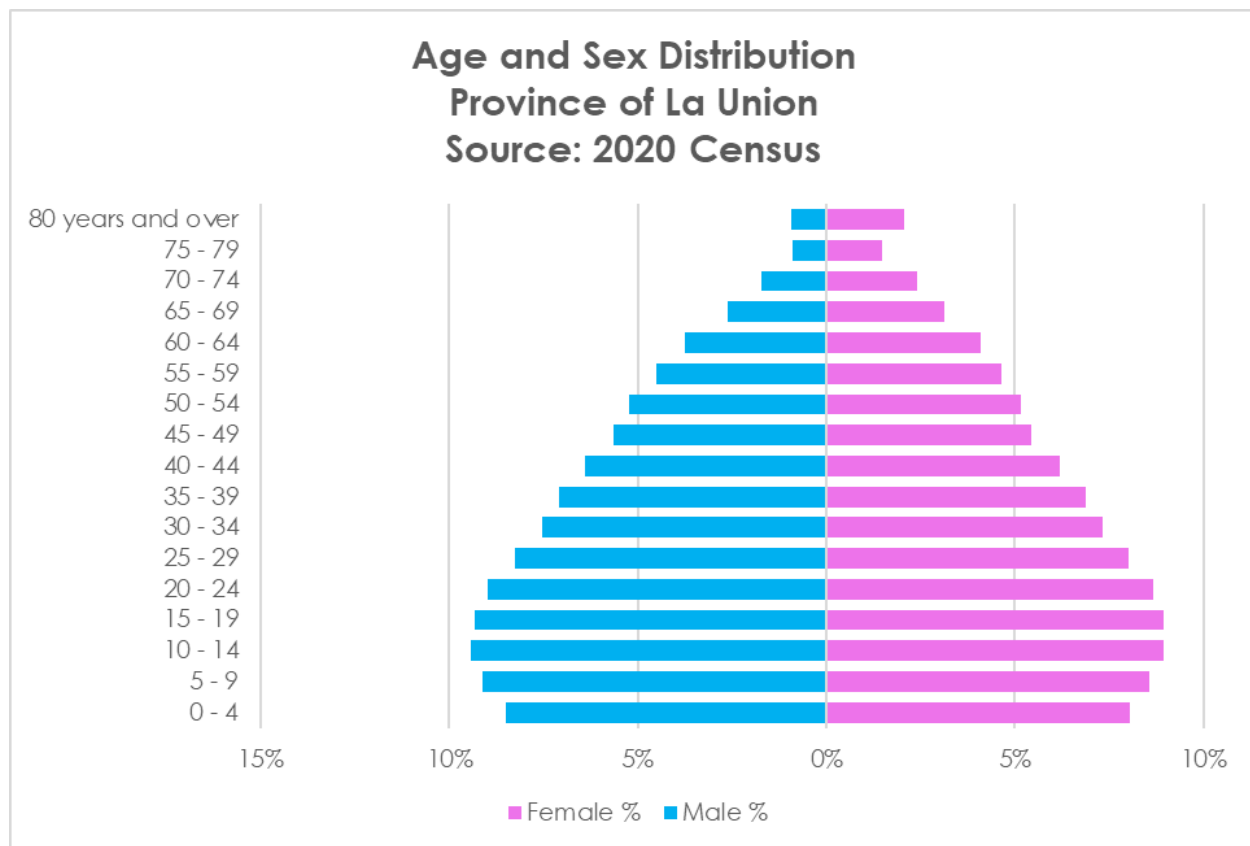
CITY/MUNICIPALITY	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
AGOO	67,595	67,914	68,193	68,500	68,808	69,118	69,429	69,741	70,055	70,370	70,687
ARINGAY	50,707	50,991	51,244	51,522	51,802	52,083	52,366	52,650	52,936	53,224	53,513
BACNOTAN	44,200	44,351	44,474	44,619	44,764	44,909	45,055	45,201	45,348	45,496	45,644
BAGULIN	14,644	14,760	14,868	14,983	15,099	15,216	15,334	15,452	15,572	15,692	15,814
BALAOAN	40,559	40,621	40,657	40,713	40,768	40,824	40,880	40,936	40,992	41,049	41,105
BANGAR	37,615	37,725	37,812	37,917	38,021	38,127	38,232	38,338	38,444	38,550	38,657
BAUANG	80,733	81,256	81,734	82,250	82,769	83,291	83,817	84,345	84,878	85,413	85,952
BURGOS	8,336	8,347	8,352	8,362	8,371	8,381	8,390	8,400	8,409	8,419	8,428
CABA	22,933	22,984	23,020	23,067	23,115	23,162	23,210	23,258	23,305	23,353	23,401

LUNA	36,891	36,926	36,938	36,967	36,997	37,026	37,056	37,085	37,115	37,144	37,174
NAGUILIAN	63,324	64,402	65,460	66,555	67,669	68,802	69,953	71,124	72,314	73,524	74,755
PUGO	25,257	25,994	26,736	27,501	28,287	29,097	29,929	30,785	31,666	32,571	33,503
ROSARIO	58,996	59,293	59,555	59,845	60,136	60,428	60,722	61,018	61,315	61,613	61,913
SANFERNANDO	130,849	131,670	132,416	133,224	134,036	134,854	135,677	136,504	137,337	138,175	139,018
SANGABRIEL	20,450	20,701	20,942	21,194	21,449	21,707	21,968	22,233	22,500	22,771	23,045
SAN JUAN	39,945	40,196	40,423	40,670	40,918	41,167	41,418	41,671	41,925	42,181	42,438
SANTOTOMAS	43,573	44,053	44,512	44,993	45,479	45,971	46,467	46,969	47,477	47,990	48,508
SANTOL	13,013	13,046	13,070	13,101	13,132	13,163	13,194	13,225	13,256	13,287	13,318
SUDIPEN	17,624	17,647	17,660	17,680	17,701	17,722	17,742	17,763	17,783	17,804	17,825
TUBAO	31,068	31,290	31,494	31,713	31,934	32,157	32,381	32,606	32,833	33,062	33,292
TOTAL	848,312	854,167	859,560	865,375	871,256	877,203	883,219	889,305	895,461	901,688	907,989

For the First District, the Municipality of Santol has the highest growth rate with 2.71 percent, while the Municipality of Sudipen has the lowest growth rate with 0.16 percent. For the Second District, the Municipality of Burgos recorded the highest growth rate with 2.34% while the Municipalities of Naguilian and Pugo recorded a negative growth rate with -0.80 and -0.38 respectively.

The annual population growth rate from 2015-2020 of the province is 0.94 percent, a figure lower by 0.18 percent from that of the 2010-2015 figure which is 1.12 percent and lower by 0.27 percent from the 2000-2010 figure which is 1.21 percent. The annual population growth rate is lower than the region's 1.13 percent population growth rate and also lower with the national population growth rate of 1.63 percent population growth rate.

## Age and Sex Distribution



**Figure 23.2 Province of La Union: Age and Sex Distribution (2020)**

Source: Philippine Statistics Authority

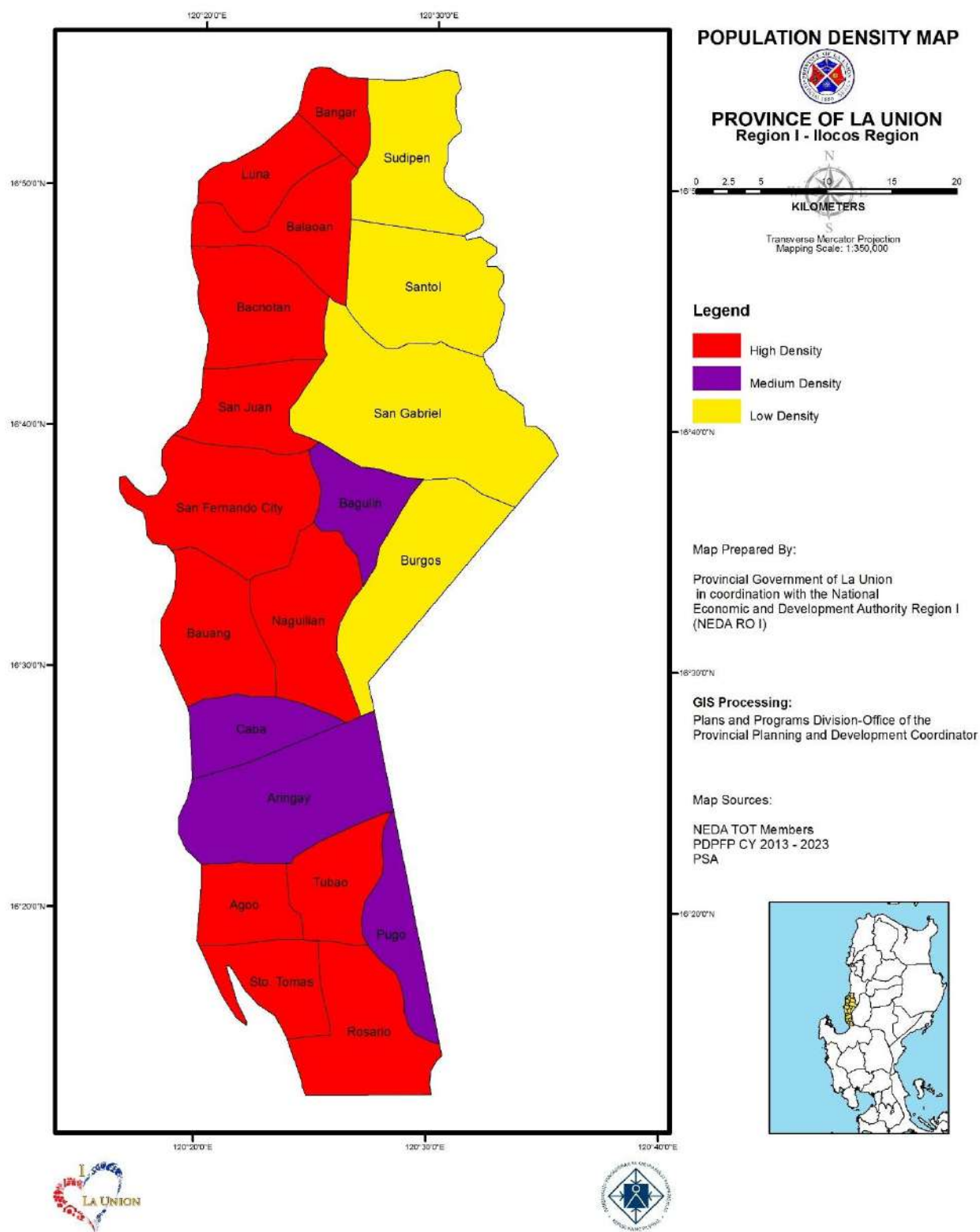
It can be noted that the population pyramid of the province is expansive. It means that the Province has larger numbers or percentages of the population in the younger age groups, usually with each age group smaller in size or proportion than the one born before it. Male population comprises 50.57 percent of the total population while the female population is 49.43 percent. The age group of 10-14 has the highest percentage in the total male and female population with 9.44 and 8.96 percent, respectively. The age group of 75-79 for both sex has the least percentage in the total population with 0.90 and 1.48 percent, respectively.

The province's population density increased from 497 in CY 2010 to 527 in CY 2015 which means that in CY 2015, 30 persons more were added to the

occupants of a square kilometer. Agoo, a first class municipality from the 2nd District has the highest population density of 1,240 (CY 2015) persons per square kilometer, followed by the Municipality of Sto. Tomas with population density of 1,206 (CY 2015) persons per square kilometer, while Bagulin, an upland municipality has the least with only 91 persons per square kilometer, San Gabriel of District I also considered an upland/rural municipality has the least population density of 117 persons per square kilometer.

### **Level of Urbanization**

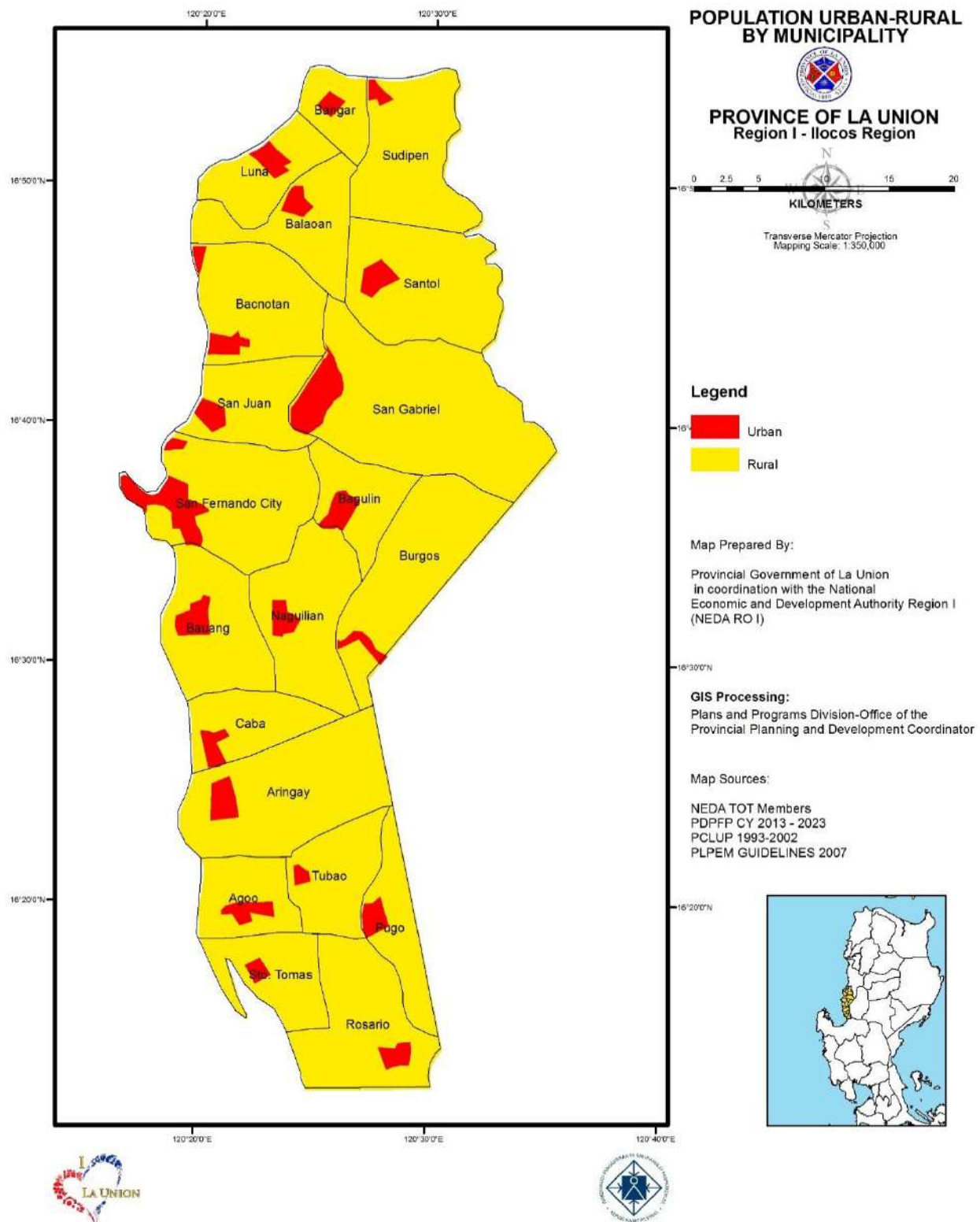
According to the 2010 census, of the total population of 741,906, it was projected that 14.42% resides in the urban areas while 73.84% are in the rural areas. This means that for every 100 residents 14 lives in the urban areas and 74 in the rural areas. In the City of San Fernando, there are 34 urban residents for every 100 residents while 57% are in the rural areas. The Municipality of Bauang has 14% who lives in the urban areas and 77% in the rural areas while in Agoo 13% are in the urban and 70% are in the rural areas. Moreover, data revealed that the province has faster tempo of urbanization (7.77%) relative to the region for the period 1980 to 1990. For the year 2000, there are 20 urban residents per 100 rural residents while in 2010 it was foreseen to decline to 15 urban residents per 100 rural residents.



**Figure 23.3. Population Density Map**

Source: Provincial Development and Physical Framework Plan 2017-2025





**Figure 23.4 Population Urban-Rural by Municipality/City**

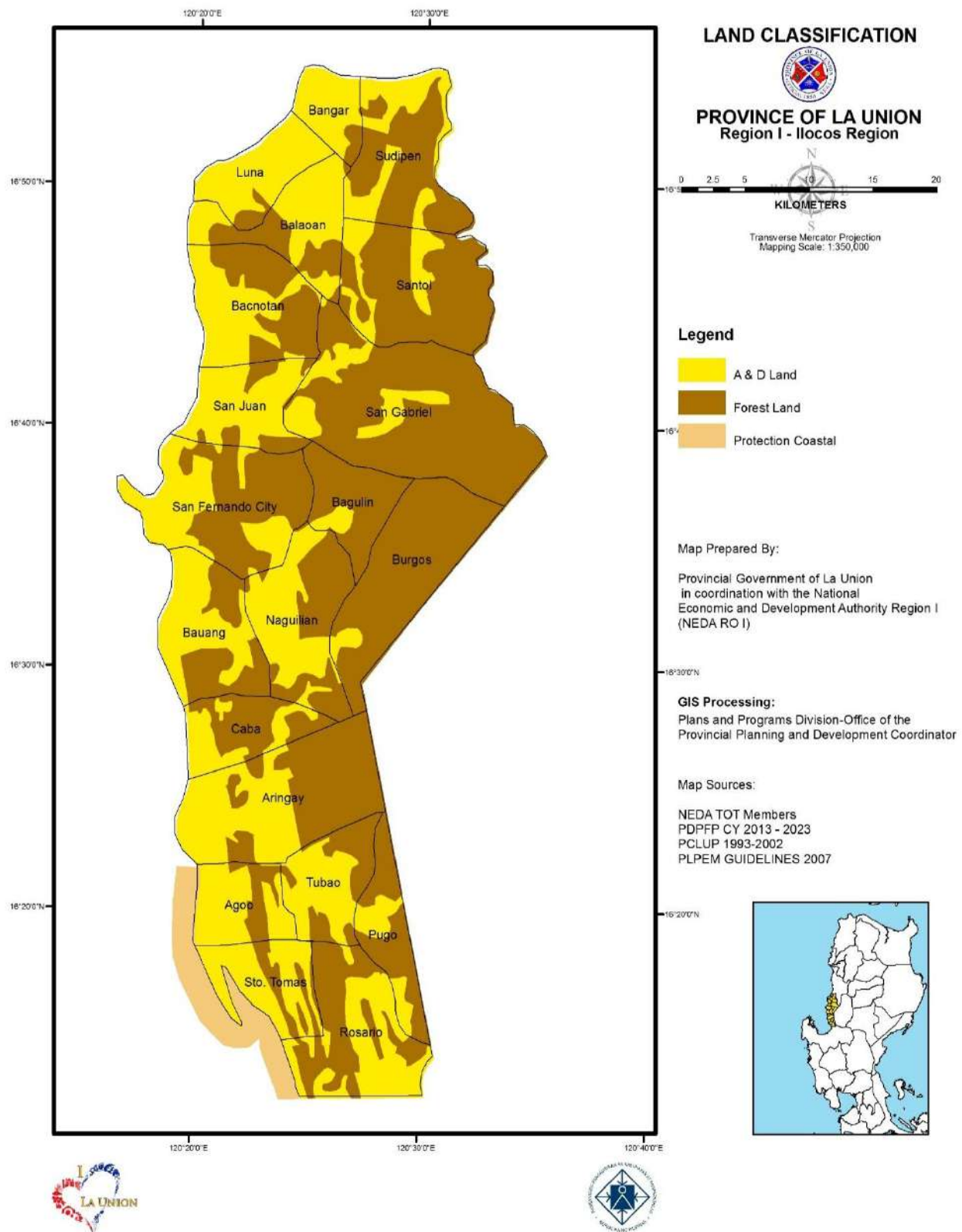
Source: Provincial Development and Physical Framework Plan 2017-2025

## 24. Economic Profile and Land Use

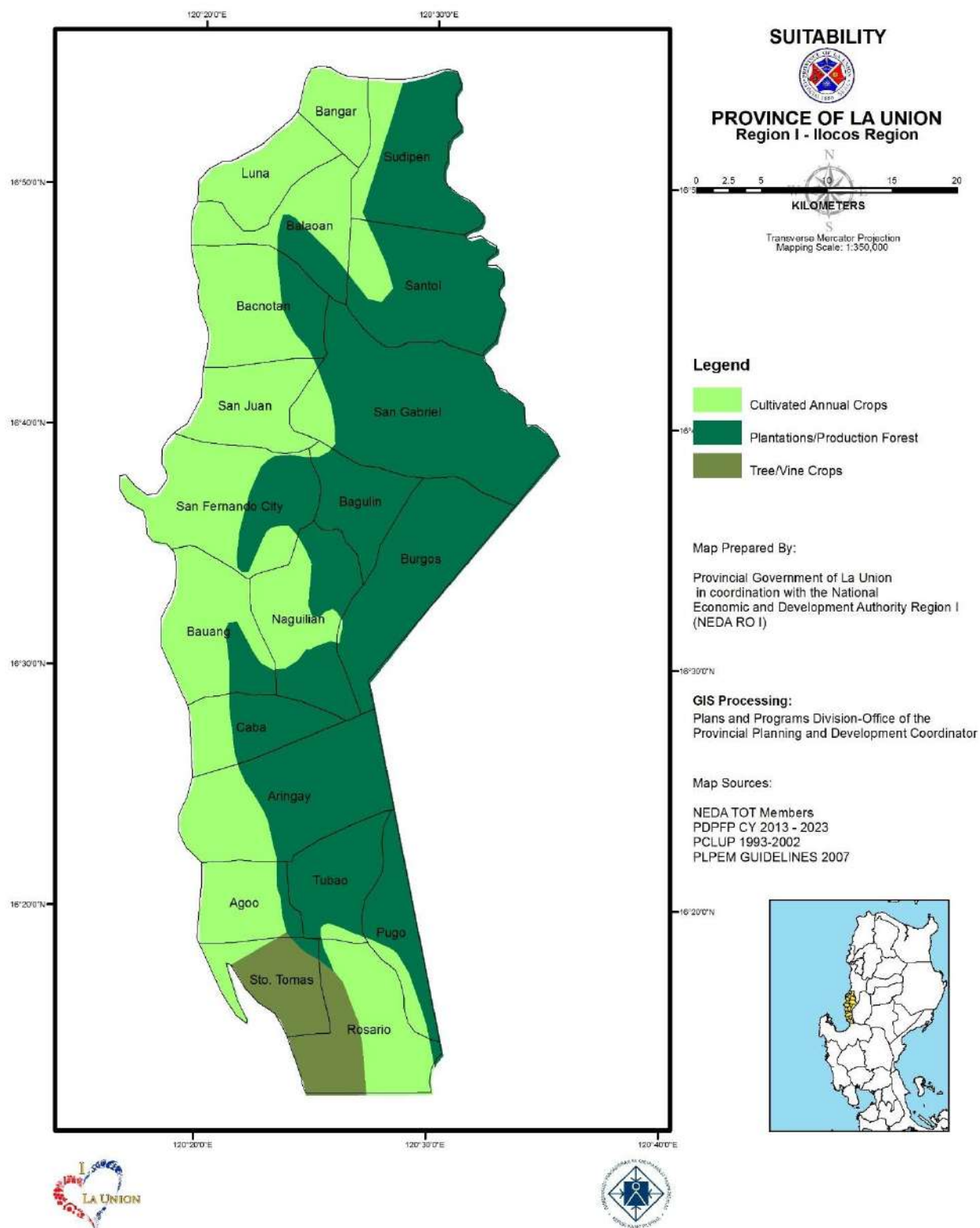
### Land Classification

The province has two (2) major land classifications: the alienable and disposable (A & D lands) and the public forestlands. The province's 120,307 hectares of certified A & D lands shared 80.58 percent of the total land area. Public forestlands contributed less at 19.43 percent of the province's total.

Total land areas of Balaoan, Bangar and Luna all classified as A & D. For District I, San Gabriel had the widest A & D land (10,938 hectares). San Juan has the narrowest at 3,788 hectares). As for public forestlands, San Gabriel shared the largest of 43.53 percent among the municipalities in the district. Meanwhile, for District II's certified alienable and disposable (A & D) land, Naguilian had the widest A & D land (8,116 hectares) while Burgos had the narrowest (only 2,553 hectares). Bagulin had the widest public forestlands of 76.29 percent (11,262 hectares) followed by Aringay (8,288 hectares).



Source: Provincial Development and Physical Framework Plan 2017-2025



**Figure 24.2 Land Suitability**

Source: Provincial Development and Physical Framework Plan 2017-2025

## **Land Constraint**

The average land holding is not more than half hectares that production is not maximized.

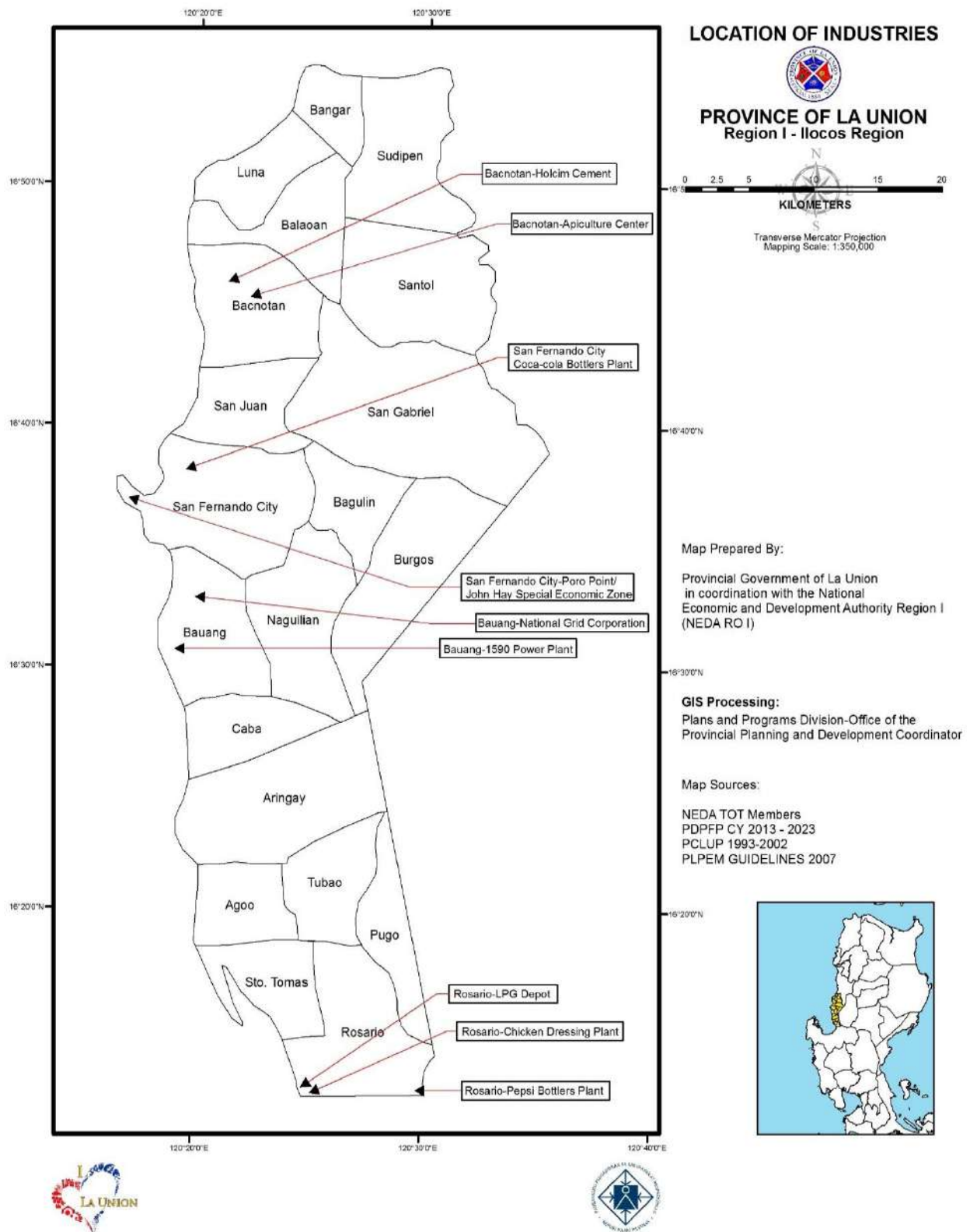
The province has a large tract of grassland which can be utilized for production purposes but are underutilized. Conversion of land use is also evident such that agriculture to housing, mangrove to fishpens, etc.

## **Economic Profile**

### *Industry Concentration*

As of CY 2014, there are 8,476 establishments operating in the province. Majority of these establishments are under the wholesale and retail trade and repair of motor vehicles and motorcycles with a total no of 3,595. The 19 major manufacturing establishments that exist in the province are as follows: the Cement Factory in Bacnotan (HOLCIM), Coca-Cola Plant in San Fernando City, Pepsi Cola Plant in Rosario and the five (5) redrying and flue curing plants (3 in Agoo, 1 in Bacnotan and 1 in Tubao). Steel Corporation, Ice Plant, Soil Tech Agricultural Products, Pilipinas Shell Petroleum Corporation, Petron, Caltex and Shell Depot are also found in San Fernando City. Other establishments found in the Province include B-Meg Satellite Plant (Feed mill) in San Juan and Bacnotan, Bauang Private Power Plant Corporation and the Shell Liquefied Petroleum Filling Station in Rosario. Out of the 8,476 establishments in the province, more than one-half or 81.33 percent or a total of 6,894 are under Services, 17.17% or 1,455 are for Industry and 1.49 or 127 for agricultural industries. More establishments are found in District 1 with a total of 4,637 against 3,839 establishments in the

second district. San Fernando City, being the region's and the province's business center, have the most establishments with 2,625 or 56.61 percent of the districts total while Bauang in the 2nd District have the most at 821 or 32 percent of the districts total. The manufacturing business in the province is mainly composed of the different cottage industries. They are the income-supplementing activities where people can engage in even during off-season. These are handicrafts, metal crafts, furniture, garments, ceramics and food processing, etc. Commercial activities in the province consist mostly of wholesale and retail business. Again the City of San Fernando, the business center has the highest share with 32 percent of the provincial total.



**Figure 24.3. Location of Industries**

Source: Provincial Development and Physical Framework Plan 2017-2025



A large part of the province is of watershed/forestry zone which is in the eastern part. In the western part is the lowland which is the strategic fishery/crop sub development zones. Built up areas are largely located along major roads.

### *Agriculture*

Palay remains to be the major cash crop of the province. The total area planted with palay is 38,693 hectares, of which, 24,596 hectare were irrigated while the remaining 14,097 hectares were rainfed. The province's production for the year 2015 is 187,148 Metric Tons where only 86,061 Metric Tons were consumed giving the province an average sufficiency level of 124%. The highest producer is San Juan with 16,766 while Bagulin having the Least at 2726 metric tons. La Union is one of the top producers of corn in the region with an average annual production of 27,508 Metric Tons. In 2015 alone, corn production yielded P229,696,330.00 in terms of income giving employment to 1,238 people. The largest area planted with yellow corn can be found in San Juan of District I with an area of 630 hectares while Tubao of District II has the biggest production of green corn at 1,295 Metric Tons. In terms of fruit trees production, the province is 166% sufficient. Mango dominated all the fruit trees with a total production of 32,250 Metric Tons. District II with an area of 2,389 almost doubled the area of District I at 1,261 hectares. Bauang of District II has the widest area of fruit trees planted (541 has.) with a production of 7,361 metric tons while Bagulin and upland area of the same District has the lowest produce of 1,052 metric tons with 82 hectares covered. Fruits, Root crops, Leafy and fruit vegetables are in the level of more than 200% sufficiency level. This shows that these



commodities are more than enough for the consumption of the province. For legumes, the total area of 2,981 had only produced 4,311 Metric Tons making the province deficit at 409 metric tons or with a 91% sufficiency level.

#### *Fishery*

In 2015, the total fish production was 18,087.53 Metric Tons while the consumption requirement of the province was 17,306.35 Metric Tons; hence, the sufficiency level of La Union is 105%. The total additional employment generated out of fish production was 13,365 and the total income computed was P1,683,655.90. District II has higher fish production compared to District I at 11,428.41 metric tons (63.18%) vs 6,659.42 metric tons (30%). The City of San Fernando the regional seat of government offices have the highest fish production of 2,125.95 metric tons with income generated at Php212.00 Million while Sto. Tomas a fish magnet municipality of the second district had the highest fish produce of 3,821.57 metric tons with Php346 Million income generated for the year. All upland municipalities on both Districts have the least fish produce averaging at 52 metric tons.

#### *Livestock and Poultry*

As per report of the Office of the Provincial Veterinarian, the total production of 36,629 metric tons recorded in 2014 decreased to 36,137.43 metric tons in year 2015 due to the lost on typhoons. However, the production is still sufficient to fill the demands based on the computation of production against consumption which reflects a sufficiency level of more than 100% in all livestock commodities.

### *Tourism*

Recognizing the dominance of the tourism industry vis-a-viz its role in the circle of economy, the Province of La Union thus its tourism platform taking into consideration its strategic location (as gateway to Ilocandia and Baguio City) and renown as a place in Ilocandia where the most number of conveniences, supplies and support facilities for visitors are available like a) shopping convenience and personal services, b) variety of hotel accommodations and restaurant facilities, c) entertainment facilities, souvenir and gift shops, d) parks, beaches, forest and other nature centers, e) transport terminals such as airport, seaport and land transportation, f) central bank, commercial and rural banks, and foreign currency exchange, etc. The stretch of white and gray sand beaches along the towns of La Union is the main attraction to tourists. In the province tourist belts are located along the shores of San Juan, San Fernando City, Bauang and Agoo. Its calm crystal water is ideal for water skiing, snorkeling, swimming, scuba diving, wind surfing and boating. Its gifted multitude scenic landscapes is a tourism haven as well, and eco-tourism development. Surfing is now a tourism booster in the province owing to its long waves best for long board surfing. The stable peace and order situation and the tourism areas in La Union are the main attractions to local and foreign tourists.

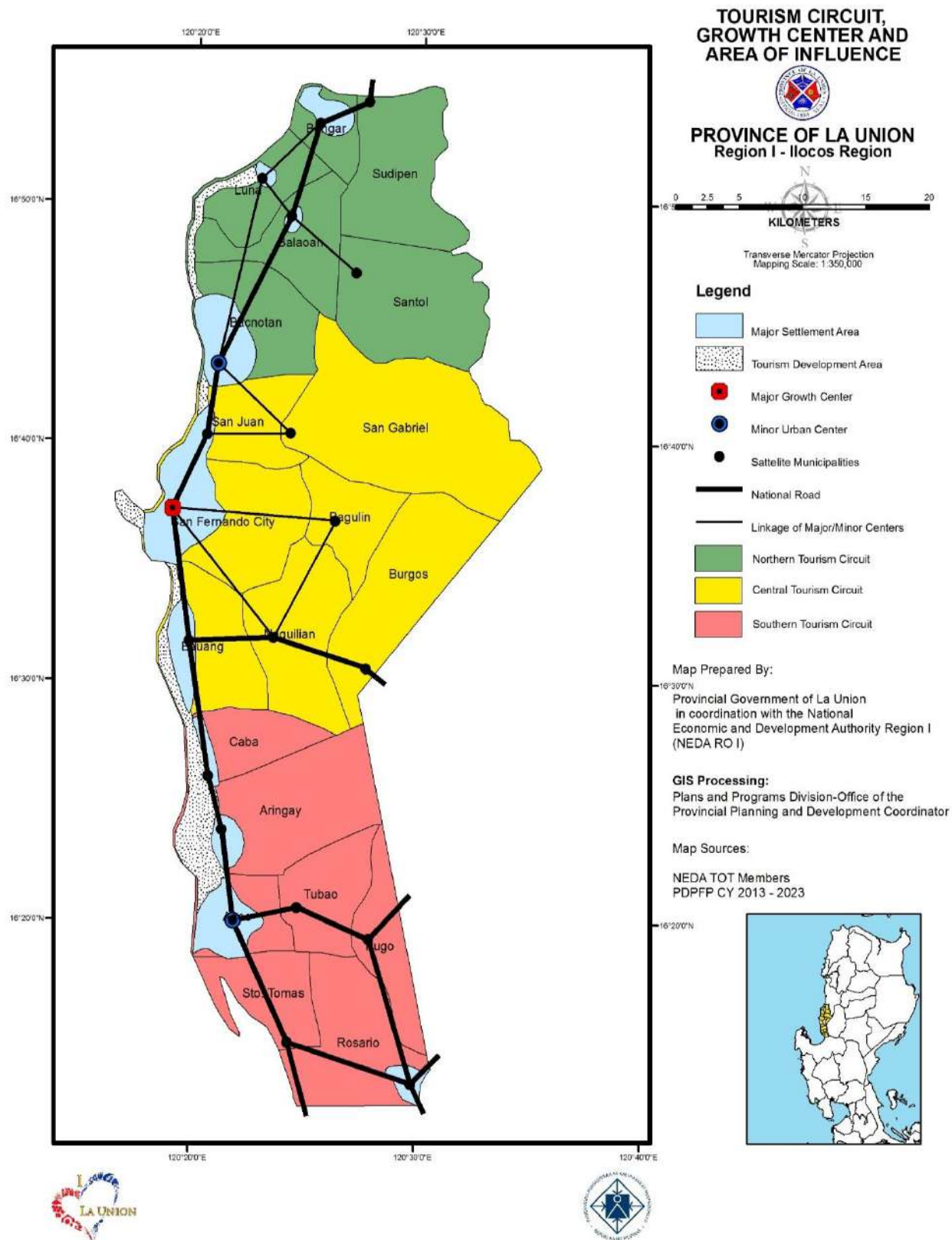
Tourists continue to visit La Union. Since 2015, total tourist arrivals continued to post positive growth by 48 percent (Refer to Figure 15). It grew to 381,649 tourist arrivals compared to CY 2014 at 199,817 tourist arrivals. Domestic tourists continued to account for a major bulk of tourists visiting the province. It totaled 369,173 higher than CY

2014 with a total of 192,298. Foreign tourist arrivals pictured an increase from 7,519 foreign tourists in CY 2014 to 12,474 in CY 2015. Majority of the foreigners came from East Asia (5,521 or 44.26%) North America (1,584 or 13%), Western Europe (1,385 or 11.10%) and Asean (1,148 or 9.20%) refer to Table 43 and 44.

The new transformative agenda of having La Union as the heart of Agri tourism in Northern Luzon by 2025 will promote the national gifts and treasures of the province. The province will be promoting 3 tourism circuits and its treasures.

**Table 2.4 Tourism Circuits and its Tourism Drawers**

<b>Northern Tourism Circuit</b>	<b>Tourist Drawers</b>
Sudipen Bangar Luna  Balaogan Bacnotan  Santol	Bamboo Weaving Capital Loom Weaving Namacpacan Church Luna Stones Sea Urchin Ranch Baroro River Farm Apiculture Farm Agro-Forestry Falls
<b>Central Tourism Circuit</b>	
San Juan San Fernando  Bauang San Gabriel  Naguilian Bagulin	Surfing Capital of the North Regional Service Center Gastronomic Capital Fruit Basket of the North Tangadan Falls Vegetable Bowl of La Union Basi Capital Soft Broom Capital
<b>Southern Tourism Circuit</b>	
Caba  Aringay Sto. Tomas Agoo  Rosario  Pugo  Tubao	Bamboo Furniture Capital Mango Capital Bangus Capital Dried Fish Capital Agoo Basilica Dinengdeng Capital Farm Tourism Antique Furniture Wood Carving/Furniture Tourism Adventure Agri-Tourism



**Figure 2.4.4 Tourism Circuit, Growth Center and Area of Influence**  
Source: Provincial Development and Physical Framework Plan 2017-2025

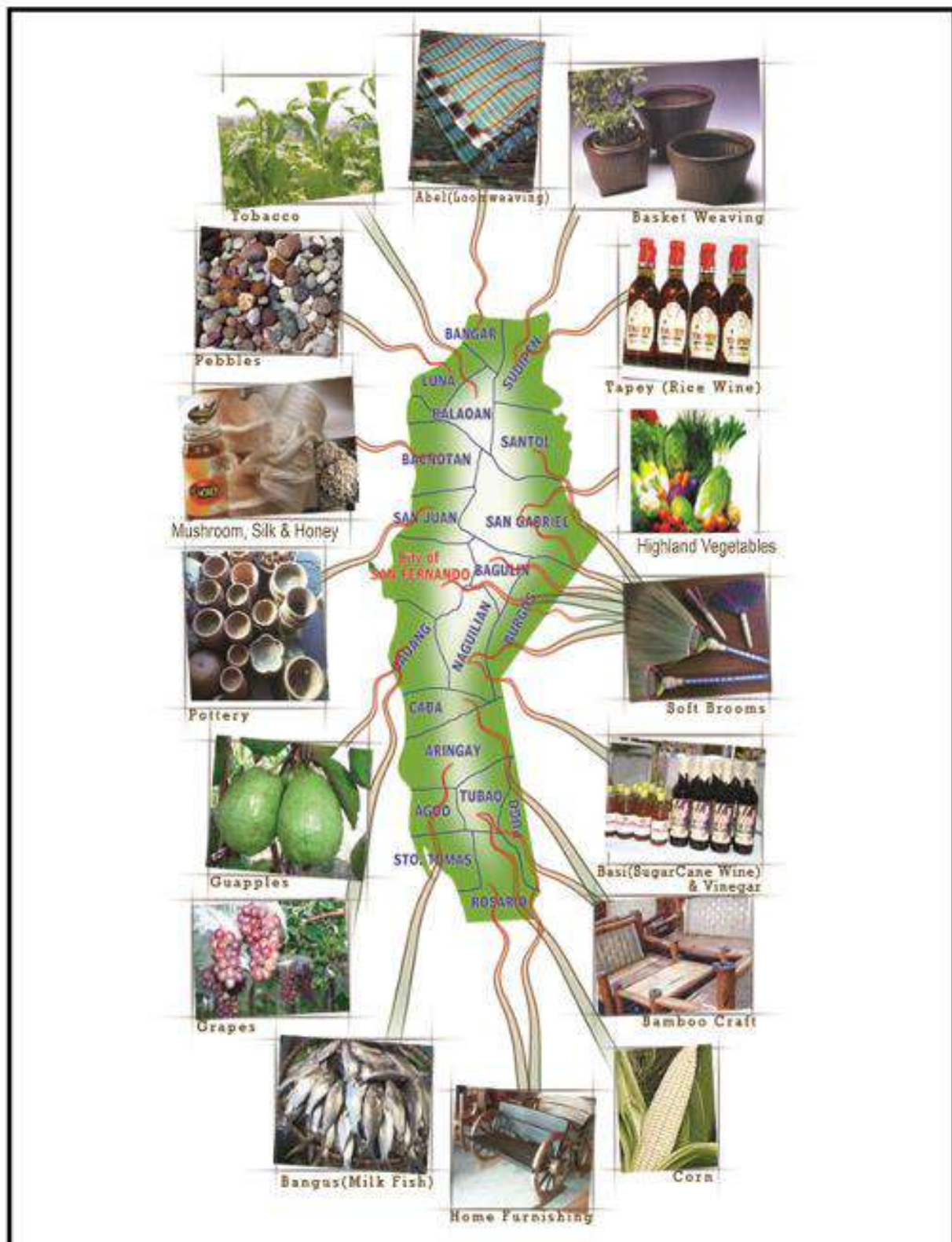
### *Investment, Exports and Job Generation*

The province is strategically located as international shipping, air route and land based positions that attract both local and foreign investments. It is the growth center of education, trade, and commerce in Region I and endowed with a well skilled manpower. Major development projects have been established like the Poro Point Special Economic and Freeport Zone and the on-going negotiation of the Regional Industrial Center and various infrastructure projects. All of these are expected to generate investment not only in the province but also in the entire region. Investment's inflow in the province experienced a slight decline pattern generating a total of P1.216 Billion in CY 2012 to 1.1164 Billion in CY 2015. Exports earnings seen to grow in 2012 accounted at \$18.429 Million versus \$ 23.288 Million in 2015. In terms of job generation continued to view the labor market as weak.

Among the export gainers were tobacco and feldspar/pebbles. On the other hand, among the export losers were gifts, decors and house wares (GDH). Many of these industries have shifted to local market.

### *One Town One Product "OTOP"*

The 19 municipalities and one (1) city have its own distinct product which is their major industry and they are as follow: City of San Fernando and the upland municipalities of Bagulin, Burgos, San Gabriel and Santol – softbroom, Agoo-rice based cakes, Aringay-bangus, Bacnotan-mushroom and honey, Balaoan-sea urchin, Bangar-handloom, Bauang-guapple, Caba-bamboo craft, Luna pebbles, Naguilian-basi, San Juan-yellow corn, Santo Tomas-daing, Sudipen-bamboo basket, Tubao-native tobacco and Pugo and Rosario-antique and wood furnitures.



**Figure 2.4.5. One Town One Product "OTOP"**

Source: Provincial Development and Physical Framework Plan 2017-2025

## **Transportation, Access and Linkages**

### ***External Access***

#### *Roads and Bridges*

There are four (4) main roads that linked the different municipalities of the province. From south to north is the Ilocos Highway; from east to west are the Naguilian Road, Aspiras Highway and the Kennon Road, which traverse peripherally the town of Rosario at its southern part.

The province has a road network measuring 1,735.596 kilometers. Barangay Roads has the greatest share in the network which comprises about 61.02% of the total or 1,059.003 kilometers. The remaining is distributed as follows: National Road (14.28 % or 247.884 kilometers), Provincial Road (15.22% or 264.093 kilometers), and City/Municipal Roads (9.48% or 164.616 kilometers). However, 91.40% (241.379 kilometers) of the provincial road length has already been concreted, 3.49% (9.210 kilometers) was asphalted and 5.11% (13.504 kilometers) are still gravel and earthfill/unsurfaced roads, respectively. Majority of 587 number of bridge span of the province is made of concrete with a total length of 6,509.77 meters or 68%. Other existing bridges are steel (422.80 meters or 4.42%), composite (569.38 meters or 5.95%), timber (572 meters or 5.97%), footbridge (1,273.75 meters or 13.31%), bailey (199.28 meters or 2.08%) and jumbo (26 meters or 0.27%). The City of San Fernando of the 1st district has the longest paved surface covering 148.555 kilometers. Burgos has the least with 26.467 kilometers. To date, San Gabriel is registered with the longest barangay road network at 107.629 kilometers while Caba of the 2nd District has the shortest with 11.821 kilometers. The increase in road network and significant improvement of road pavement manifest that the province's shares under R.A. 7171, SLRF funds and BUB for farm-to-market roads facilitate the socio-economic



development directed to uplift the living standard of the people, thus, the province is ready enough for the rapid urbanization and industrialization.

#### *Air Access*

La Union has one airport located in Canaoay, City of San Fernando. It is classified as a secondary or alternate airport for general aviation with concrete strip dimension of 1,200 meters by 36 meters with an elevation of 3.96 meters. Improvements and upgrading of the airport was under the supervisory authority of the BCDA Management – JPDC. It is equipped with a control tower, VCR, telephone, telegraph station, powerhouse, and fire fighting unit and terminal building for the daily passengers. The San Fernando Airport functions as alternate to Baguio City's Loakan Airport accommodating chartered turbo-prop aircrafts. The airport also caters to Manila-based charter operators, flying schools and domestic flights. At present, the San Fernando City Airport is adequate for YS 11 of International Civil Aviation Organization (ICAO) Code No. 2 under visual flight rules (VFR) operations. Its landside and airside facilities and systems are compliant with ICAO Standards and Recommended Practices (SRP) for secondary airports.

#### *Water Access*

One of the best harbors can be found in the City of San Fernando. The government, cognizant of its potentials has delegated the responsibility of developing the port to the Philippine Ports Authority (PPA) and Poro Point Industrial Corporation – BCDA. It is a national port of entry open to both coastwise and overseas shipping. Vessels docking at the port are mostly cargo ships plying the coastwise and or tourist passengers. The province's produce and those from the nearby provinces are transported out of the region through the San Fernando Base Port in Poro Point. Production



requirements and raw materials such as coal, fertilizers, etc. are also brought into the region through the port. The seaport was eventually developed into a transshipment port to and from the neighboring countries. In addition, there are 5 international ports under the administration of Poro Point Industrial Corporation-BCDA, the conveyor pier of Philex, Pier No. 1 and 2, LCT Ramp, UCC Private Pier while 4 are commercial privately owned piers – the Holcim Inc. Plant (former Bacnotan Cement Industries), Shell LPG Depot/Gasoline and 1590 Energy Corporation. Raw materials such as mining products, copper concentrated, etc. are being exported here. Occasionally, tobacco leaf is also exported through this port. Cement factories like Holcim Cement of Bacnotan and Northern Cement Corporation are some of the establishments that use this port in transporting their products.

In 2015, the Philippine Ports Authority (PPA) – PMO San Fernando City, La Union recorded a total of 55 domestic shipcalls (2015) from all the ports within the province which are under its jurisdiction, posting a 190 percent increase from the shipcalls recorded in 2006. Inbound cargoes increased from 46,336 MT in 2006 to 52,234 MT. The overall increase in inbound cargoes can be attributed to the increase in demand of petroleum products due to the increased power energy utilization at 1590 Energy Corporation. The 100 percent increase in out-bound cargoes, is due to the increased demand of river mix (aggregates) needed in refilling the eroded private pier in Bacnotan.

## **Income Employment, Service Access and Poverty**

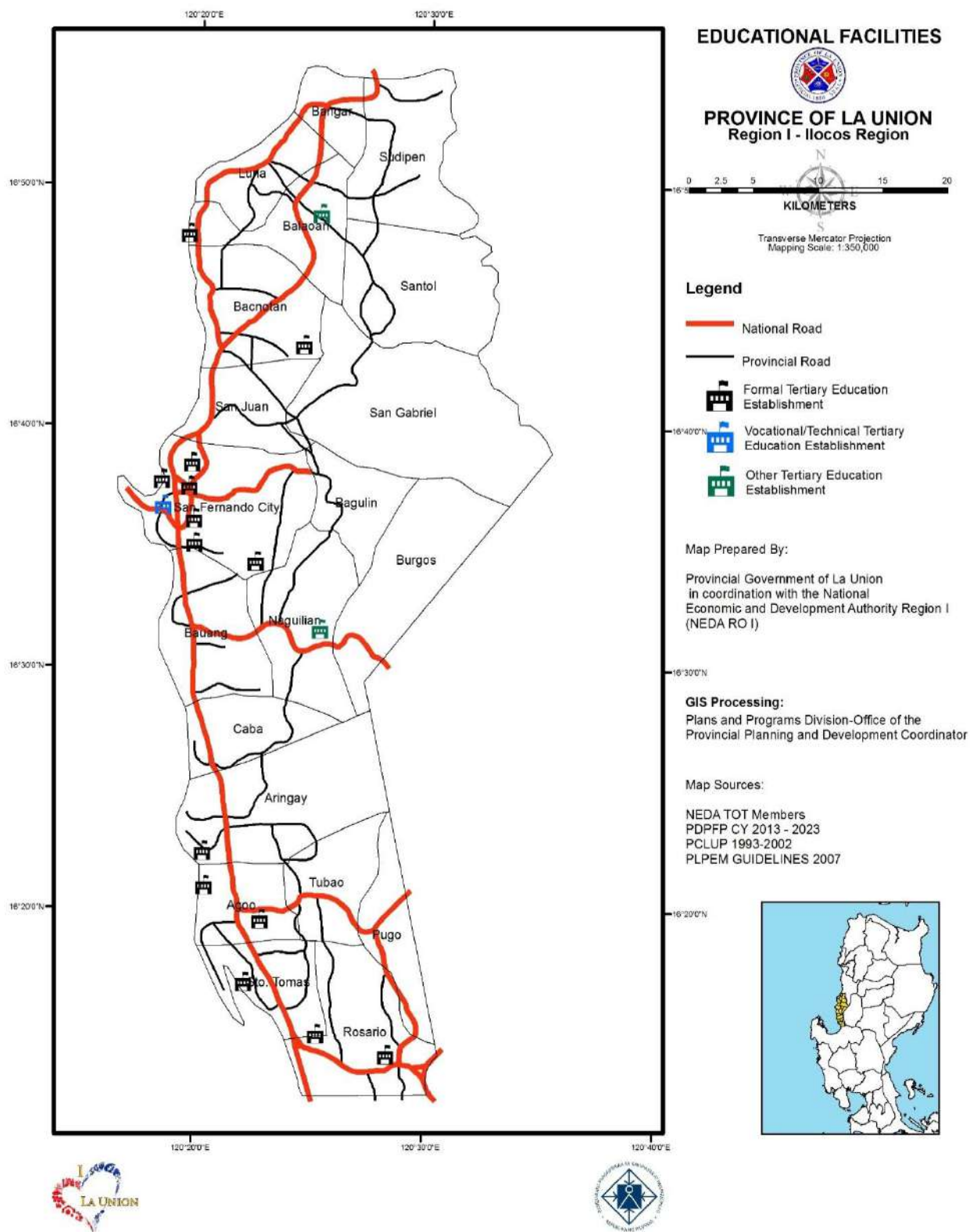
### *Total and Average Income, Expenditure and Savings*

When it comes to income, the City of San Fernando, the center of trade and industry has the highest income which is 23.66% of the 1st district, while Burgos on the other hand, with only P43,131,008.91 total income has the lowest which is equivalent to only 1.23% of the total income of the province.

## **Physical Facilities**

### *Educational Facilities*

In terms of physical facilities, a total number of 590 public and private schools were recorded and distributed as follows: elementary schools accounted 428 or 73 percent; secondary schools 139 or 24 percent and tertiary schools 25 or 4 percent. The province had adequate classrooms for both elementary and secondary level that evinced by a classroom to pupil ratio of 1:25 and classroom to student ratio at 1:41 showing lower than the planning standard of 1:45.



Source: Provincial Development and Physical Framework Plan 2017-2025

## **Healthcare Facilities**

### *Hospitals*

A total of 24 hospitals are located in La Union including lying-ins and clinics, of which 17 are privately owned and the other (7) are managed by the government. These hospitals have a total bed capacity of 789, four hundred eighty nine (789) in public hospitals and 369 in private hospitals. Among the government hospitals, the Ilocos Training and Regional Medical Center accounts 200 beds. The Barangay Health Workers referred complicated cases to the 5 District Hospitals. Looking at the distribution of hospitals in the province, more are located in developed and urban municipalities. Most hospitals with modern means of facilities and communication services are located in San Fernando City and Agoo. Assessing the adequacy of hospital services, more bed capacities, modern equipment and drugs are available in modern hospitals than in public/district hospitals. At present, district hospital facilities were improved/upgraded/provided thru the Economic Development Fund of the province and the Hospital Facilities Enhancement Program (HPEP) from the Department of Health.

The Provincial Government of La Union operates the La Union Medical Center and five district hospitals-Bacnotan, Naguilian and Rosario District Hospitals, Caba Medicare and Community Hospital and Northern La Union Maternity and Children's Hospital in Balaoan. In 2003, Republic Act No. 9259 made LUMC a non-stock, non-profit local government owned and controlled corporation. The conversion of the five district hospitals into public-private mix type non-stock and non-profit hospitals. La Union Medical Center was implemented into a model enterprise for Sustainability and Development and Gawad Galing Pook awardee with 100 – bed

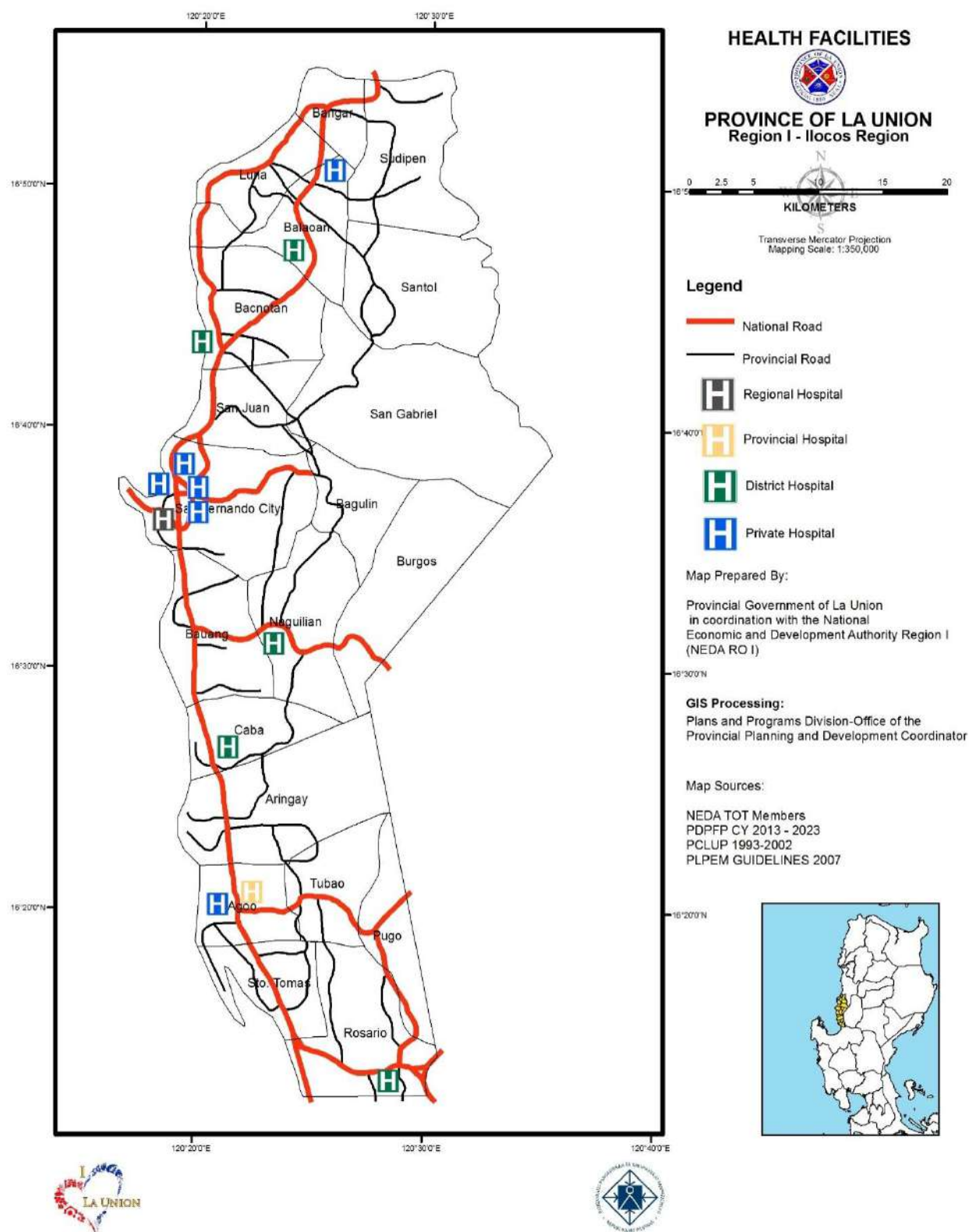
capacity, state of the art medical equipment's, accessible to the poor community of La Union and the nearby provinces of Ilocos Sur, Ilocos Norte, Pangasinan and Benguet. (See Map No. 48. Health Facilities).

#### *Health Centers/Clinics/BHSs*

A total of 237 health facilities operate in La Union. In each municipality there are twenty (20) Rural Health Units/FP clinics and 217 Barangay Health Stations (BHS). Burgos an upland area had the least with five (5) Barangay Health Stations. Average population served by 1 BHS is 3,591. Around 38 percent of the total barangays have BHS. Presence of private clinics and diagnostic centers are located in urban municipalities that cater health services to middle upper income class population. The preventive and promotive aspect of health is the main thrust of the health sector in the province. See Figure 29.

#### *Housing, Human Settlements*

One of the significant phenomena that have characterized the development process of the province has been the explosive and unabated growing population due to natural birth and rural-urban migration and in migration. In 2010, the Census of Population has a total population of 741,906 persons. This is 83,961 persons added to the province's population since the 2000 Census of Population of 657,945 with a 1.21 percent growth. In 2010, the province has a total of 159,031 occupied dwelling units for 163,820 households giving a ratio of 1.03 households per housing unit compared to 1990 of 89,900 occupied dwelling units or a ratio of 1.14.

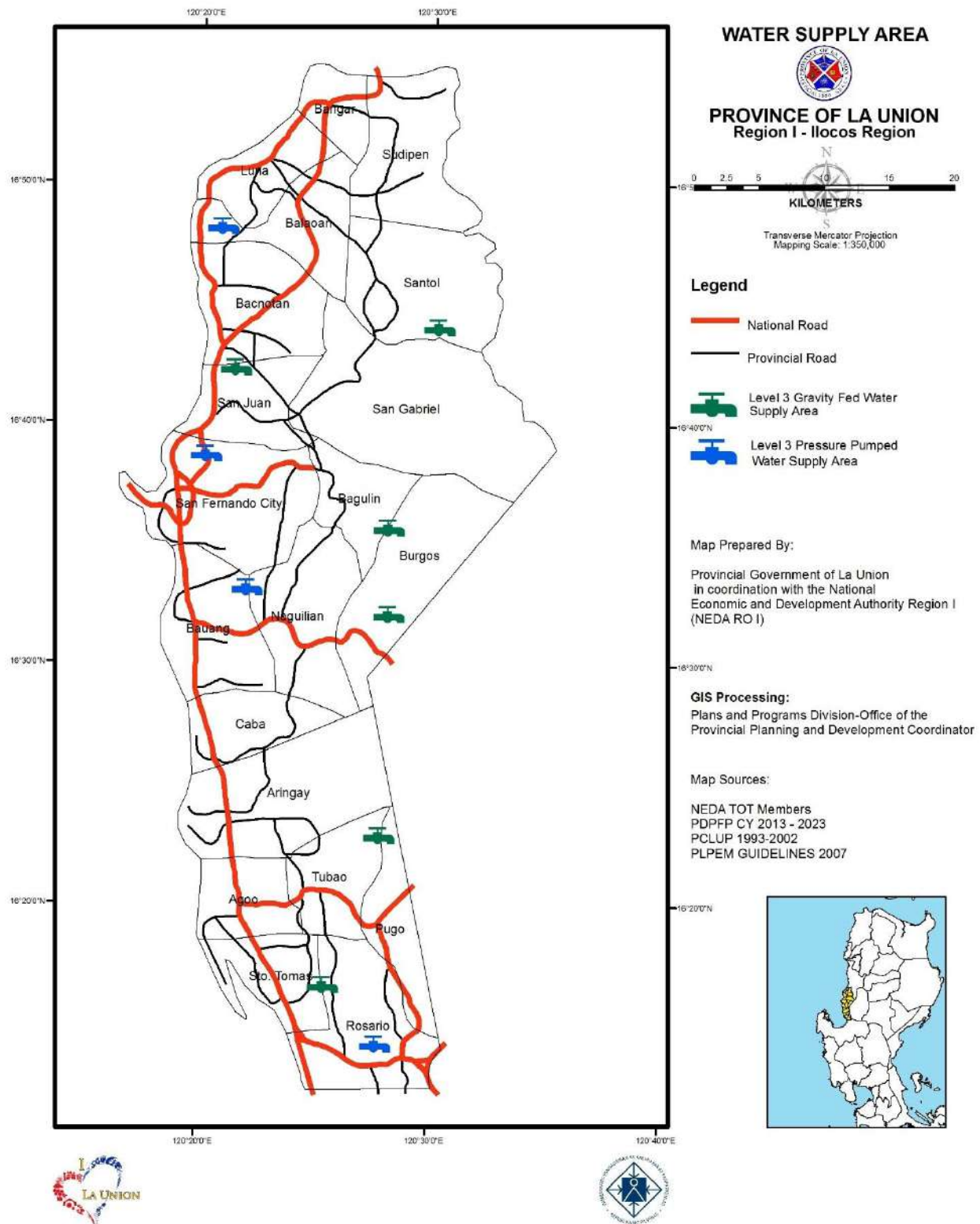


Source: Provincial Development and Physical Framework Plan 2017-2025

## **Utility and Infrastructure Services: Water and Sanitation**

### *Water Systems*

The main sources of water supply of the overall households in the province for drinking, for kitchen use or for washing clothes are: (1) shallow wells, (2) deep wells, (3) Spring Development, (4) Rain Collector. The waterworks system operating under the Local Water Utilities Administration (LWUA) are the Metro San Fernando Water District, Balaoan Water District, Naguilian Water District, Agoo Water District and the Rosario Water District. Main source of water distribution for the Metro San Fernando Water District is in Lon-oy, San Gabriel; the secondary source is in Cadaclan, San Fernando City. Its operational expansion includes the urban areas of the municipalities of San Fernando City, Bauang, San Juan, Bacnotan and San Gabriel as its service area. Agoo, Naguilian and Rosario Water Districts serve the urban areas of the municipalities. As of 2015, about 159,806 households or 95.05 percent has access to potable water supply in the province. Level I recorded a 72.71 percent or 116,188 households served, Level II at 15,605 households or 9.76 percent and Level III at 28,013 households or 17.53 percent. The municipality of Pugo of the 2nd district shows an excellent performance in the provision of potable water supply to every household with 100 percentage points while in the 1st district, the municipality of San Juan also posted a 100 percent accomplishment in the provision of potable water supply. District I exceeded the provincial percentage of 97.19 versus 95.05 percent. However, the province provides jetmatic pumps to various rural areas across municipalities to further disseminate safe water to the populace.





Sanitation is very important to every household in the province. As per record, 79.20 percent of the households have complete sanitation facilities and 93.97 percent of the households are having sanitary toilets breakdown into: Flush = 12.38 percent, Water Sealed = 75.13 percent and Sanitary Pit Privy = 4.49 percent; pit privy = 1.85 percent. With this result, the Health in Every Home Program still extends thousands of toilet bowls to far-flung barangays to eventually observe sanitary environment as figured out below.

## **2.5. Physical Characteristics**

### **Existing Land Use**

#### ***Agricultural Areas***

Agricultural areas cover 54,701 hectares or 36.64 percent of the total area. The western side under broad alluvial plains, valleys and along the hills and mountains under this category. The eastern part covering the municipalities of Bagulin, Naguilian and Rosario are rice terraces. Irrigated riceland exist on the low lying areas of Bangar, Balaoan, Agoo and Rosario while non-irrigated ricelands are seen on the flat alluvial plain, valley and river terrain within the different municipalities.

#### ***Grassland/Shrubland Areas***

This category is predominantly covered with cogon and different species of shrubs within an area of 22,834 hectares or 15.59 percent of the total land area. Grasses and shrubs cover mostly the sedimentary hills and mountains except on higher elevation having steep to very steep slopes.

### **Forest/Wooded Areas**

This area occupies 46,598 hectares or 31.21 percent of the total land area. This area is covered with different forest species at the highest portion of mountain ranges near the boundary of Ilocos Sur and Benguet province.

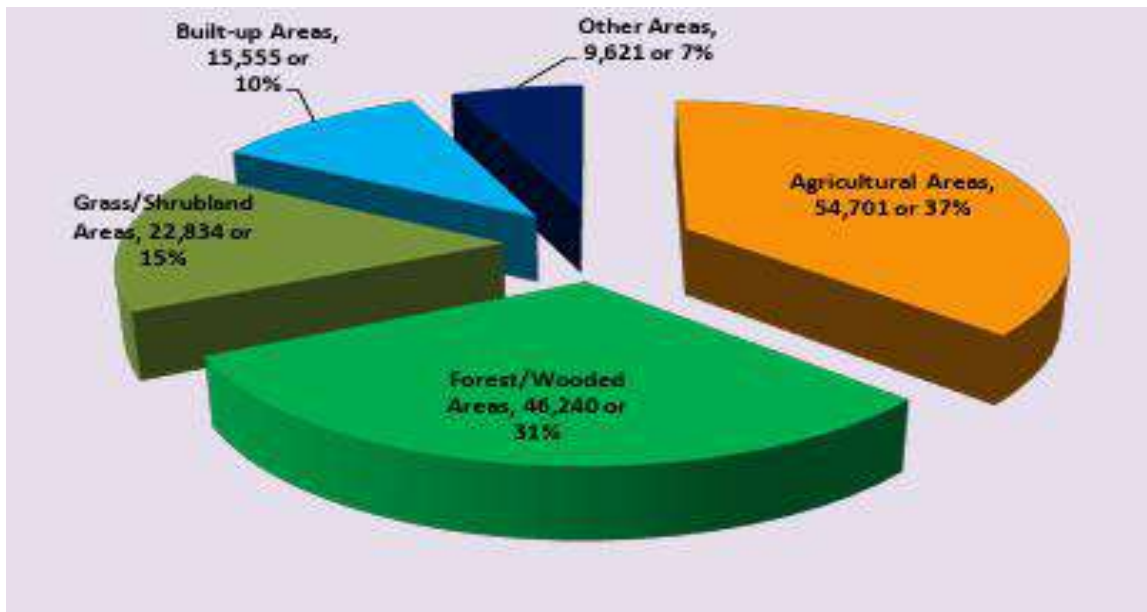
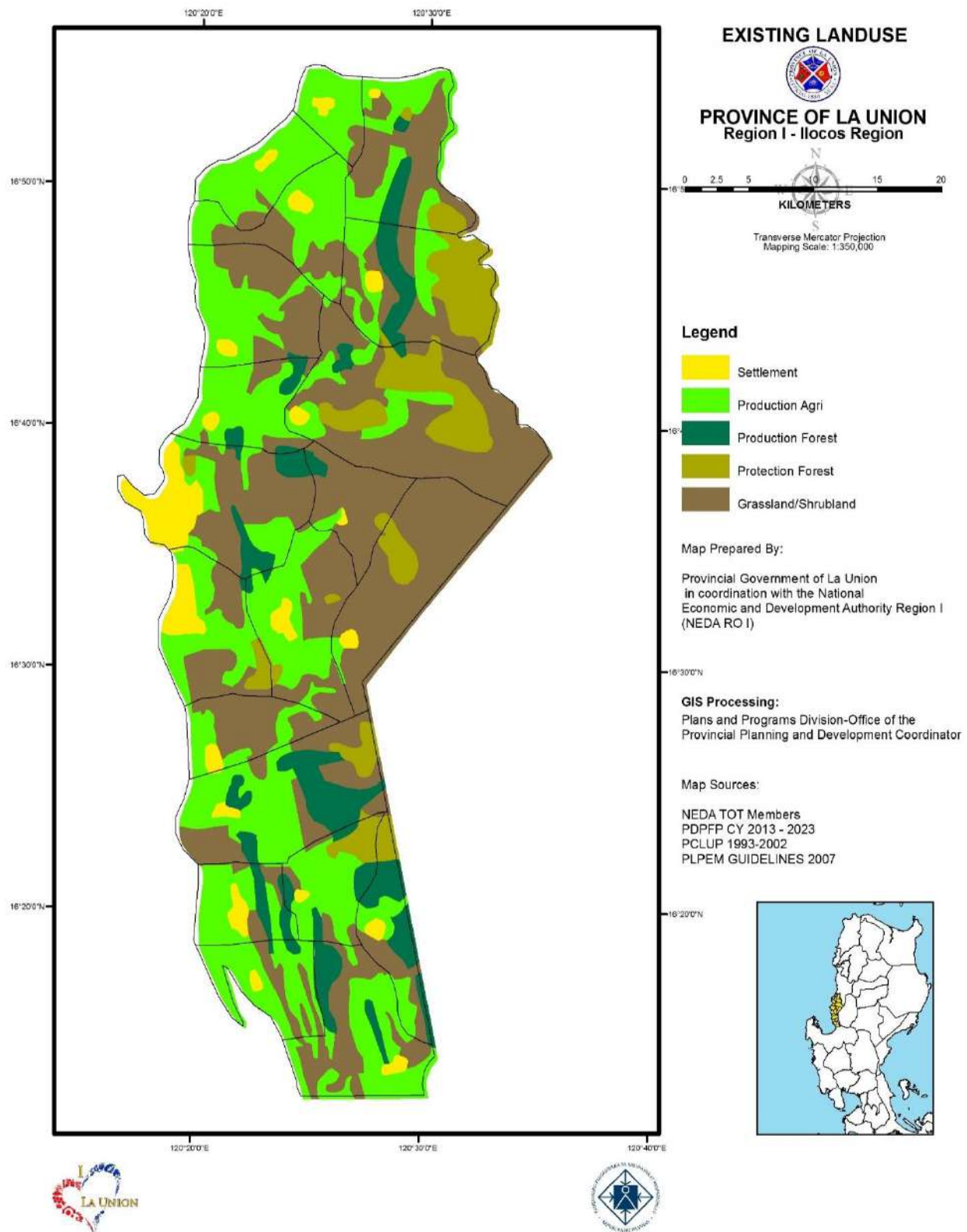
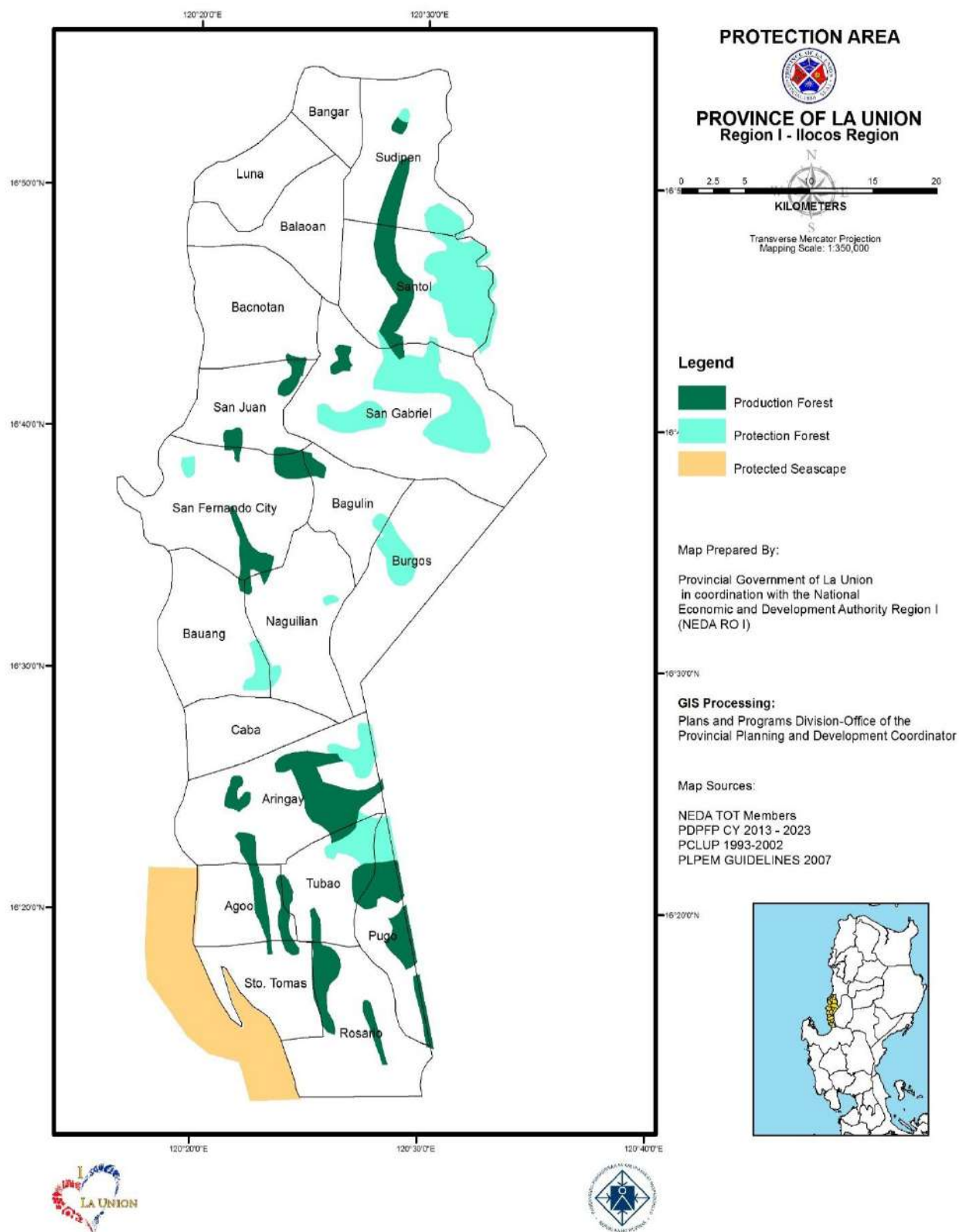


Figure 2.51. Existing Land Use Distribution by Categories

Source of Data: DENR RO1



Source: Provincial Development and Physical Framework Plan 2017-2025



**Figure 25.3. Protection Area in La Union**

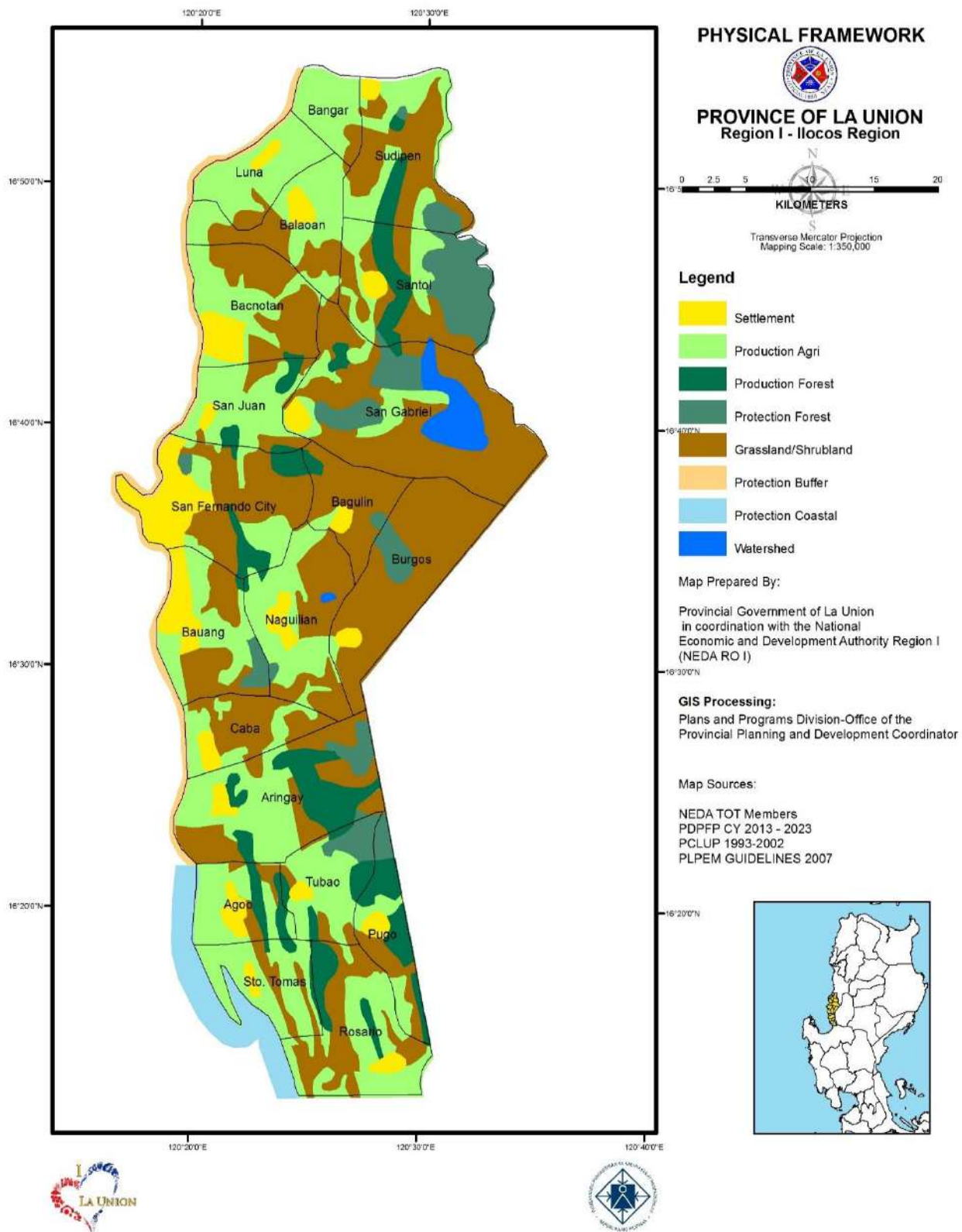
Source: Provincial Development and Physical Framework Plan 2017-2025

**Other Areas**

These areas are purposely for beach sand, river wash of prominent rivers and for aqua-culture either brackish or fresh water. It covers an area of 9,621 hectares or 6.44 percent of the total area.

**Built-up Areas**

These areas are those classified as residential, commercial, institutional and industrial parks and recreation centers. These areas occupy 15,555 hectares or 10.42 percent of the total area. It is observed that built-up areas are located mostly along the province road network. Settlement continued to arise in patches within protected areas. The increase in population and the proposed development in the area attributed to the expansion of settlement, industrial and commercial activities in the province.



**Figure 25.4. Physical Framework**

Source: Provincial Development and Physical Framework Plan 2017-2025



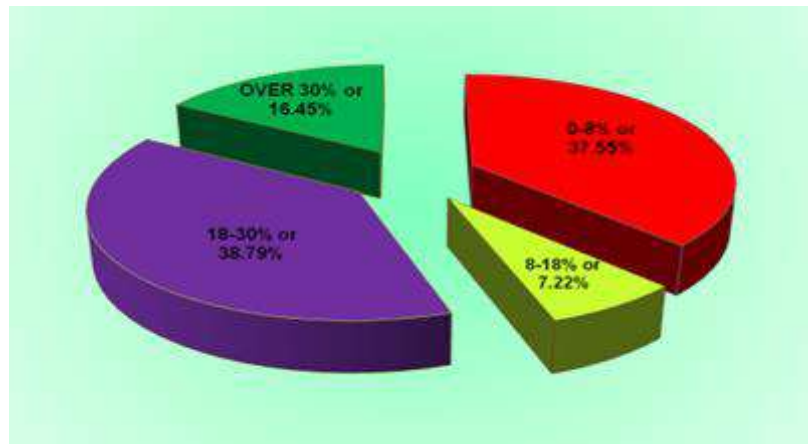


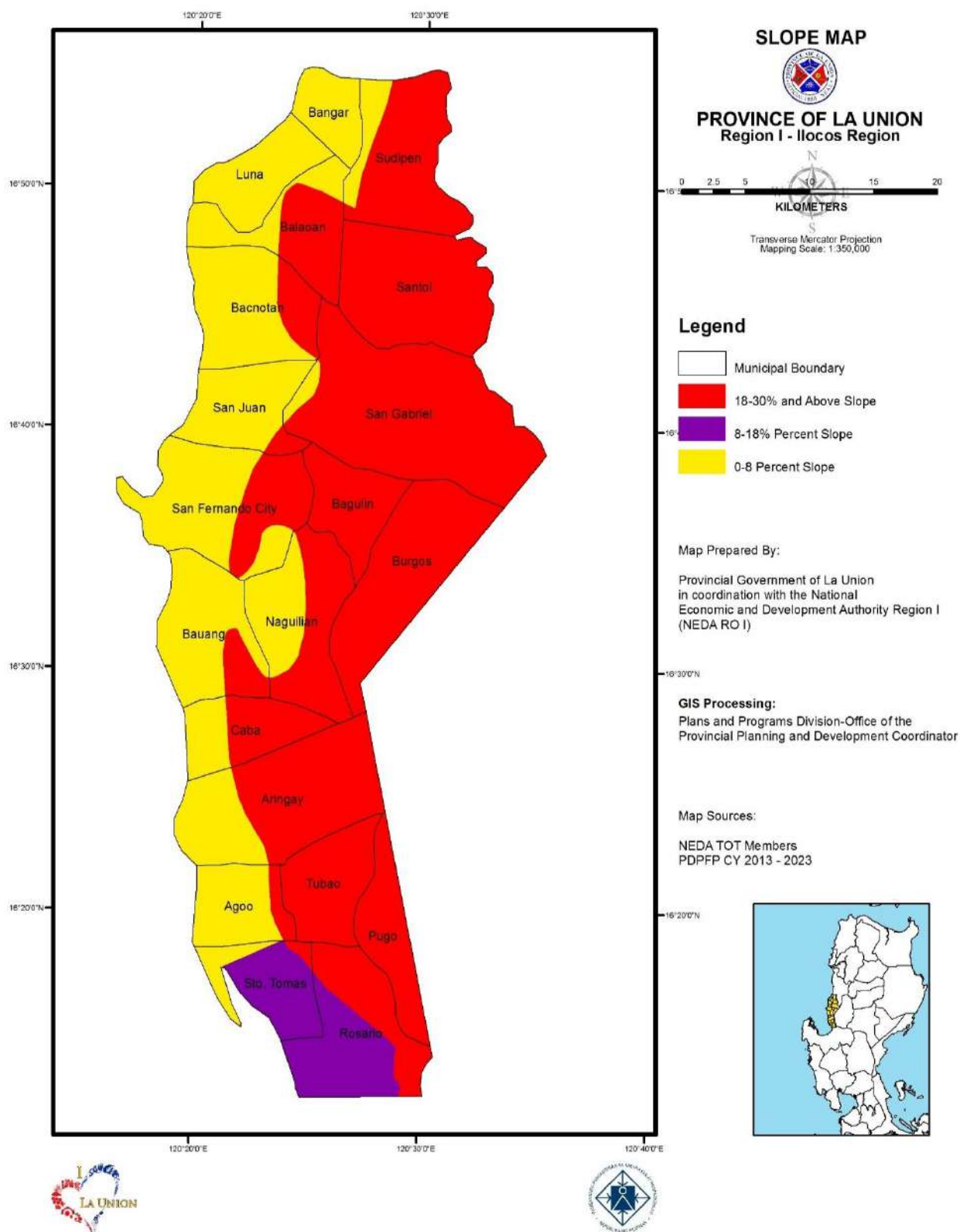
Figure 25.5 Slope Classification

District 2 is considered to be predominantly upland since 18 to over 30 percent slope classification dominated the area, although some of its area belonged to the 0 to 18 percent slope classification. Bagulin has the widest upland area: 275 hectares of 8 to 18 percent slope, 2,475 hectares of 18 to 30 percent slope and 8,440 hectares of over 30 percent slope classification.

Table 25.1. Slope Category Distribution, by Municipality

DISTRICT/ MUNICIPALITY/ CITY	LAND AREA (Has.)	AREA BY SLOPE CLASSIFICATION							
		0-8%		8-18%		18-30%		OVER 30%	
		AREA	%DIST.	AREA	%DIST.	AREA	%DIST.	AREA	%DIST.
<b>DISTRICT I</b>	<b>70,069</b>	<b>289.42</b>	<b>51.62</b>	<b>44.49</b>	<b>41.27</b>	<b>266.67</b>	<b>46.05</b>	<b>100.11</b>	<b>40.77</b>
BACNOTAN	6,507	36.82	6.37	1.25	1.16	22.50	3.89	4.50	1.83
BALAOAN	6,870	52.45	9.36	6.00	5.57	9.00	1.55	1.25	0.51
BANGAR	3,604	33.04	5.89			2.25	0.39	0.75	0.31
LUNA	4,489	40.39	7.20	0.25	0.23	4.25	0.73		
SAN FERNANDO CITY	10,688	48.63	8.67	10.50	9.74	37.50	6.48	10.25	4.17
SAN GABRIEL	15,500	6.89	1.23	11.84	10.98	100.70	17.39	35.57	14.48
SAN JUAN	5,186	29.19	5.21	4.07	3.78	17.14	2.98	1.46	0.59
SANTOL	8,237	8.75	1.56	8.78	8.14	40.08	6.92	24.76	10.08
SUDIPEN	8,988	33.26	5.93	1.80	1.67	33.25	5.74	21.57	8.78
<b>DISTRICT II</b>	<b>79,240</b>	<b>271.20</b>	<b>48.38</b>	<b>63.31</b>	<b>58.73</b>	<b>312.43</b>	<b>53.95</b>	<b>145.46</b>	<b>59.23</b>
AGOD	5,135	29.85	5.32	6.75	6.26	12.50	2.16	2.25	0.82
ARINGAY	12,207	48.24	8.60	5.73	5.32	62.71	10.83	5.39	2.19
BAGULIN	14,762	1.71	0.31	2.75	2.55	58.76	10.15	84.40	34.37
BALANG	7,160	41.98	7.49	2.00	1.86	24.75	4.27	2.87	1.17
BURGOS	4,516	0.25	0.04	2.00	1.86	36.16	6.24	6.75	2.75
CABA	4,862	14.00	2.50	2.67	2.48	31.56	5.52		
NAGUILIAN	8,740	33.98	6.06	4.75	4.41	45.42	7.84	3.25	1.32
PUGO	5,585	7.97	1.42	9.50	8.81	2.70	0.47	35.68	14.53
ROSARIO	7,000	42.64	7.61	9.49	8.80	16.75	2.89	1.12	0.46
STO. TOMAS	3,424	20.42	3.64	2.59	2.40	7.46	1.29	1.95	0.79
TUBAD	6,031	30.16	5.38	15.08	13.99	13.27	2.29	1.80	0.73
<b>LA UNION</b>	<b>149,309</b>	<b>560.62</b>	<b>100.00</b>	<b>107.80</b>	<b>100.00</b>	<b>579.10</b>	<b>100.00</b>	<b>245.57</b>	<b>100.00</b>

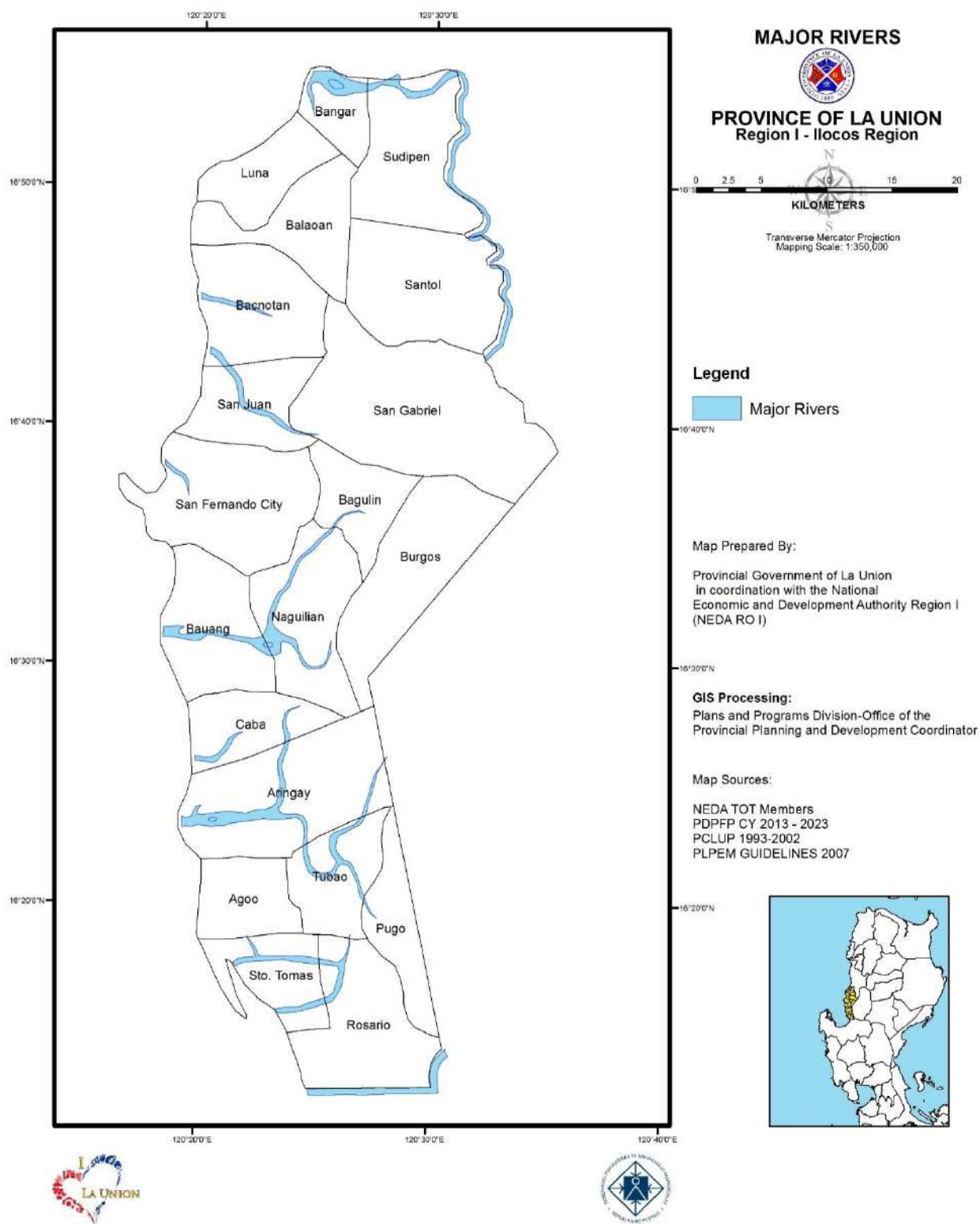
Source of Data: DENR-Land Classification Existing LC Maps



**Figure 2.5.6. Slope Map**

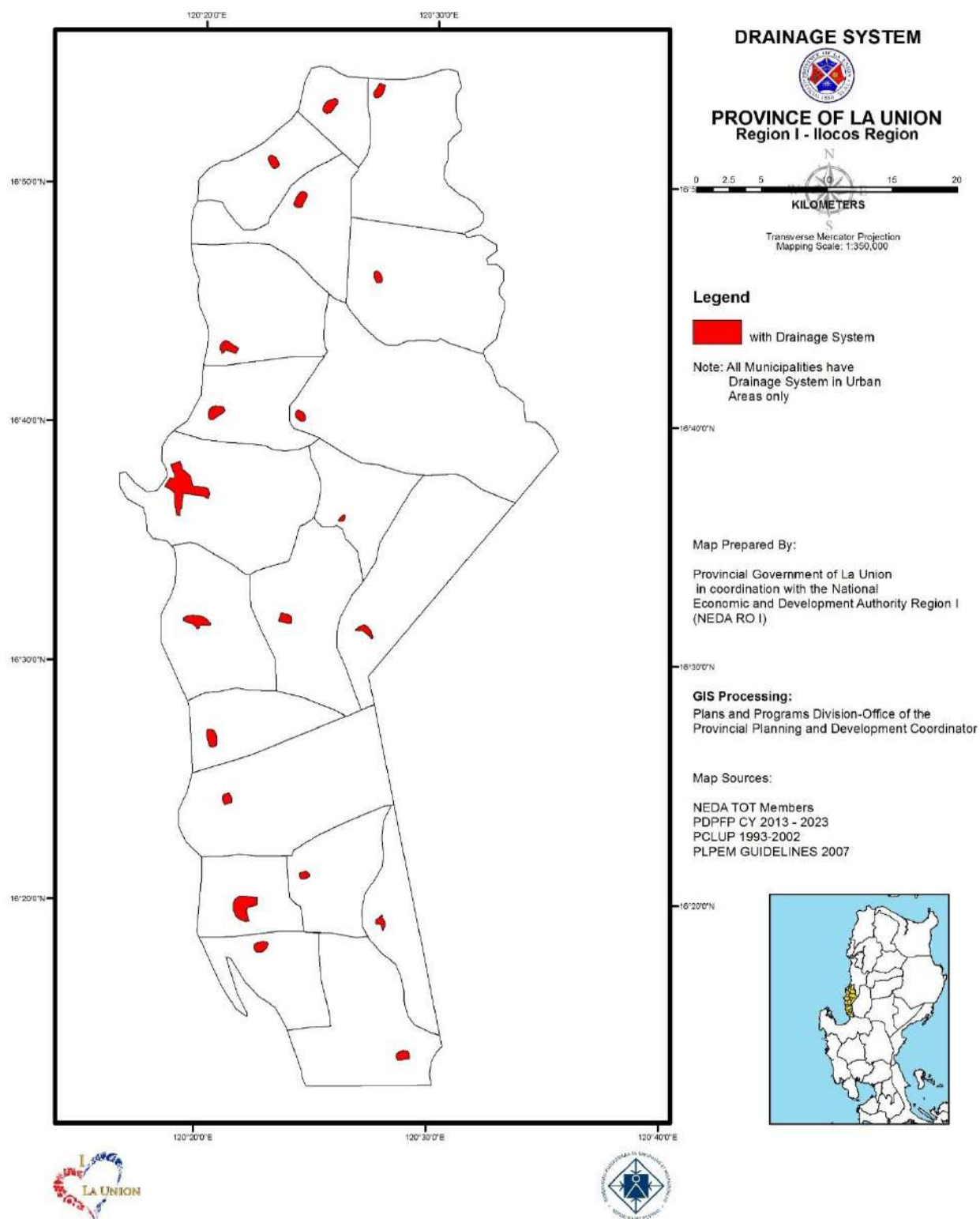
Source: Provincial Development and Physical Framework Plan 2017-2025





**Figure 2.5.7. Major River Basins**

Source: Provincial Development and Physical Framework Plan 2017-2025



**Figure 25.8. Drainage Systems**

Source: Provincial Development and Physical Framework Plan 2017-2025

## Land and Water Resources

The province has potential surface and groundwater resources that could be used for agriculture and domestic purposes. These resources can sufficiently support the increasing population if fully tapped and explored. One surface water, out of 29 river systems in Region I, five (5) are found in La Union. The Amburayan River basin is one of the largest in the region, and stretches along the boundaries of La Union and Ilocos Sur. The other major ones are Baroro, Naguilian, Aringay and Bued Rivers. The province is also endowed with creeks, lakes and streams which dissected every municipality in the province.

Table 25.2 Major River Basins in La Union

NAME OF RIVER	LENGTH (KM)	DRAINAGE AREA (SQ.KM.)	PROVINCIAL COVERAGE	CLASS
1. Amburayan River	105	1,386	La Union, Ilocos Sur and Benguet	C
2. Baroro River	28	191	La Union	A
3. Naguilian River	55	353	La Union and Benguet	C
4. Aringay River	45	469	La Union and Benguet	B
5. Bued River	70	388	La Union, Pangasinan and Benguet	C

Source of Data: PENRO

## Main Geological Features/Mineral Resources

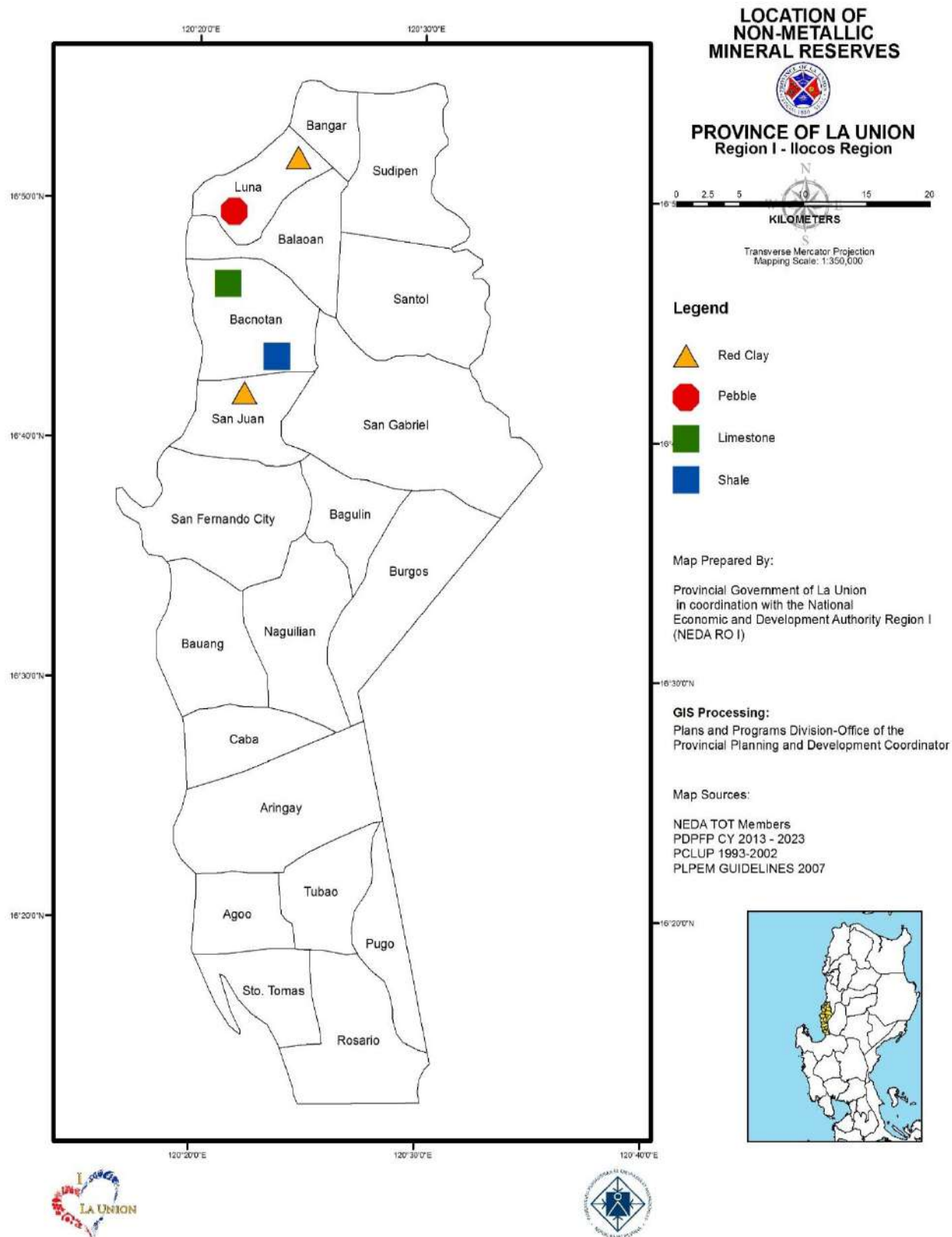
The province's mineral resources are largely non-metallic types consisting of pebbles found in Luna, river sand and gravel deposits in Bangar, Sudipen, Aringay, Bauang, Naguilian, Burgos, Bagulin, Pugo, Rosario and Tubao. In CY 2015 among the four (4) mineral resources that the province is

producing, river mix/limestone evinced the highest production at 290,554.52 cubic meters and 14,994.80, respectively and valued at P4,358,315.20 and P449,844.04. Pebbles has a production of 17,150 cu.m valued at P343,000.00. The aggregate mineral production is valued at P5,996,788.38. To address and regulate the problem of excessive quarrying an ordinance to this effect was passed and approved.

**Table 2.5.3. Mineral Resources (2019-2022)**

Commodity	CY 2019	CY 2020	CY 2021	CY 2022
Sand and Gravel (cu.m.)	482,174.83	9,431,279.87	876,787.71	695,319.81
Limestone (MT)	1,390,371.96	933,050.94	1,459,617.62	1,054,905.91
Pebbles (cu.m.)	15,594	15,232	13,036	1,150

Source: Provincial Government-Environment and Natural Resources Office



**Figure 25.9. Location of Non-Metallic Mineral Reserve**

Source: Provincial Development and Physical Framework Plan 2017-2025

## **Climate and Weather**

The province has two (2) distinct seasons: the wet season which is characterized by abundant rainfall brought about by the southwest monsoon, and the dry season which is characterized by the striking low rainfall due to passing of the northeast monsoon over the Cordillera Mountains.

The striking low rainfall during the dry season from December to April is due to the very effective shielding of La Union from the northwest and even from the trade winds by the mountain ranges of Northern Luzon.

As soon as a drift of wind from the southwest quadrant comes in May, there is an immediate increase in rainfall since La Union is unprotected from the west. Due to depressions and typhoons which come very frequently in the region and owing to the presence of the so-called wet southeast monsoon or moist equatorial air in the west Philippine Sea. The months of May to November have abundant rainfall, the maximum occurring in August.

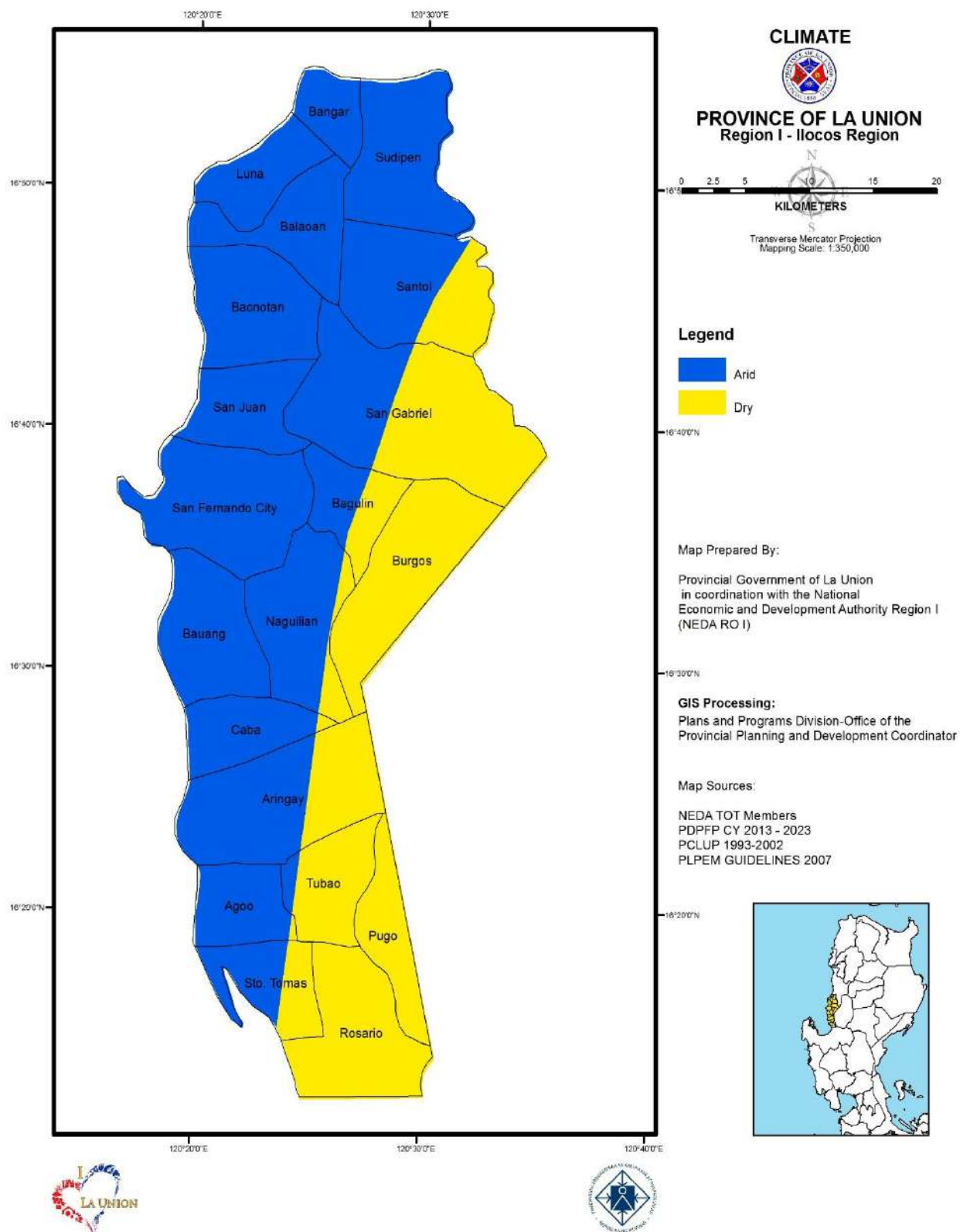
The average annual rainfall is (198.9 mm. in 2010-Dagupan City Station to 183.0 mm. in 2010-Laoag City Station). The month of August showed a maximum rainfall of (489.8 mm in 2010 –Dagupan City Station vs 452.0 mm. in 2010), respectively. Minimum (tangible) rainfall was seen in January and March.

Based from PAGASA's record, 85 tropical cyclones crossed the Province of La Union 50 km from boundaries from 1948 to 2009. Out of 85, 1 is considered super typhoon, 41 typhoons, 19 tropical depressions and 24 tropical storms. These tropical cyclones crossed the province from the month of April to

December. It is in the months of July and October that tropical cyclones frequently crossed the province 50 km from the boundary.

Based from PAGASA's record, 85 tropical cyclones crossed the Province of La Union 50 km from boundaries from 1948 to 2009. Out of 85, 1 is considered super typhoon, 41 typhoons, 19 tropical depressions and 24 tropical storms. These tropical cyclones crossed the province from the month of April to December. It is in the months of July and October that tropical cyclones frequently crossed the province 50 km from the boundary.

Based on observed values from 1951 to 2010 of PAGASA, the threshold of 480 mm of rainfall per day may likely to occur between 30 to 100 years with a likelihood score of 3 which means that the likelihood of hazard events in the province is unlikely or improbable.



**Figure 2.5.10. Climate Map**

Source: Provincial Development and Physical Framework Plan 2017-2025



## **Natural Hazards**

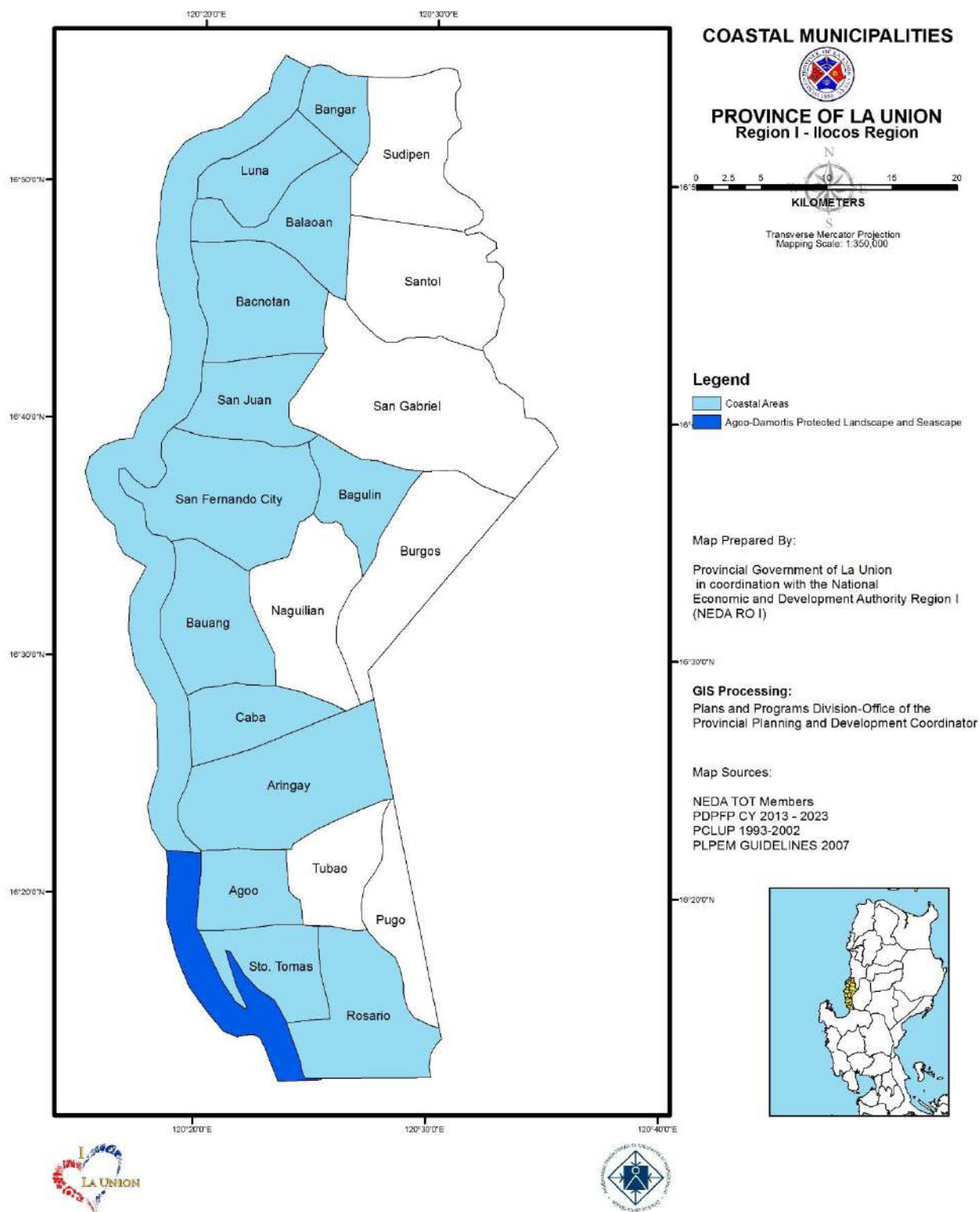
The Western side of La Union is bounded by the Lingayen Gulf and the West Philippine Sea and is prone to tidal surge due largely to storms. Eastward are the flatlands and the agricultural areas which are susceptible to floods due to the overflowing of rivers. Liquefaction areas are in the south-western part of La Union particularly Sto. Tomas, Agoo, Aringay and part of Caba and Bauang. The eastern half of La Union is prone to land erosion owing to its slope (mountainous) and is on the active fault zone. Highly vulnerable in the towns of Rosario, Tubao, Pugo, Burgos, Bagulin, Santol and Sudipen.

## **Coastal Resources**

A total of 45,790.5 hectares of municipal waters is available for marine fishery production. Simple gear used in the area produces 7,062 MT annually. The great East to West transect line shows that La Union is a narrow strip of low land laid North to South and bounded on the East by the mountains or upland areas and on the West by the coast (West Philippine Sea / Lingayen Gulf).

The coastal area is being threatened by the downward flow of pollutant. By mere gravity, transect clearly shows that an uplands pollutant goes down to the lowland and combines with it. Its refuse, finally, drains down to the sea.

The province is one of the few provinces with a Coastal Management Program which ensures the sustainable utilization of the Marine Resources, including riverine areas.



**Figure 25.11. Coastal Municipalities/City**

Source: Provincial Development and Physical Framework Plan 2017-2025

## CURRENT SOLID WASTE MANAGEMENT CONDITIONS

### 3.1. Institutional Arrangements

In the Province of La Union, there has been an increasing initiative among component LGUs on the importance of creating Environment and Natural Resources Office and Positions. The approval of their respective 10-year Solid Waste Management plans somehow made an impact especially to the Local Chief Executives who have expressed their commitments to initiate the creation of environment and natural resources office/ officer to support and ensure the implementation of their plans. Currently, there are three (3) LGUs with full-fledged C/MENRO in the Province. These LGUs are the City of San Fernando, Sto. Tomas, and Naguilian while most of the LGUs have also created Environmental Management Specialists positions.

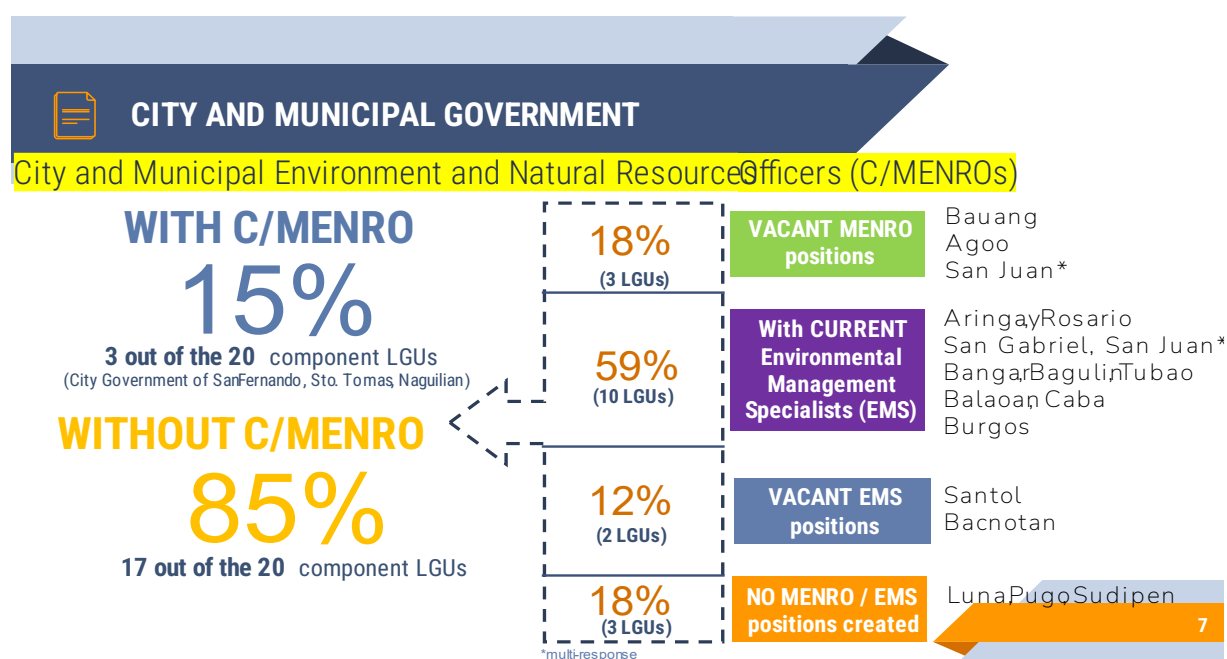


Figure 3.1.1 Status of Creation of Environment and Natural Resources Positions in La Union

As the Province envisioned to become the Heart of Agri-Tourism in Northern Luzon by 2025, both agriculture and tourism work hand in hand with the environment. Hence, along with this vision is the goal of building also an environmentally responsible La Union. In this regard, strengthening manpower resources for environmental programs in the Province is imperative to ensure the attainment and realization of the said goal. Thereby, the Provincial Government of La Union - Environment and Natural Resources Office (PG-ENRO) and the Position of the Provincial Environment and Natural Resources Officer were created in 2020 by virtue of Provincial Ordinance No. 236-2020 *"An Act Creating the Environment and Natural Resources Office (ENRO), and the Position of Provincial Environment and Natural Resources Officer in the Provincial Government of La Union, Appropriating Funds thereto, and for other Purposes."* Anchored on the premise that agri-tourism will only be as good as the environment, the Provincial Government of La Union (PGLU) has been unwaveringly developing and implementing environmental programs, projects, and activities that ensures and strengthens sustainability and integrity of the Province's environment and natural resources through the PG-ENRO's #KalikasanNaman Campaign. In terms of waste management, the Integrated Waste Management Programs and Projects of the PG-ENRO are created to promote waste reduction through prevention, reduction, recycling, and reuse in the Province, aligned with the Sustainable Development Goals (SDGs), specifically on SDG No. 12-5 "Substantially Reduce Waste Generation." These programs are also established in accordance and response to the mandate and targets set forth by the country's existing environmental laws and policies primarily the Republic Act 9003 or the Ecological Solid Waste Management Act of 2000 and the Republic Act 6969 or the Toxic Substances and Hazardous and Nuclear Waste Control Act of 1990.



Section 11 of RA 9003 states that “a Provincial Solid Waste Management Board (PSWMB) shall be established in every province, to be chaired by the governor.” By virtue of the Executive Order No. 8, series of 2024, the PG-ENRO serves as the secretariat of the Provincial Solid Waste Management Board and acts as the chairperson of the Technical Working Group (TWG) of the PSWMB. Thus, PG-ENRO conducts provincewide monitoring of solid waste management of all component LGUs and prepares monitoring reports that are used in planning local solid waste management services and are discussed during PSWMB meeting. The joint monitoring is deemed necessary to produce comprehensive monitoring results relevant in planning local solid waste management services that is aligned to the attainment of the vision of the Province of La Union to become the Heart of Agri-Tourism in Northern Luzon by 2025. The monitoring activity evaluates and assesses the LGUs' status of Implementation of their 10-Year Solid Waste Management Plans, management of toxic and hazardous wastes and wastewater, and District Hospitals' waste management, operational management of solid waste management facilities that includes the sanitary landfill facilities, central and barangay Materials Recovery Facilities, and among other.

Under the Integrated Waste Management Program of PG-ENRO are also the conduct of studies on various areas/issues on waste management such as the Waste Analysis and Characterization Study and other waste management-related studies and researches, and updating/revisiting of plans that will aid in the implementation of solid waste management projects and programs in the Province.

To steer environmental consciousness on proper waste management in the community, one of the activities under the Integrated Waste Management program of PG-ENRO is on the annual conduct of environmental campaign on various areas on waste management such as but not limited to banning on the use of single-use plastics, recycling and upcycling, and on the use of reusable and eco-friendly materials and the annual celebration of National Zero Waste Month and International Coastal Clean-Up. To foster community participation in waste diversion, the Project ECHO which stands for Ecobricking Challenge at Home is On Program was launched.

Infrastructure projects under the Integrated Waste Management Program include the establishment of sanitary landfill facilities, septage treatment plants, and materials recovery facilities. This program also aims to ensure the establishment of pollution prevention and mitigation measures through the environmental infrastructure support projects in collaboration with LGUs and concerned entity.

To give recognition to outstanding LGUs in implementing environmental programs in their respective jurisdictions, the Search for the Cleanest, Safest, and Greenest LGUs, an incentivized program of the PGLU, has been institutionalized through the Provincial Ordinance No. 267-2020 "Institutionalizing the Search for Cleanest, Safest and Greenest Local Government Unit in the Province of La Union." This program also give recognition to LGUs with the cleanest, safest, and greenest bodies of water and to Barangay LGUs with outstanding implementation of *Magsidalus ti Arubayan* through the "*Best Barangay Implementer of Magsidalus ti Arubayan*" awards.

These programs, projects, and activities of the PG-ENRO are geared towards transformative governance that catalyzes the realization of the Province's vision to position La Union as the Heart of Agri-Tourism in Northern Luzon by 2025. With #La Union Probinsyanihan, the Provincial Government remains resolute in its commitment in protecting the environment for the future generations to have a better place to live in.

## 3.2 Inventory of Equipment and Staff

Authorities in charge ensures effectiveness and efficiency in completing SWM tasks. Listed below are the direct personnel-in-charge of the implementation of environmental programs and projects in La Union.

**Table 3.2.1. Personnel-in-Charge of Environmental Programs and Projects in Provincial Government of La Union**

LGU Offices/Units Involved	Role of Office/ Unit in SWM
Provincial Government – Environment and Natural Resources Office	Chairs the Provincial Technical Working Group and Secretariat on SWM that ensures the effective and efficient performance of the PSWMB and prompt implementation, monitoring and evaluation of the plans and programs.
Office of the Provincial Agriculturist	Conducts trainings on composting technologies, carbonized rice hull technologies, and Supervises the Provincial Nurseries with Vermicomposting Projects
Provincial Health Office: (Environmental Sanitation Division)	Member of the PSWMB In charge of the over-all planning, implementation of projects and programs on Environmental Sanitation in the Province Coordinates with City/ Municipal Health Officers in the Province to ensure health and sanitation at LGUs Manages roster of Rural Sanitary Inspectors (RSIs) detailed at the MLGUs
Provincial Planning and Development Office	Member of the PSWMB The main planning body of the Provincial government Ensures that plans are aligned with the Vision, Mission, Goals of the Province Monitoring and Evaluation of the implementation of the plan
Provincial Engineering Office	Member of the PSWMB Main planning and execution body of the Province for infrastructure and engineering development Operation and maintenance of equipment
Provincial General Services Office	Member of the PSWMB Facilities Management – In-charge of the cleanliness of capital surroundings; collection of solid wastes within capital
Provincial Budget Office	Member of the PSWMB Determines budget allocations for solid waste management

Source: 10-Year Solid Waste Management Plan (CY 2014-2023) of the Province of La Union



Table 3.2.2. Personnel-in-Charge of Solid Waste Management Programs &amp; Projects in PG-ENRO

PERSONNEL		
Name	Position	Role
Annalyn Rosario-Valdez	Provincial Government Department Head / PG-ENRO	Chairs the Provincial Technical Working Group and Secretariat on SWM to ensure the effective and efficient performance of the PSWMB and prompt implementation, monitoring and evaluation of the plans and programs.
Shereal M. Catbagan	Supervising Environmental Management Specialist	Assist the Provincial Technical Working Group Chairperson and act as Secretariat on SWM to ensure the effective and efficient performance of the PSWMB and prompt implementation, monitoring and evaluation of the plans and programs.
Onderella D. Ronquillo	Community Development Assistant I	Serve as Secretariat on SWM to ensure the effective and efficient performance of the PSWMB and prompt implementation, monitoring and evaluation of the plans and programs.

Table 3.2.3. Personnel-in-Charge of Environmental Programs and Projects in La Union

LGU	PERSONNEL		
	Name	Position	Status
Province of La Union	Annalyn Rosario-Valdez	Provincial Government Department Head / PG-ENRO	Permanent
City of San Fernando	Valmar Valdez	City Environment and Natural Resources Officer	Permanent
San Juan	Riza Joy A. Abat	Environmental Management Specialist II	Permanent
Bacnotan	Divina Gracia Apigo	Municipal Agriculturist / MENRO Designate	Permanent
San Gabriel	Vhenus Dayso-Laoad	Environmental Management Specialist I	Permanent
Balaoan	Marvin Mark Marron	Environmental Management Specialist I	Permanent
Luna	Alfonso N. Viernes	MENRO Designate	Permanent
Santol	Anna Liza M. Ibay	MENRO Designate	Permanent
Bangar	Michael Karl Flores	Senior Environmental Management Specialist	Permanent
Sudipen	Dexter Jordan Macusi	Engineer II / MENRO Designate	Permanent
Bauang	Marc Alvin Garcia	Environmental Management Specialist I	Permanent
Naguilian	Mark Anthony B. Dilodilo	Municipal Environment and Natural Resources Officer	Permanent
Burgos	Arsenio O. Guillao, Jr.	Environmental Management Specialist I	Permanent
Bagulin	Melchor Gallate	Environmental Management Specialist I	Permanent
Caba	Owen Fonbuena	Environmental Management Specialist II	Permanent
Aringay	Rhea Mae Bautista	Environmental Management Specialist I	Permanent
Agoo	Empress J. Nacor	Supervising Administrative Officer / MENRO Designate	Permanent
Tubao	Christine Joy Viduya	Environmental Management Specialist II	Permanent
Pugo	Mandito T. Abellera	MENRO Designate	Permanent
Sto. Tomas	Roy A. Arongat	Municipal Environment and Natural Resources Officer	Permanent
Rosario	Julius Estacio	Environmental Management Specialist II	Permanent

Table 3.2.4. List of Capacity Building Activities Attended by PG-ENRO personnel

Province		Capacity Building Activities
CY 2018		
PG-ENRO		Orientation Training of Environmental Monitoring Officers on the Provisions of RA 9003 and other Environmental Laws
PG-ENRO		Waste Management Forum "Building the Road to Zero Waste" on March 22, 2018
PG-ENRO		Workshop on the Updating and Finalization of LGUs 10-Year Solid Waste Management Plan (SWMP) on May 23-25, 2018
CY 2019		
PG-ENRO		Waste Management Forum on June 7, 2019
PG-ENRO		Environmental Awareness Campaign among Barangay Officials of Pugo, La Union on December 9, 2019
PG-ENRO		Environmental Awareness Campaign among Barangay Officials of Santol, La Union on October 29, 2019
PG-ENRO		Youth Leadership Training on October 15-16, 2019
PG-ENRO		Division Science Camp KKK Kabataang Kumikilos para sa Kalikasan on October 23-25, 2019
PG-ENRO		4 <sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union on June 25, 2019
PG-ENRO		Local Planning and Development 2019-A: Seminar-Forum on Water Supply, Sewerage, Solid Waste, Air and Water Quality Management Towards Sustainable Development at La Carmela De Boracay Resort Hotel, Boracay, Malay, Aklan on February 12-15, 2019
PG-ENRO		Local Sustainable Sanitation Plan Finalization Workshop and Conference on Health, and Integrated Sanitation Approach at the Department of Health Regional Office 1 Conference Room, City of San Fernando, La Union on July 30, 2019
PG-ENRO		Forum on Waste Management Technologies at the People's Hall, City of San Fernando, La Union on June 7, 2019
PG-ENRO		SWAPCon 2019: Harnessing Energy from Water for Sustainable Development at the Lopez Hall, Bureau of Soils and Water Management, Department of Agriculture, Visayas Avenue corner Elliptical Road, Diliman, Quezon City on November 19-20, 2019
PG-ENRO		Training on Design, Management and Operations of a Sanitary Landfill at the 3/F Philippine Medical Depot, NBS Building, Quezon City on November 21-22, 2019
PG-ENRO		4 <sup>th</sup> Philippine Solid and Hazardous Waste Management Conference in conjunction with the 1 <sup>st</sup> International Conference on Circular Economy-based Waste Management at the Aquino Center and Museum Convention Hall, Tarlac City on December 10-13, 2019
CY 2020		
PG-ENRO		LGU-Bagulin conducted a seminar on proper waste management of piggeries among swine raisers of Brgy. Suyo on December 10, 2020
CY 2021		
PG-ENRO		Waste management awareness campaign on COVID-19 Household Healthcare Wastes on January 27, 2021
PG-ENRO		5 <sup>th</sup> Ecological Solid Waste Management Summit on June 22, 2021
PG-ENRO		Waste Analysis and Characterization Study (WACS) Training on August 24 and 26, 2021
PG-ENRO		5 <sup>th</sup> Philippine Solid & Hazardous Waste Management Conference in conjunction with the 2 <sup>nd</sup> International Conference on Circular Economy-based Waste Management on December 2-3, 2021
PG-ENRO		5 <sup>th</sup> Regional Area-Based Standards Network (ABSNET) Convention cum General Assembly on October 27-29, 2021

PG-ENRO	Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units on January 2021
PG-ENRO	Webinar on Resilient Ecosystems for Sustainable Development in a Changing Climate on September 17, 2021
PG-ENRO	Solid Waste Management Association of the Philippines (SWAPP) Conference 2021 on November 25-26, 2021
CY 2022	
PG-ENRO	Waste Management Awareness Campaign: Total Solid Waste Management Solutions & Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML) on March 18, 2023
PG-ENRO	Training of Trainers: Clean Coasts Project on February 10-11, 2022
PG-ENRO	Training on the Use of Bio-shredder and Dual Drum Composter on July 22, 2022 & October 24-27, 2022
PG-ENRO	6 <sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing
PG-ENRO	Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan
PG-ENRO	Development Academy of the Philippines (DAP) facilitated the conduct of Disaster Waste Management Training to LGUs on July 25-29, 2022
PG-ENRO	Pollution Control Officers' Training on August 25-26, 2022
PG-ENRO	Solid Waste Management Association of the Philippines (SWAPP) on November 17-18, 2022
PG-ENRO	6 <sup>th</sup> Philippine Solid and Hazardous Waste Management Conference in conjunction with the 3 <sup>rd</sup> International Conference on Circular Economy Based Waste Management (Waste No More Conference) at the Philippine Trade Training Center (PTTC) in Pasay City on December 1-2, 2022
CY 2023	
PG-ENRO	Waste Management Awareness Campaign: RA 11898 or the Extended Producer Responsibility Act of 2022 on January 30, 2023

Source: PG-ENRO, 2023

Table 3.2.5. List of Capacity Building Activities Attended by City/Municipality

LGUs	Capacity Building Activities
Province of La Union	
Agoo	<ul style="list-style-type: none"> <li>Waste Analysis and Characterization Study Training</li> <li>Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>Waste Management Awareness Campaign: RA 11898 or the Extended Producer Responsibility Act of 2022</li> <li>Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> </ul>

	<ul style="list-style-type: none"> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme “Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines” on January 26, 2022 in Kabaleyen, San Carlos City and via video-conferencing</li> </ul>
Aringay	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign” COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines’ National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme “Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines” on January 26, 2022 in Kabaleyen, San Carlos City and via video-conferencing</li> </ul>
Bacnotan	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign” COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines’ National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme “Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines” on January 26, 2022 in Kabaleyen, San Carlos City and via video-conferencing</li> </ul>
Bagulin	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and</li> </ul>

	<p>Spa, Bauang, La Union</p> <ul style="list-style-type: none"> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Balaoan	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Bangar	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>

Bauang	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Burgos	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Caba	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> </ul>

	<ul style="list-style-type: none"> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Luna	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Naguillan	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Pugo	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> </ul>

	<ul style="list-style-type: none"> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Rosario	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
San Fernando City	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local</li> </ul>



	<p>Government Units</p> <ul style="list-style-type: none"> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyen, San Carlos City and via video-conferencing</li> </ul>
San Gabriel	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyen, San Carlos City and via video-conferencing</li> </ul>
San Juan	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyen, San Carlos City and via video-conferencing</li> </ul>
Santo Tomas	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility</li> </ul>

	<p>Act of 2022</p> <ul style="list-style-type: none"> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Santol	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Sudipen	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Study Tour at Cleanway Environmental Management Solutions, Inc</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> </ul>

	<ul style="list-style-type: none"> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>
Tubao	<ul style="list-style-type: none"> <li>• Waste Analysis and Characterization Study Training</li> <li>• Waste Management Awareness Campaign: RA11898 or the Extended Producer Responsibility Act of 2022</li> <li>• Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan</li> <li>• 4<sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union</li> <li>• 5<sup>th</sup> Ecological Solid Waste Management Summit</li> <li>• Waste management awareness campaign" COVID-19 Household Healthcare Wastes</li> <li>• Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units</li> <li>• Waste Management Awareness Campaign: Total Solid Waste Management Solutions &amp; Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)</li> <li>• 6<sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing</li> </ul>

To ensure proper implementation and operational management of solid waste management programs, projects and facilities, it is necessary that LGUs are equipped with solid waste management equipment and machinery.

The Provincial Government of La Union (PGLU) owns various heavy equipment for the use in solid waste management and other engineering works as listed below. The PGLU also provides occasional assistance to component LGUs as this equipment are also lent to LGUs. Regular preventive maintenance and repairs for these equipment's are done at the Provincial Motorpool located within the Capitol compound.

Table 3.2.4. Inventory of PGLU Heavy Equipment

Heavy Equipment	Number of Units	Status
Cargo Truck	4	Operational
Dump Truck	14	Operational
Hydraulic Excavator Tractor	2	Operational
Track Type Tractor	4	Operational
Elf Dropside Truck	2	Operational
Bioshredder	2	Operational
Dual Drum Composter	1	Operational

Source: PGSO and PG-ENRO, 2023

The component LGUs are also equipped with the necessary heavy equipment for use in solid waste management. Composting equipment (shredder, composting drums, sieve) are also available in most of the LGUs.

Barangay LGUs and barangay clusters in the City of San Fernando have their own barangay dump trucks and collect within their locality

Table 3.2.5. Sanitary Landfill Management as to Equipment Present and Leachate Monitoring

City or Municipality	Equipment Present							Leachate Monitoring		
	<i>Bulldozer</i>	<i>Backhoe</i>	<i>Waste Compactor</i>	<i>Pave Loader</i>	<i>Crawl Dozer</i>	<i>Garbage Truck</i>	<i>Hazardous Waste Transporter</i>	Frequency of Monitoring	Presence of	
									Chamber	Pond
District I										
City of San Fernando	1	1	1	1	-	11	1	Daily	Yes	Yes
Bacnotan	1	1	-	2	-	3	-	Weekly	Yes	Nb
Balaoan	2	1	-	-	-	4	-	twice a month	Yes	Yes
Bangar	1	1	1	1	1	3	-		Yes	Yes
Luna	1	1	-	-	-	3	-		Yes	Yes
San Gabriel	5-in-1 Equipment					2	-	Weekly	Yes	Yes
San Juan	-	1	1	-	-	3	-			
Santol	-	1 (rental)	-	1 (rental)	-	1	-	Weekly	Yes	Yes
Sudipen	-	1	-	1	-	2	-		Yes	Yes
District II										
Agoo	1	1	-	1	-	7	1	-	Yes	Yes
Aringay	1	2	-	-	-	2	-	Daily	Yes	Yes
Bagulin	1	1 (rental)	-	1	-	2	-			

Bauang	1	2	1	-	1	3			Yes	Yes
Burgos	-	1	-	-	1	4	-	-	-	-
Caba	1	1	-	-	-	2	-	-	-	-
Naguilian	1	1	-	-	-	7	-	Monthly	None	None
Pugo	-	1	-	-	-	2	-		Yes	Yes
Rosario	-	1	2	-	-	5	-	Weekly	Yes	Yes
Sta. Tomas	1	1	-	-	1	2	-	-	Yes	Yes
Tubao	1	-	-	-	-	2	-	-	-	-

Source: PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023

For the bulldozer, 13 out of the 20 LGUs were already using it. This equipment will surely help in spreading wastes efficiently. For the backhoe, 19 out of the 20 LGUs were already using it. This equipment will surely help in organizing wastes in the facility. During the SWM monitoring, some municipalities mentioned that they are using it as a compactor by tampering the soil through its bucket. For the compactor, only 6 out of the 20 LGUs have been using it, which implies that the rest SLFs don't have proper compaction equipment. For the pay loader, only 8 out of the 20 LGUs were using it. For the crawl dozer, 4 out of the 20 LGUs have it and for the garbage trucks all of the city and municipality have it, which implies that they are collecting wastes from the barangays to ensure that no wastes are scattered and disposed illegally.

### 3.3. Source Reduction

Source reduction is the minimization of wastes or practices prior to the generation of wastes. To do so, enforcement of various ordinances is the key of achieving significant reduction or minimization of wastes at source especially on the prohibition on the use of single use plastics, regulation on the use of paper-based/ biodegradable disposables, and the promotion on the use of reusable materials. To date, all of the 20 component LGUs have enacted their own ordinances on regulation/prohibition as listed in Table 3.3. however they vary in terms of enforcement. Some of these ordinances pushes for the prohibition while others are on the side of regulation. Hence, the Provincial Ordinance No. 426-2023 “ Enacting the Single-Use Plastics (SUPs) and other Reusable and Disposable Materials Code of the Province of La Union” or also known as the “ 2023 Plastic Code of La Union” was enacted for a unified policy in the Province. The Plastic Code of La Union shall promote the use of reusables, regulate the use of compostables, and prohibit the use of plastics thus reducing the volume of plastic wastes at source.

Table 3.3.1. La Union Component LGUs List of Plastic Ordinances

Agoo	Ordinance No. 06-2018 Prohibiting the Use and Sale of plastic bags, Styrofoam and other containers which cannot be recycled and reused at the Agoo Hypermarket and in all business establishments within the territorial jurisdiction of the Municipality of Agoo Providing Penalties Thereof
Bangar	Ordinance No. 2012-002 “Regulating the Sale and Use of Plastic Bags and Styrofoam” Salient Features: <ul style="list-style-type: none"><li>• Prohibition on the use of plastic bag on dry goods</li><li>• Regulating the use of plastic bags on wet goods</li><li>• Prohibition on the use of Styrofoam as containers for food products</li></ul>
Bauang	Resolution No. 194 series of 2011 “Resolution Enacting an Ordinance Prohibiting the Use of Plastic Bags on Dry Goods, Regulating its Use on Wet Goods and Providing penalties thereof”
Caba	Ordinance No. 003, Series of 2017 “An Ordinance Prohibiting the Use of Plastic Bags on Dry Goods, Regulating its Use on Wet Goods and Providing Penalties Thereof”

Luna	Ordinance No. 71-2017 "An Ordinance Regulating the Use of Plastic Bags and Expanded Polystyrene (Styrofoam) Food Service Containers in the Municipality of Luna, La Union and Providing Penalties for Violation Thereof"
Pugo	Ordinance No. 2017-125 "An Ordinance Regulating the Use and Sale of Plastic Bags as Packaging Materials and Polystyrene Commonly known as Styrofoam for Food and Beverage Containers in the Municipality of Pugo, La Union and Providing Penalties Thereof"
Naguilian	Ordinance No. 17 "Plastic Ban Ordinance" 2011 Salient Features <ul style="list-style-type: none"> <li>• Prohibits the sale and use of plastic bags</li> <li>• The use of indigenous materials in packing goods to reduce plastic waste</li> </ul>
San Gabriel	Ordinance No. 7 -2012 "Ordinance regulating the use of plastic bags in commercial establishments in the municipality of San Gabriel, La Union and providing penalties for violation thereof"
Sto. Tomas	Ordinance No. 03, s. 2012 "An Ordinance Regulating the Use and Sale of All Single-Use Plastic Bags, Bottles, Wrappers, Containers and Other Non-Ecological Friendly Materials in Government Offices, Department Stores, Stores, Malls, Groceries, Bakeries, Restaurants, Eateries, and Other Similar Establishments and Prohibiting the use of Styrofoams/Styrophor Within the Territorial Jurisdiction of the Municipality of Santo Tomas, La Union and Prescribing Penalties Thereof "
Sudipen	Ordinance Number 90 s. 2011 "Ordinance Prohibiting the use of Plastic Bag on Dry Goods and Regulating its Utilization on Wet Goods and Prohibiting the use of Styrofoam in the Municipality of Sudipen, La Union and Prescribing Penalties Thereof".
Rosario	Ordinance No. 1 s. 2018 "An Ordinance Regulating the Use of Plastic Bags and Styrofoam Food Containers used by Business Establishments and Ambulant Vendors within the Territorial Jurisdiction of Rosario, La Union and Providing Penalties to Violators Therefore."
Tubao	Ordinance No. 12 s. 2018 "Ordinance regulating the use and sale of plastic bags, plastic cellophane, Styrofoam and styropor (polyethylene) as bagging and packing materials in the Municipality of Tubao, La Union"
Burgos	Ordinance No. 63-2016 "Ordinance regulating the use and sale of plastic bags & polystherene foam containers as packaging materials"
Aringay	Ordinance No. 175-2015 "Prohibiting the Use Of Plastic Bags On Dry Goods And Regulating The Use And Sale Of All Single-Use Plastic Bags And Styrofoam/ Styrofor On Wet Goods And Providing Penalties Thereof
San Juan	Ordinance No. 02-2017 "Ordinance prohibiting the use of plastic bags in packing goods or merchandise."
Bagulin	Ordinance No. 1 series of 2019 "An Ordinance Prohibiting and Regulating the Use of Plastic Materials such as Cellophanes, Plastic Bags, Plastic Cups, Plastic Straws, and Styrofoams within the Municipality of Bagulin, La Union and Providing Penalties for Violations"
Santol	Ordinance No. 2017-129 "Ordinance Regulating the Use of Plastic and Styrofoam in the Municipality of Santol and Providing Penalties Thereof.
Balaoan	Ordinance No. 24 s. 2017 "An Ordinance Prohibiting the Use of Plastic Bags as Packaging Materials for Dry Goods, Regulating its Use on Wet Goods, and Prohibiting the Use of Expanded Polystyrene

	("Styrofoam") as Food and Beverage Containers in the Municipality of Balaoan and Prescribing Penalties Thereof
Bacnotan	Ordinance No. 2012-476 "An Ordinance Prohibiting the Use and Sale of Plastic Bags and Wrappers on Dry Goods, Regulating its Utilization on Wet Goods and Prohibiting the Use, Sale, and Give Away of Styrofoam/ Styrophor within the Municipality of Bacnotan, La Union and Prescribing Penalties for the Violation Thereof"
City of San Fernando	<p>City Ordinance No. 2014-03 "An ordinance regulating the use of plastic and Styrofoam in the City of San Fernando and providing penalties for violations thereof"</p> <p>Salient Features</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> All business establishments and ambulant vendors shall be prohibited from <ul style="list-style-type: none"> <li>○ direct selling, using and providing plastic bags and Styrofoam as secondary packaging/multi-packaging material for wet goods</li> <li>○ direct selling, using and providing plastic bags as primary packaging materials for dry goods</li> <li>○ using plastic drinking straws for soft drinks and juice drinks from bottles and vending machine, except those that come in a package</li> <li>○ using plastic utensils and plates, and Styrofoam food containers for dine-in purposes.</li> <li>○ The use of cloth bags, tote bags, woven bags, reusable bags and recyclable paper bags and other similar materials is strongly encouraged.</li> </ul> </li> </ul>

Source: 10-Year Solid Waste Management Plan of each component LGUs



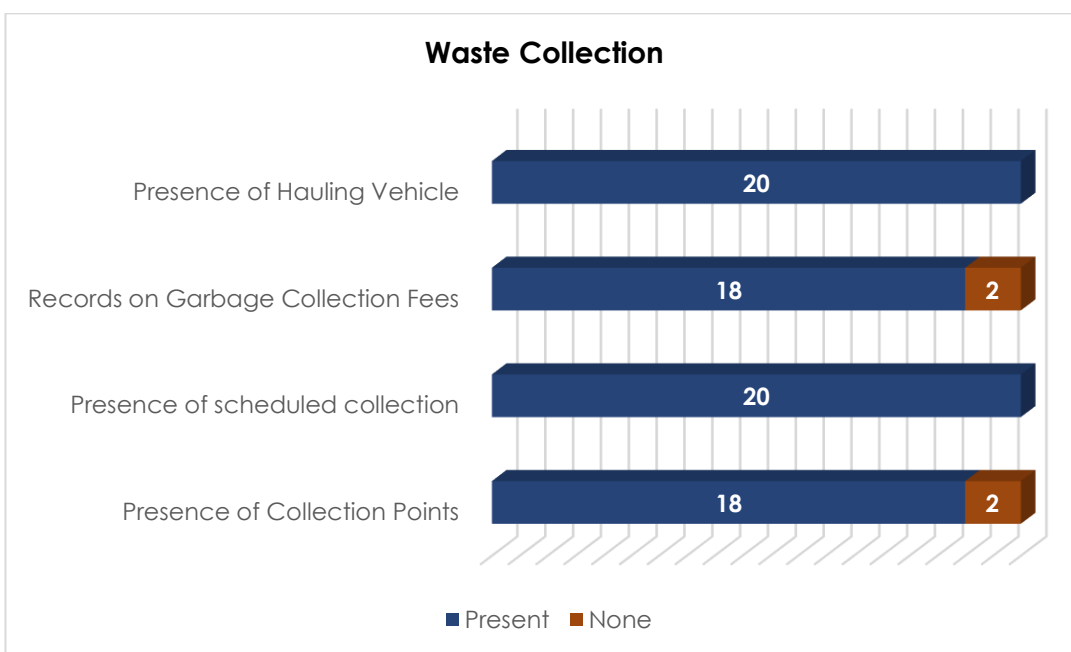
Table 3.3.2. Existing Source Reduction Programs per City/Municipality

LGU	Regulation/Prohibition of Sales & Use of Plastic Bags	No Segregation, No Collection Policy	Anti-Littering	Anti-Burning especially Yard & Farm Waste and Plastic Wastes	Composting in every Home	Environmental Code	Records on the fines and penalties
Agoo	Present	Present	Present	Present	Present	Present	Present
Aringay	Present	Present	Present	Present	Present	Present	Present
Bacnotan	Present	Present	Present	Present	None	Present	Present
Bagulin	Present	Present	Present	Present	Present	Present	Present
Balaoan	Present	Present	Present	Present	Present	Present	None
Bangar	Present	Present	Present	Present	Present	Present	Present
Bauang	Present	Present	Present	Present	Present	Present	Present
Burgos	Present	Present	Present	Present	None	None	Present
Caba	Present	Present	Present	Present	None	Present	Present
Luna	Present	Present	Present	Present	Present	Present	Present
Naguillan	Present	Present	Present	Present	Present	Present	Present
Pugo	Present	Present	Present	Present	Present	Present	None
Rosario	Present	None	Present	None	Present	Present	None
San Fernando City	Present	Present	Present	Present	None	Present	None
San Gabriel	Present	Present	Present	Present	Present	Present	Present
San Juan	Present	Present	Present	Present	Present	Present	Present
Santo Tomas	Present	Present	Present	Present	Present	Present	None
Santol	Present	Present	Present	Present	Present	Present	Present
Sudipen	Present	Present	Present	Present	Present	Present	None
Tubao	Present	Present	Present	Present	Present	Present	Present

Source: PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023

### 3.4 Collection

An optimal garbage collection, schedule and route results to efficient use of labor and equipment. Most of the LGUs have their own garbage collection vehicles, have identified collection points and set scheduled collection. They also keep records on collection fees.



**Figure 3.4.1 Status of Waste Collection in La Union**

Source: PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023

Most of the LGUs are collecting garbage fees, which mean additional fund is generated and can be used to further enhance their facilities or purchase additional SWM equipment. Majority of the LGUs had established a collection points within the barangays, which implies to a more organized collection of garbage.

All of the LGUs have a structured waste collection schedule. Majority of the component LGUs have a schedule of daily waste collection. Some LGUs are

collecting Biodegradables, Recyclables, Residuals and Special waste on different day, some were collecting it daily and some are collecting it as needed. Having a structured waste collection schedule implies that garbage will be collected in order and the people will know when to place their wastes on the designated collection points to avoid scattered garbage caused by animals.

Although, segregation at source and collection of segregated waste are encouraged and included in the provisions of the LGUs' local ordinance, this was not strictly enforced and practiced. There are also areas not covered by LGU in waste collection such that of in coastal and upland areas that are hard to reach and with low densities of households. Fourteen (14) out of the 20 LGUs were already collecting garbage in all of their barangays namely; City of San Fernando, Bacnotan, Balaoan, Bangar, Luna, Sudipen, Agoo, Bauang, Burgos, Caba, Naguilian, Pugo, Rosario and Santo Tomas. For San Gabriel, Santol, Aringay, and Bagulin, the collection percentage is above 50%. For San Juan and Tubao only 14.63% & 33.33% % of barangays were collected.

**Table 3.4.1 Waste Collection Schemes in La Union**

LGUs	Barangays	% Collection Coverage	Presence of segregated collection for each type of wastes			
			Biodegradables	Recyclables	Residuals	Special Wastes
Bangar	33	100%	Daily (4-5 PM)	Daily (8-9 AM)	Daily (3-4 PM)	Daily (9-10 AM)
Bauang	39	100%	No Collection	Weekly	Daily	Monthly
Aringay	24	83.33%	Daily (AM)	Daily (AM)	Daily (P.M)	Daily
Burgos	12	100.00%	Monday, Wednesday and Friday	Monday, Wednesday and Friday	Monday, Wednesday and Friday	Monday, Wednesday and Friday
Luna	40	100%	Daily	Daily	Daily	Daily
Naguilian	37	100%	Daily (market)	Daily	Daily	Daily
Caba	17	100%	Monday, Friday	Monday, Friday	Tuesday to Friday	None
Pugo	14	100%	Daily	Daily	Daily	As needed
San Gabriel	15	75.00%	Daily (Poblacion)	Daily	Daily	Daily
Santol	11	54.55%	Tuesday and Thursday	Monday, Wednesday and Friday	Monday, Wednesday and Friday	Saturday
Balaoan	36	100%	No Collection	On-call	Daily	Once a Month
Bacnotan	47	100%	Daily	Daily	Daily	Daily
City of San Fernando	59	100%	Monday to Sunday	Directed to Junkshop	Daily	Upon Request
Sa. Tomas	24	100.00%	None	As needed	Daily	As needed
Bagulin	10	60.00%	No Collection	Monday, Wednesday and Friday	Monday, Wednesday and Friday	Collection conducted at RHU

San Juan	41	14.63%	Monday - Friday	Sold to Junkshop	Monday - Friday	Stored at Barangays
Tubao	18	100.00%	Tuesday - Sunday	None	Monday - Sunday	Monday, Thursday
Rosario	33	100.00%	Daily	Daily	Daily	Daily
Agoo	49	100.00%	Daily		Daily	Stored at Barangays
Sudipen	17	94.00%	None	Wednesday	Monday, Wednesday	Wednesday

Source: PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023

### 3.5. Transfer

At present, all the LGUs do not have transfer stations since most of them have their own waste disposal facilities within their jurisdiction.

### 3.6. Processing Facilities

Broad distribution of Materials Recovery Facility (MRF) ensures great quantity of recyclable and compostable materials are received, sorted, processed and stored until it's ready for remanufacturing and reprocessing. This process can result in less usage of raw materials by manufacturers. In La Union, all of the component LGUs have already established a central MRF and all the barangays have their own MRFs. There is a total of 1,726 Materials Recovery Facilities in La Union.

**Table 3.6.1. Frequency Distribution of Materials Recovery Facility in LGUs**

Local Government Units	Total Number of MRFs
Agoo	52
Aringay	25
Bacnotan	205
Bagulin	10
Balaoan	259
Bangar	231
Bauang	42
Burgos	12
Caba	18
City of San Fernando	62

Luna	180
Naguilian	38
Pugo	30
Rosario	40
San Gabriel	265
San Juan	137
Santol	11
Sta. Tomas	75
Sudipen	17
Tubao	17
<b>TOTAL</b>	<b>1,726</b>

Source: PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023

Through the *SoLUsyon sa PoLUsyon* strategic initiative of the PGLU, three (3) District Hospitals, namely, Balaoan District Hospital, Rosario District Hospital, and Naguilian District Hospital were assisted in the establishment of their own Materials Recovery Facility. Currently, there (2) Hazardous Waste Storage Facility in the Province wherein one (1) is located in La Union Medical Center in partnership with Cleanway Environmental Management Solutions, Inc and the other one (1) is located in Bacnotan District Hospital, a grant from the Department of Environment and Natural Resources – Environmental Management Bureau Region 1.

## SoLUsyon sa PoLUsyon

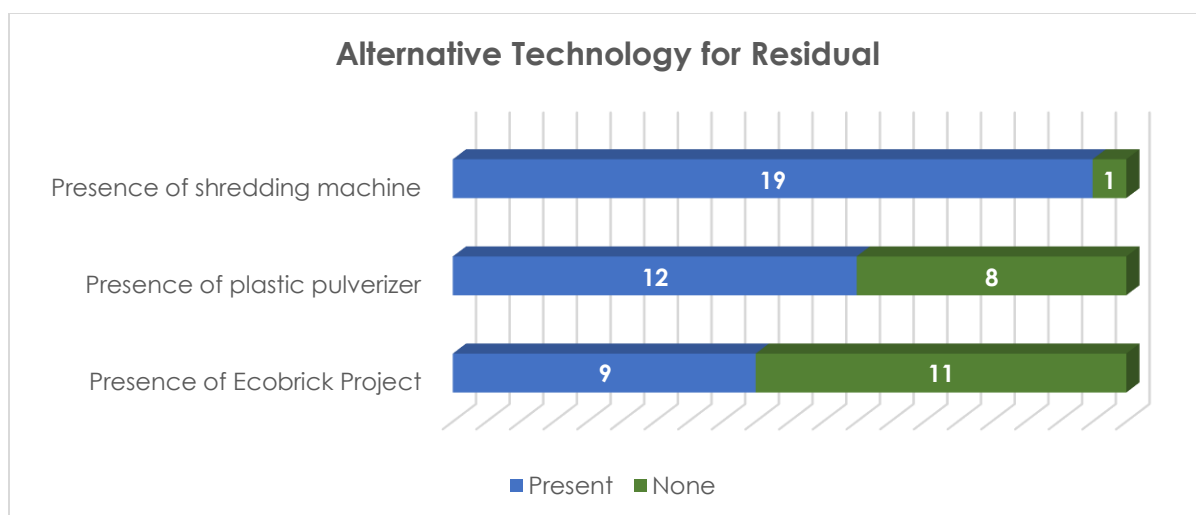
### Forward Environmental Infrastructure Support



**Figure 3.6.1. Materials Recovery Facilities and Hazardous Waste Storage Facilities in District Hospitals**

Source: PGLU Presentation during the 7<sup>th</sup> Regional Ecological Solid Waste Management Summit

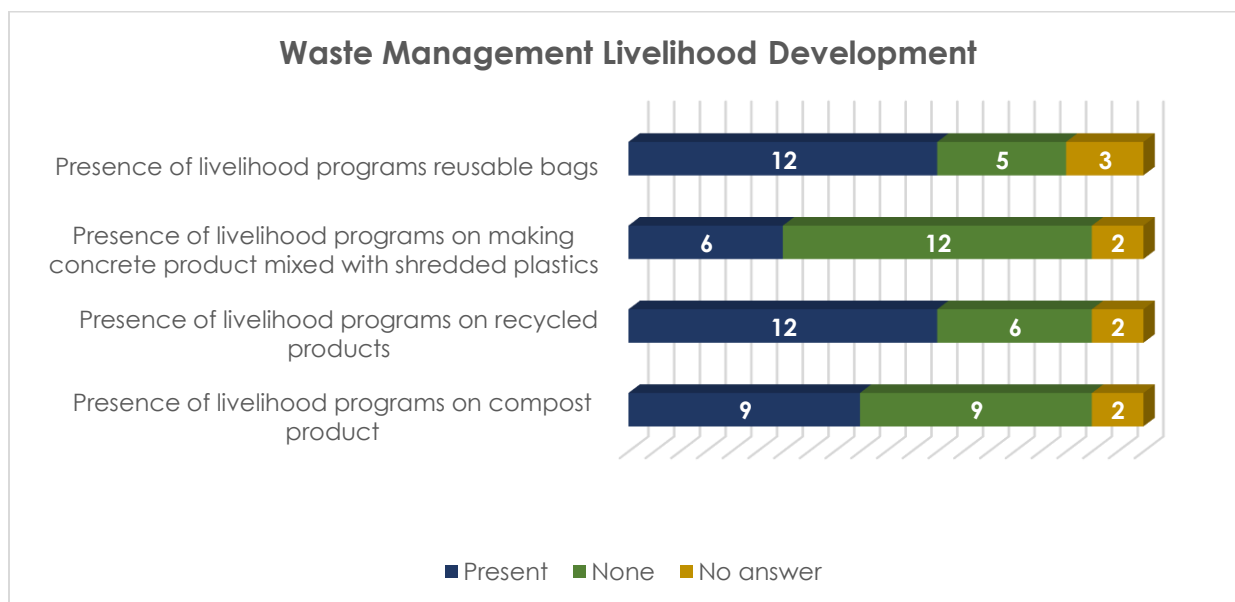
Residual wastes with potential for diversion can also be processed through ecobrick-making. Nine (9) out of the 20 LGUs have already established an ecobricking project. During the monitoring, LGUs without ecobricks project are highly encouraged to conduct this project, so that bottles that cannot be recycled or not being bought by junkshops can be used in making an ecobricks. Presence of ecobrick projects were observed in Agoo, Bacnotan, Bauang, Burgos, Caba, Luna, City of San Fernando, San Juan, and Santo Tomas. Having these programs will be a big help to prolong the lifespan of SLF, as some of the wastes will be reused and recycled through making a new product out of it.



**Figure 3.6.2 Alternative Technology for Residual**

Source: PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023

There are 12 LGUs that are equipped with plastic pulverizer and 19 LGUs with shredding machine. Presence of livelihood programs on compost product, recycled product, concrete product mixed with shredded plastics and reusable bags are all present in the municipalities of Agoo, Bangar, Burgos, City of San Fernando, and Santol. Having these facilities also contributes in prolonging the lifespan of SLF.

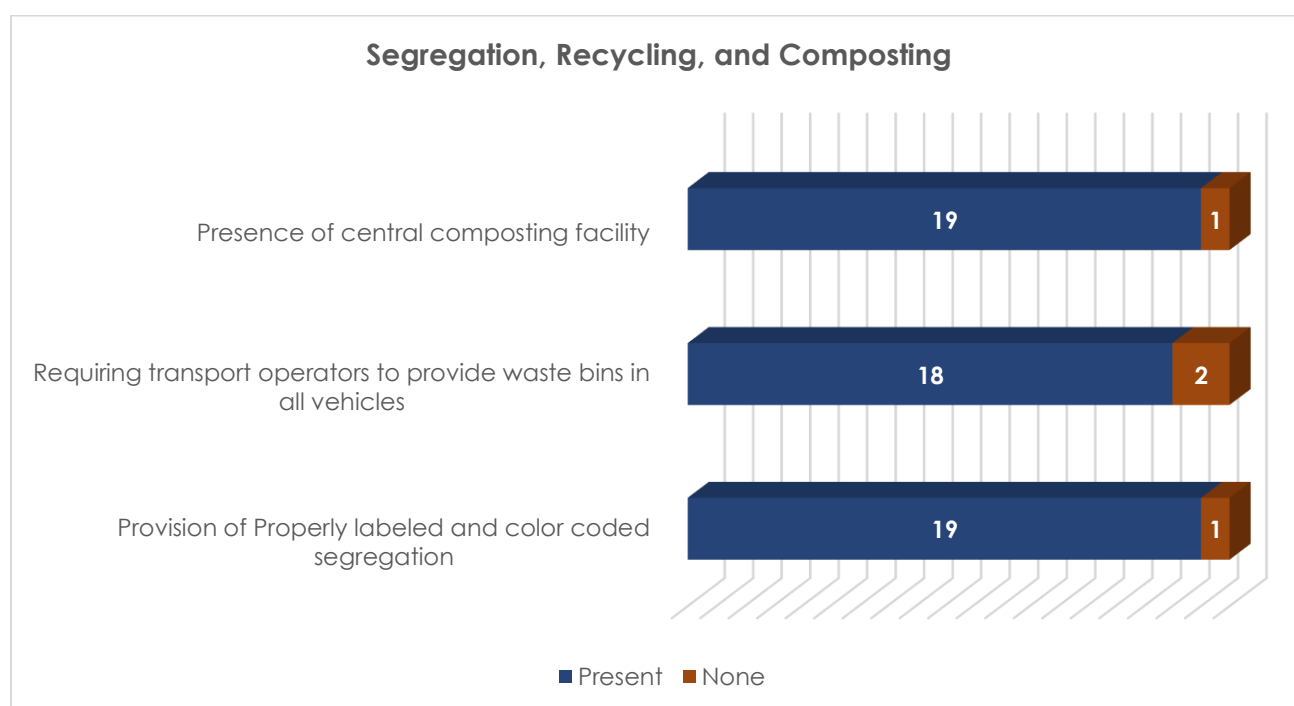


**Figure 3.6.3 Waste Management Livelihood Development**

Source: PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023



Almost all of the LGUs have already established a central composting facility and commonly located on their Sanitary Landfills and Nursery. The types of composting being utilized by the LGUs are as follows; Ordinary Composting, Vermi-Composting, Rotary Composter, Bio-Composter, Aerated Composting and Aerobic Composting. Moreover, there are also barangays with composting facility which indicate that the idea of composting is downloaded up to the barangay level. During the monitoring the most common problem encountered is the availability of electricity, as most of the LGUs cannot use their bio-composter.



**Figure 3.6.4. Status of Segregation, Recycling, and Composting in La Union**  
Source: PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023

Table 3.6.1 Status of MRFs, Segregation, Recycling, and Composting in La Union

LGUs	Material Recovery Facility			Segregation, Recycling, and Composting			
	% Brgy. MRF Compliance	% Brgy proper record keeping	Means of Enforcement	% of Brgy. with composting facilities	Composting method utilized	% Households practicing composting	% of Farmers Practicing Composting and Utilizing Compost
1 <sup>st</sup> District							
City of San Fernando	100		IEC, Palit Basura, Palit Bombilya		Vermi Composting and Rotary Composter		
Bacnotan	100	100	Through Ordinances	55.319	Biocomposter		
Balaoan	100		No Segregation, No Collection and Recycling & Greening Practices		Vermi Composting		
Bangar	100	100	Existing Partnership and Ordinance	100	Aerated Composting	82.42	90
Luna	100	70	No Segregation, No Collection	100	Vermi Composting		
San Gabriel	100	100	Regular Monitoring, OVR issuances for the violators and incentive programs	100	Vermi Composting	100	90
San Juan	100	100	MDAw/ Junkshop (Palit Basura)	0	Aerobic/Anaerobic Composting	100	100
Santol	54.55	54.55	Through Ordinances, With Complete color coded bins - thru segregation at source	75	Biodegradable	75	75
Sudipen	100		Through Ordinance	94.12	Vermi Composting, Composter & Shredder		
2 <sup>nd</sup> District							
Agoo	100	90	Issuance Citation Ticket	100	Vermi Composting	12	
Aringay	100	12.5	No Segregation, No Collection	75	Vermi Composting	75	75
Bagulin	100		No Segregation, No Collection				
Bauang	100	100	IEC, No Segregation No Collection	-	Vermi Composting	85	85
Burgos	100	100	No Segregation, No Collection		Vermi Composting	75	75
Caba	100	100		75	Vermi Composting	100	100
Naguilian	100	70	We Care, Project Neri (Barangays and Schools) and Project Arts	60%	Vermi Composting	100	100
Pugo	100		Through Ordinances	85.71	Rotary Composter		

Rosario	100	51.52		Most barangays do not have available areas	Vermi Composting		
Sto Tomas	100	100	IEC	100	Ordinary Composting	50	50
Tubao	100	61.11	Ordinance - No Segregation, No Collection Policy	61.11		80	33

Source: PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023

Provision of properly labeled and color-coded segregation receptacles in public areas are done in almost all of the LGUs. It is also the same case when it comes to requiring transport operators to provide waste bins in all vehicles where almost all of the LGUs are imposing.

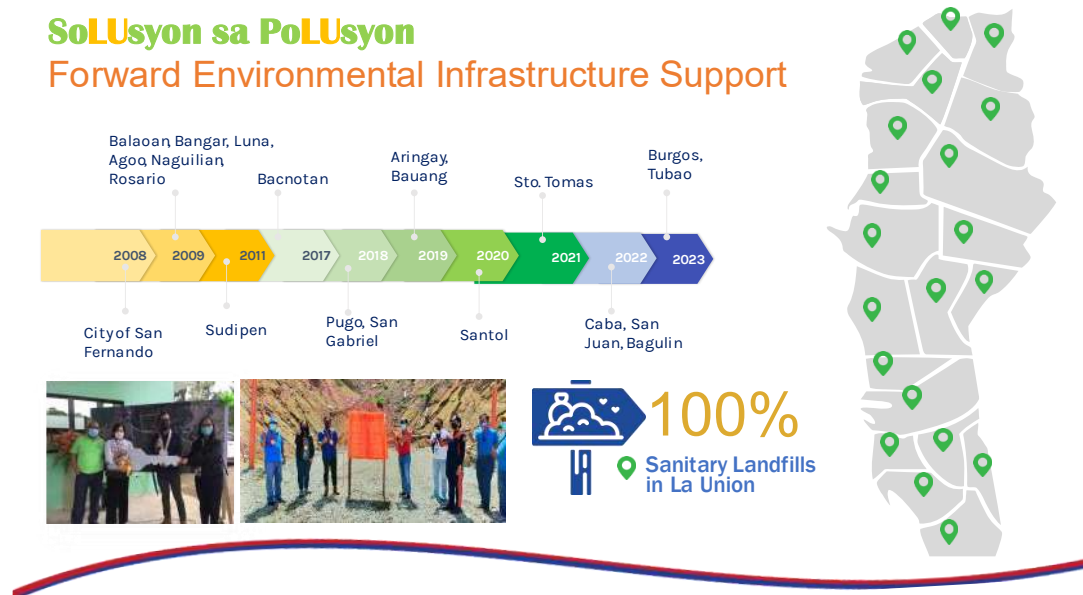
Presence of central composting facility are observed in all LGUs of La Union. Majority of the municipality utilizes vermicomposting as a composting method. Some LGUs like San Juan is using Aerobic and Anaerobic composting. The municipalities of Agoo, Bangar, Luna, San Gabriel, San Juan and Santo Tomas recorded 100% in all their barangays practicing composting. Mandatory composting of households and farmers are also being observed in the Province.

### 3.7. Final Disposal

With the *SoLUsyon sa PoLUsyon* strategic initiative of the PGLU which aims to ensure that pollution prevention and mitigation measures are in place in the Province through the provision of assistance to LGUs in the establishment of various pollution control and other environmental infrastructure projects, there are a total of 20 sanitary landfill facilities in La Union located and managed by each of the 20 component LGUs of La Union.

All of these sanitary landfill facilities maintained proper record keeping through their logbooks to record the weight of the wastes being disposed. The City of San Fernando has the highest daily waste collection rate of 67.2 tons due to the presence of malls and being the capital of the province of La Union making the facility of the City classified as Category II. The rest were recording

a daily waste collection rate of 2 tons and below hence classified as Category I as they are averaging less than 15 Tons per day.



**Figure 3.7.1. Final Disposal Facilities in La Union by Year of Establishment**

Source: PGLU Presentation during the 7<sup>th</sup> Regional Ecological Solid Waste Management Summit

There is limited manpower in all of the municipalities in terms of waste management. On the other hand, City of San Fernando has adequate personnel as they have 33 manpower designated at the SLF. Due to this lack of manpower, personnel in charged are tasked to do different jobs simultaneously.

Soil covering is conducted on a daily, weekly, quarterly, every after disposal and as needed in these facilities. This practice helps to eliminate the odor from the wastes disposed and also avoid wastes to be scattered due to strong winds. Waste compaction is also practiced in these facilities which indicate that cell capacity will be properly utilized and SLF lifespan will be somehow prolonged.

For the presence of monitoring well within the facility, only 9 LGUs with SLF meet this requirement. As for water quality, currently only 7 LGUs were conducting

test namely; City of San Fernando, Bacnotan, Bangar, Luna, Rosario, Bauang and Agoo. As for other municipalities they mentioned during the monitoring that they will be conducting water quality test. For the municipalities without monitoring well within the facility PG-ENRO and DENR-EMB R1 recommended that water quality test must still be conducted and water samples will be collected on the nearest households.

In terms of leachate monitoring conducted by the LGUs, 8 out of the 20 LGUs with SLF were conducting inspection, some were daily, monthly, twice a month and the rest were conducting it weekly. These shows that some of the LGUs were not conducting it on a regular basis and the other LGUs were not even conducting an inspection. Lastly, the presence of leachate chamber and pond, for the LGUs with SLF only the municipality of Naguilian doesn't have this facility. During the monitoring personnel from the said municipality mentioned that their leachate pond and chamber were covered with soil due to the landslide caused by a typhoon. Through these data, LGUs are encouraged to conduct a regular inspection/monitoring to avoid any malfunctions and problems on these facilities.

As shown in Table 3.7.1. , there are sanitary landfill facilities that are already full or maximized their capacity, hence, the PGLU shall continue its assistance to these facilities to ensure the optimum disposal of wastes provincewide.

Table 3.7.1 Information on Sanitary Landfill Facilities in La Union

City/Municipality	Barangay	Area		Environmental Compliance Certificate (ECC) Number	Year Established	Lifespan (Years)	Remaining Lifespan (years)
		Total Area (hectares)	Area Utilized (has)				
1 <sup>st</sup> District							
City of San Fernando	Mameltac	10.5	3.5	ECC-001-018-2130	2008	25	9
Bacnotan	Bitlag	7	1	ECC-OL-ROI-2017-0220	2018	100	96
Balaoan	Nagsabaran Norte	6	2	ECC-RI-0902-023-9999	2008	25	11
Bangar	Cadapli	2.85	-	ECC-RI-0905-084-9999	2009	24	11
Luna	Sucoc Norte	1.15	0.7	ECC-ROI-0909-0024	2009	25	13
San Gabriel	Poblacion	3.1	0.5	ECC-OL-ROI-2018-0167	2019	10	6
San Juan	Lubing	4.5	2.6	ECC-OL-ROI-2022-0274	2023	100	100
Santol	Paagan	2.4	1.70	ECC-OL-ROI-2019-0126	2020	24	21
Sudipen	Seng-ngat	0.6	0.25	ECC-ROI-1104-0078	2021	11	0
2 <sup>nd</sup> District							
Agoo	San Agustin	4.2758	4.2758	ECC-OL-ROI-2022-0379	2009	15	1
Aringay	Poblacion	4.79	0.3	ECC-OL-ROI-2019-0112	2021	3	1
Bagulin	Suyo	2.425	0.32	ECC-OL-ROI-2022-0328	Ongoing Construction at Brgy. Suyo		
Bauang	Acao	6.56	3.53	ECC-OL-ROI-2019-0230	2018	10	6
Burgos	Upper Tumapoc	0.9457	-	ECC-OL-ROI-2023-0138	Ongoing Construction at Brgy. Upper Tumapoc		
Caba	San Cornelio	2.98	0.52	ECC-OL-ROI-2020-0264	Ongoing Construction at Brgy. San Cornelio		
Naguilian	Cabaritan Norte	4.2	2	ECC-ROI-0902-026-999	2009	25	11
Pugo	Maoasas Norte	3	0.27	ECC-OL-ROI-2018-0228	2021	30	28
Rosario	Inabaan	3.4	1.2	ECC-ROI-0911-0067	2010	60	47
Santo Tomas	Namonitan	2.8	0.90	ECC-OL-ROI-299-0366	2021	18	16
Tubao	Caoique	2.5	-	ECC-RI-0903-053-9999	2023		

Source: PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023

In terms of wastewater management, most of the LGUs have septic tanks or decentralized wastewater treatment system in placed in their public markets and slaughterhouses. There are five (5) wastewater treatment facilities in La Union situated in the central and central eastern circuits.

## SoLUsyon sa PoLUsyon

### Forward Environmental Infrastructure Support



Figure 3.7.2 Wastewater Treatment Facilities in La Union

Source: PGLU Presentation during the 7<sup>th</sup> Regional Ecological Solid Waste Management Summit

### Working Condition of Scavengers

Shown below is the evaluation of the situation of scavengers working at the existing dumpsite.

Table 3.7.2 Current Situation of Scavengers and Waste Pickers per City/ Municipality

Local Government Units	Waste Pickers Condition
Agoo	Waste pickers (20 members) are organized wherein they were given everyday task to segregate and maintain the MRF. They are also given medical support from the LGU to ensure health and safety.
Aringay	There is no waste pickers allowed to enter the premises because it is prohibited by the municipality.
Bacnotan	No data
Bagulin	There were two (2) spotted informal waste pickers of recyclable materials in the dumping site but no health and safety provisions were provided by the LGU
Balaoan	Waste pickers or scavengers are not allowed in the landfill site.

Bangar	There are 10 waste pickers residing near the facility wherein they recovered recyclable materials from the municipal WDF coming from households, market, business establishments and school. Recyclables such as paper (white, carton, mixed), plastics (PET, HDPE, LDPE and other salable), metals (aluminum, tin, alloy, bronze) and glasses are the types of materials they recover. They individually sell these to the junkshop or itinerant buyers frequenting the WDF.
Bauang	No data
Burgos	No data
Caba	There are presence of scavengers in the dumpsite but no definite record.
Luna	There are 4 waste pickers working inside the disposal facility but no health and safety provisions were provided by the LGU
Naguilian	Scavengers within the sanitary landfill site are not allowed.
Pugo	All segregated waste will be dumped in the proposed final disposal facility and the recyclables will be the responsibility of scavengers who will occupy the area through Memorandum of Agreement between the scavengers and LGU
Rosario	Utility workers are the ones segregating wastes at the Material Recovery Facility and sell their collected wastes at the junk shops within the municipality.
City of San Fernando	There are 55 individuals accredited as scavengers/waste pickers thru Department of Labor and Employment (DOLE) who perform the final segregation and recycling. As there is no area for secondary segregation within the landfill, the waste pickers do the final sorting and recovery of materials in the active cell prior to the waste being disposed. The following table is an example of the type of materials diverted from landfilling on a monthly basis.
San Gabriel	The dumpsite caretaker and ECO-SAVER organized by the municipality were the only personnel authorize to segregate/sort the solid waste collected.
San Juan	After wastes are disposed on the controlled dumpsite, a group of six individuals belonging to the same family picks recyclable materials. According to the eldest person in the group they started picking when the controlled dumpsite was established in 2006. She mentioned that they are spending one to three hours daily picking and earns one thousand to three thousand five hundred pesos a month each for trading recyclable materials they pick. According to her they remained healthy and had not been hospitalized due to any disease or illness caused by hazards of garbage picking. She said that picking recyclables from the controlled dumpsite help their family financial needs.
Santo Tomas	No waste pickers scavenging in the landfill area.
Santol	No data
Sudipen	No data
Tubao	Waste pickers scavenging in the landfill is unaccounted since no permanent personnel is detained in the area.

Source: Excerpted from the 10-Year Solid Waste Management Plans of component LGUs

### 3.8. Special Wastes

In an effort to safeguard the quality of environment and public health, the Provincial Government of La Union through the Environment and Natural Resources Office and Provincial Health Office proposed the development of provincial special waste management system for household and LGU-owned healthcare facilities (i.e., Rural Health Units, clinics, laboratories, and barangay health centers) hence an online survey on January to October 2021 among households to gather baseline data on the types of special wastes generated among the component local government units (LGUs) of La Union in CY 2021



and to describe the current special waste management practices of LGUs. The respondents were further classified into the following categories:

- a. small quantity generators
- b. medium quantity generators
- c. large quantity generators

**Table 3.8. Special Waste Generators Category by Quantity**

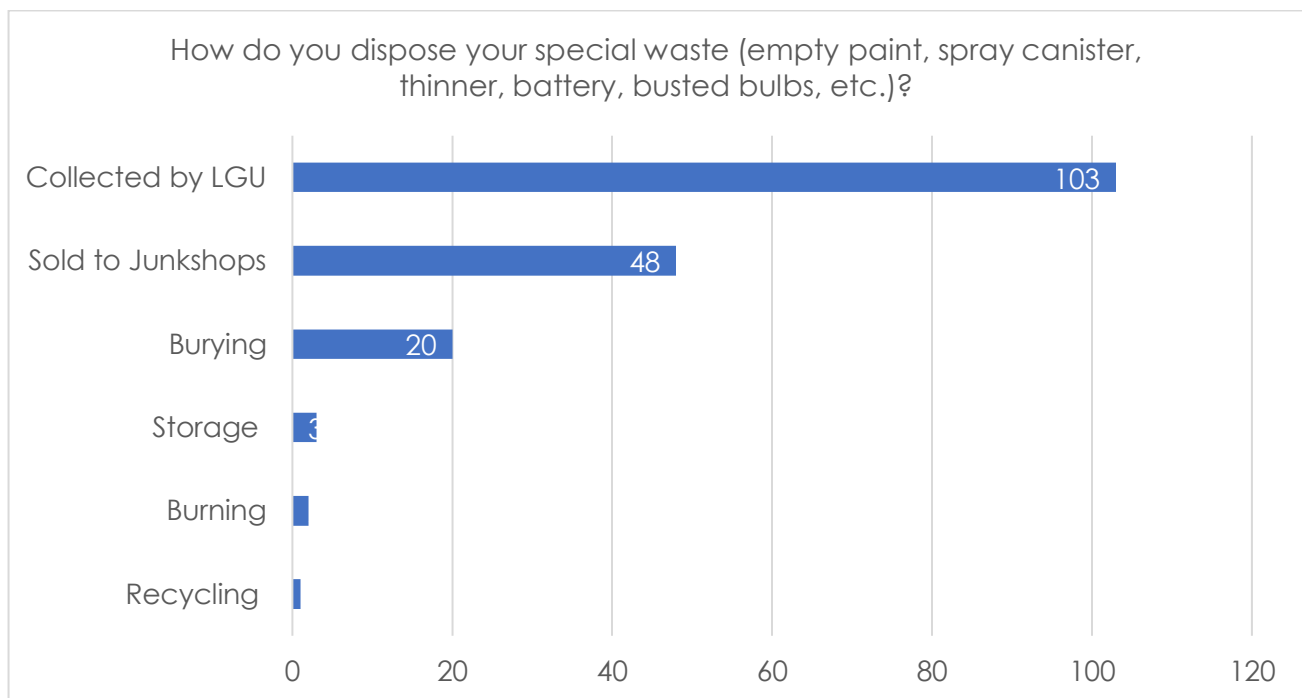
Hazardous Wastes	Small Quantity Generators	Medium Quantity Generators	Large Quantity Generators
Busted bulbs, tubes, and lamps	0-5 pieces/ year	6-10 pieces/year	more than 10 pieces / year
Containers of paints, thinners	0-5 pieces/ month	6-10 pieces/month	more than 10 pieces / month
Used pesticide containers	0-5 pieces/ week	6-10 pieces/week	more than 10 pieces / week
Household batteries	0-5 pieces/ month	6-10 pieces/ month	more than 10 pieces / month
Lead-acid batteries	0-5 pieces/ year	6-10 pieces/year	more than 10 pieces / year
Mercury and mercury-containing devices	0-5 pieces/ year	6-10 pieces/year	more than 10 pieces / year
Spray canisters	0-5 pieces/ week	6-10 pieces/week	more than 10 pieces / week
Consumer electronics	0-5 pieces/ year	6-10 pieces/year	more than 10 pieces / year
White Goods	0-5 pieces/ year	6-10 pieces/year	more than 10 pieces / year
Used cooking oils	0-2 liters/ day	21-5 liters/day	more than 5 liters/day
Used lubricants and oils	0-2 liters/ week	21-5 liters/week	more than 5 liters/week
Textiles	0-2 kg/month	21-5 kg/month	more than 5 kg/month
Scrap Metals	0-2 kg/week	21-5 kg/week	more than 5 kg/week
Tyres	0-5 kg/year	51-10 kg/year	more than 10 kg/ year
End-of-life vehicles	0-2 vehicles/year	3-5 vehicles/year	more than 5 vehicles/year
Infectious Waste	0-2 kg/ day	21-5 kg/day	more than 5 kg/day
Sharps	0-2 kg/ day	21-5 kg/day	more than 5 kg/day
Pharmaceutical Waste	0-2 kg/ day	21-5 kg/day	more than 5 kg/day
Chemical (Solid)	0-2 kg/ day	21-5 kg/day	more than 5 kg/day
Chemical (Liquid)	0-2 liters/ day	21-5 liters/day	more than 5 liters/day

Source: Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021

The general objective of the survey is to gather baseline data on the types of special wastes generated among the component local government units (LGUs) of La Union in CY 2021 and to describe the current special waste management practices of LGUs. Specifically, the study aims to classify the special waste generators based on the following categories:

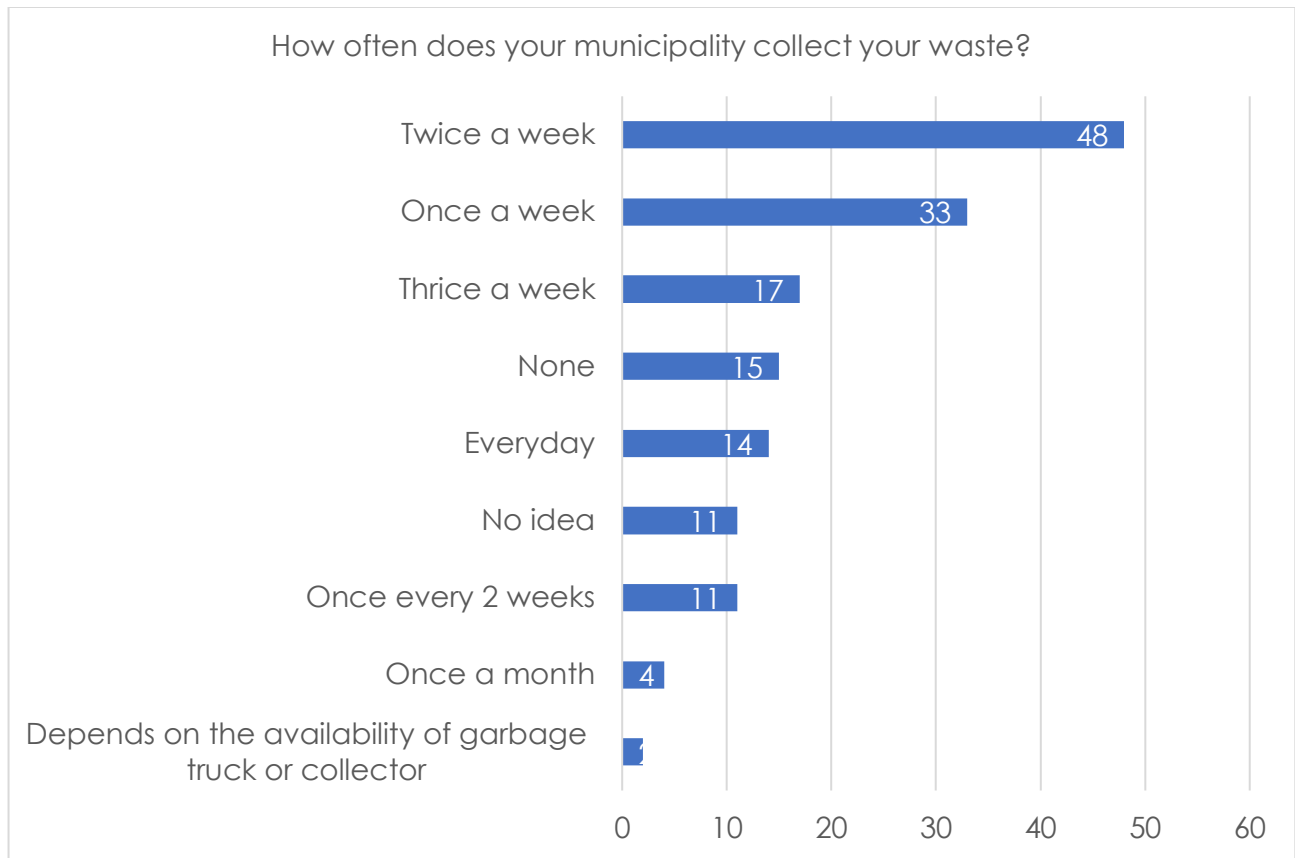
- a. small quantity generators
- b. medium quantity generators
- c. large quantity generators

Results of the study showed that most of respondents (103) noted that their special wastes were collected by their respective LGU. Some (48) answered that they sold their special wastes to junkshops and others (20) bury their wastes. Three (3) of the respondents answered that they store in a safe place their special wastes while two (2) of the respondents said that they burned their wastes.



**Figure 3.81. Disposal of Special Wastes**

Source: Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021

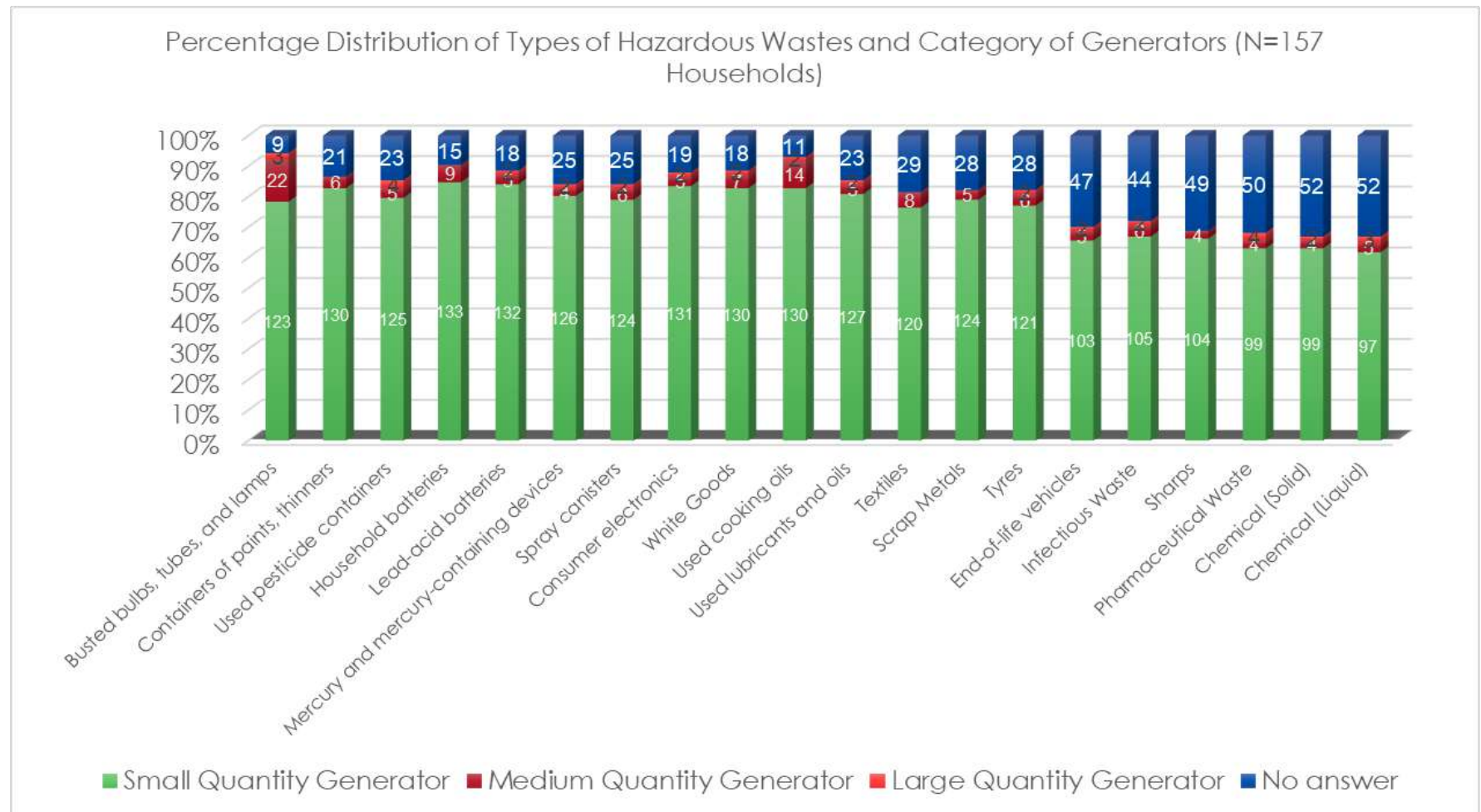


**Figure 3.8.2 Frequency of Collection of Special Wastes**

Source: Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021

When asked on the schedule of waste collection, most of the respondents (48) answered twice a week followed by once a week (33) then thrice a week (17). Daily collection of wastes was noted by 15 respondents. Fifteen (15) of the respondents answered no collection while 11 answered no idea of the schedule of waste collection in their locality.

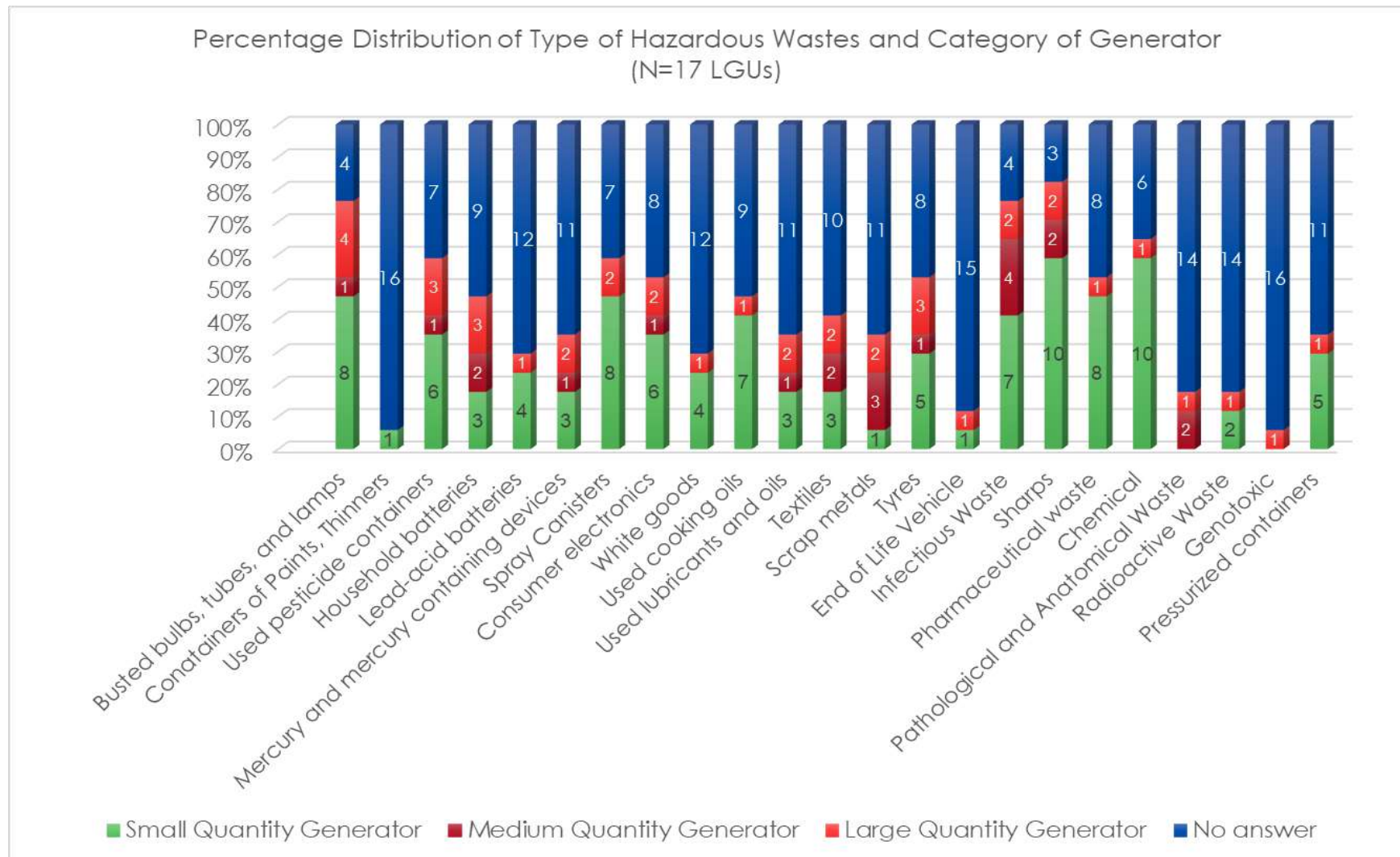
Among the 157 households, majority of the respondents belong to the category of small quantity generator in all types of special wastes identified.



**Figure 3.8.3. Percentage Distribution of Types of Hazardous Wastes and Category of Generators**

Source: Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021

Among the 17 LGUs, majority belong to the small quantity generator. However, many had no response or data indicated in the questionnaire



**Figure 3.8.4. Percentage Distribution of Type of Hazardous Wastes and Category of Generator**

Source: Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021

The results of the study is suggestive that a considerable amount of special wastes (when combined) are generated that needs to be addressed. These wastes may be improperly handled or stored without any treatment which may constitute a potential threat to the environment. Many of the LGUs do not have an actual data on special wastes generated in their locality. Improper disposal of special wastes were noted in the study. It is recommended to conduct a more comprehensive study such as Waste Analysis and Characterization Study that will include all point sources of wastes and better quantify the amount of wastes generated. It is also recommended to conduct information dissemination on the proper management of special wastes especially on households COVID-19 related healthcare wastes. It is also highly recommended for LGUs to establish the system for the management of these type of wastes and to partner with accredited Treatment, Storage, and Disposal Facility for the proper disposal.

### 3.8.1. Healthcare Wastes

With the growing volume of special wastes particularly of healthcare wastes due to the enforcement of minimum public health standards in an effort to reduce the threat cause by COVID-19, monitoring of management and disposal of special wastes such as the used disposable face masks and other PPEs were given emphasis.

The Provincial Government of La Union (PGLU) were able to secure its Hazardous Waste Generator Registration Certificate [OL-GR-R1-33-023010](#) issued on October 17, 2021. Among the 20 component LGUs, only two (2) LGUs namely LGU-Bacnotan and LGU-City of San Fernando have entered into memorandum of agreement with a private Treatment, Storage, and Disposal (TSD) Facility for the proper

management of their special wastes. The rest of the LGUs have built septic vault/ drums and storage facilities to temporarily store their special wastes. However, other septic vaults were already full and about to close.

Healthcare waste includes broad range of materials, and with the pandemic, there has been an increase in pharmaceutical waste. Healthcare waste management involves the reduction of unnecessary waste, proper separation of general waste from hazardous wastes, and the treatment of such wastes. Proper waste disposal is deemed necessary in order to protect public health and the environment. Treatment before disposal is needed to ensure avoidance of further pollution of the environment as well as the protection of public health.

According to World Health Organization (WHO), the provision of proper waste management along with safe water, sanitation and hygienic conditions is essential for preventing and for protecting human health during all infectious disease outbreaks including COVID-19 (WHO, 2020). Based on the study of United Nations Environment Programme (UNEP), some of the observed risks and challenges associated with waste management in COVID-19 pandemic: (1) increased amount of mixed waste, including infectious waste due to low levels of segregation at source; (2) lack of inventories/estimates on amount of household hazardous waste being generated; and (3) mixing of infectious waste such as gloves, masks, tissues, and gauze with other wastes (exposure to transmission) (UNEP, 2020). Since the start of the COVID-19 pandemic, healthcare waste (HCW) has increased in volume. Households contributes, nowadays in the increase of healthcare wastes as a result of the COVID-19 pandemic in addition to other wastes that are presently disposed.

In relation to this, the National Solid Waste Management Commission (NSWMC) issued Resolution No. 1364 s.2020 "Adopting the Interim Guidelines on the Management of COVID-19 related Health Care Waste.

Healthcare wastes are broadly categorized into "hazardous" and "non-hazardous" wastes. Hazardous health care wastes are further classified into sharps waste, infectious waste, pathological waste, anatomical waste, pharmaceutical waste, genotoxic waste, chemical waste, radioactive waste, and pressurized containers. The non-hazardous healthcare wastes or more commonly known as "general wastes" are the recyclables, biodegradables, and residual wastes. The survey conducted dealt only with the hazardous healthcare wastes generated by the respondents/ entities. Based on the study conducted in the Province of La Union during the wake of COVID-19 pandemic, the most dominant type of healthcare wastes generated are the non-sharp infectious wastes at 3,478.47 kg/month followed by sharps at 863.139 kg/month, chemical wastes and pathological and anatomical wastes at 214.743 kg/month and 230.53 kg/month, respectively.

**Table 3.81. Types of Hazardous Healthcare Waste Generated (2020)**

Healthcare waste	Total Quantity Generated	
Infectious Wastes (non-sharp)	3482.73	kg/month
Sharps	867.399	kg/month
Pharmaceutical waste	315.15	Kg/month
Chemical	214.743	Kg/month
Chemical	234.017	L/month
Pathological and Anatomical Waste	230.53	Kg/month
Pathological and Anatomical Waste	5.009	L/month
Radioactive Waste	84	Kg/month
Genotoxic	14.53	Kg/month
Pressurized containers	131	pcs/month

Source: Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021



In terms of healthcare wastes storage, most (35%) of the respondents answered other types of storage such as septic vaults, syringe vault, etc, followed by healthcare waste storage area/facility (26%), holding area and TSD facility(13%), material recovery facility (9%) and open pit/lagoon (4%). Notably, more than half of the LGU-owned healthcare facilities have their own healthcare waste management plans and procedures. The rest do not have a plan or no answer.

Of the 20 component LGUs of La Union, 18 LGUs are collecting and recovering special wastes. These are the municipalities of Agoo, Aringay, Bacnotan, Balaoan, Bangar, Bauang, Burgos, Caba, Luna, Naguillan, Pugo, Rosario, San Fernando City, San Gabriel, Santo Tomas, Santol, Sudipen and Tubao. There are 19 municipalities that's practicing on-site disposal of healthcare waste at septic vault. The only municipality that's not doing this practice is Bagulin. Majority of the LGUs are not in partnership with TSD facility except for the municipality of Agoo, Bacnotan, and Bangar.

Toxic and hazardous waste (as to busted bulbs, batteries and the like) and healthcare waste are being collected by LGUs and properly stored. For the healthcare waste some LGUs have already established septic vault and reinforced culvert and for LGUs without this facility, they are using a closed/sealed bins/drums for storage. For the partnership with TSD facility, only the municipality of Bangar and Agoo have already established partnership and ongoing process for Bacnotan. Due to this data LGUs are encouraged to fast track their partnership with TSD facility, as the storage they have established will not be enough to cater the enormous amount of healthcare waste produced.

The Provincial Government of La Union together with the its component district and provincial hospitals partnered with Cleanway Environmental Solutions Inc (CEMSI) for the collection of healthcare wastes. In CY 2023,

a total of 2.238 metric tons of healthcare wastes were hauled and treated provincewide by CEMSI.

### 3.8.2 Toxic and Hazardous Wastes

Pursuant to the Republic Act 6969 otherwise known as “Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990” and DENR Administrative Order No. 2013-22 “Revised Procedures and Standards for the Management of Hazardous Wastes (Revising DAO 2004-36), waste generators shall be responsible for the proper management and disposal of the hazardous waste and shall bear the costs for the proper storage, treatment and disposal of their hazardous waste.

Section 10, Chapter 2 of the Republic Act 9003 or also known as “The Ecological Solid Waste Management Act of 2000” states that the collection of special wastes shall be the responsibility of the municipality or city. Special wastes, as defined in the Implementing Rules and Regulations of the Republic Act 9003, are the household hazardous wastes such as paints, thinners, household batteries, lead-acid batteries, spray canisters, and the like, bulky wastes, consumer electronics, white goods, yard wastes (that are collected separately), batteries, oil, and tires. These wastes are usually handled separately from other residential and commercial wastes.

On the study conducted by the Provincial Government of La Union-Environment and Natural Resources Office (PG-ENRO) on the special waste management, many of the component Local Government Units (LGUs) are not yet collecting the special/hazardous wastes of the households. This is due to various reasons such as (1) lack of manpower to oversee the collection of such wastes; (2) lack of separate hauling vehicle; (3) lack of storage area for the said wastes; and, (4) lack of standard procedure on how to collect and treat the said wastes. Thus,

households have been storing the hazardous wastes generated inside their premises or mixed with other wastes. This suggests that a considerable amount of these wastes are improperly handled or stored without any treatment, which may constitute a potential threat to the environment. Poor management of hazardous wastes will destroy the environment and eventually the economy of the locality. Thus it is urgent to take further steps of proper hazardous waste management in the Province.

**Table 3.8.2 Frequency Distribution of Hazardous Wastes Generated in La Union (2020)**

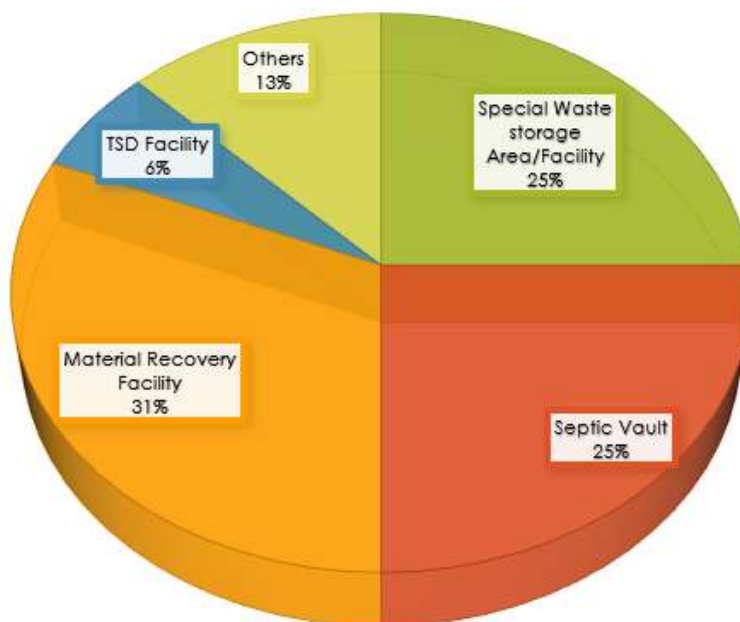
Hazardous Wastes	Total Quantity Generated	
Busted bulbs, tubes, and lamps	6391	pcs/month
Containers of Paints, Thinners	282	pcs/month
Used pesticide containers	1550	pcs/month
Household batteries	1065	pcs/month
Lead-acid batteries	334.56	pcs/month
Mercury and mercury containing devices	988	pcs/month
Spray Canisters	848	pcs/month
Consumer electronics	396.3	pcs/month
White goods	196.3	pcs/month
Used cooking oils	2383.8	L/month
Used lubricants and oils	691.798	L/month
Textiles	494.5	Kg/month
Scrap metals	592.5	Kg/month
Tyres	811.8	Kg/month
End of Life Vehicle	27	vehicles/yr

Source: Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021

Based on the survey conducted, the most dominant type of hazardous wastes generated are busted bulbs, tubes, and lamps at 6,391 pieces per month followed by used cooking oils at 2,383.80 liters per month, used pesticide containers and household batteries at 1550 pieces per month and 1065 pieces per month, respectively.

In terms of storage of hazardous wastes, most (31%) of the respondents were utilizing material recovery facility followed by special waste storage area/facility and septic vault at 25% each. Only a few of the respondents (6%) were utilizing TSD facility.

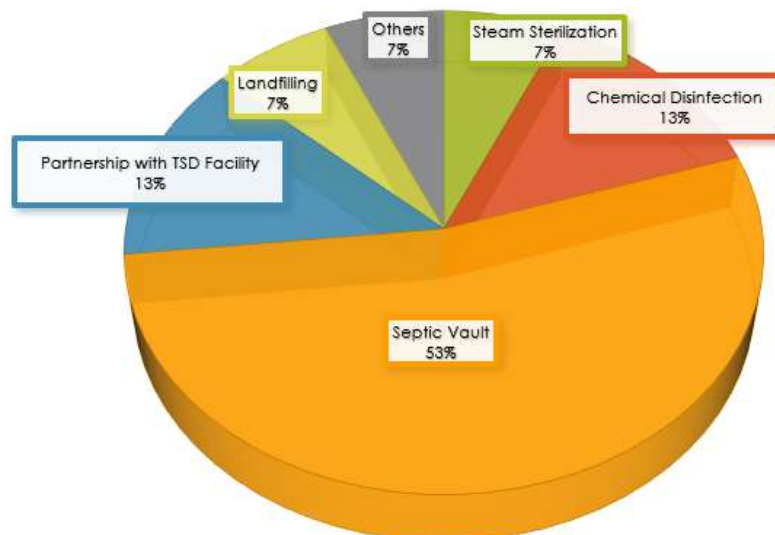
### SPECIAL WASTES STORAGE (N=15)



**Figure 3.8.21 Type of Hazardous Waste Storage Areas in LGUs**

Source: Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021

### SPECIAL WASTES TREATMENT AND DISPOSAL (N=15)



**Figure 3.8.2.2 Frequency Distribution of Hazardous Waste Treatment and Disposal Practices in LGUs**

Source: Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021

#### *E-Waste Collection Event*

A Cooperation Agreement for Electronic Waste (E-waste) Collection Event in the Province of La Union was sealed after a signing ceremony was conducted between Gov. Raphaelle Veronica “Rafy” Ortega-David, representing the Provincial Government of La Union (PGLU) and Regional Director Engr. Maria Dorica Naz-Hipe, representing the Department of Environment and Natural Resources-Environmental Management Bureau Region1 (DENR-EMB R1) held on November 7, 2022 at the Speaker Pro-Tempore Francisco I. Ortega Legislative Building, City of San Fernando, La Union.

This E-Waste Collection Event was composed of series of consultations and awareness campaigns on proper management of Wastes from Electrical and Electronic Equipment (WEEEs) initiated by the component Local Government Units of La Union, PGLU, and DENR-EMB Region 1. Various barangays in the

province designated a temporary storage area where the constituents could drop-off their e-wastes. The PGLU also designated three Central Collection Sites in La Union located in Balaoan District Hospital Materials Recovery Facility, City of San Fernando Sanitary Landfill Facility, and Damortis Provincial Nursery.

This provincewide E-Waste Collection Event is in support to the Implementation of Polychlorinated Biphenyls (PCB) Management Programs for Electric Cooperatives and Safe E-Wastes Management in the Philippines which is a project of the Global Environment Facility (GEF). This is being implemented by the United Nations Industrial Development Organization (UNIDO) in collaboration with DENR-EMB, National Electrification Agency and the Natural Resources Development Corporation (NRDC). The overall objective of the project is the protection of public health and environment through a safe and ecological management of the country's stockpiles of PCBs containing equipment and Polybrominated diphenyl ethers (PBDEs) in e-waste.

Consultation meeting with DENR-EMB Region 1 was conducted on September 7, 2022 in preparation for the E-Waste Collection Event to be held in La Union. On October 19, 2022, the concept of E-Waste Collection Event was presented during the Liga ng mga Barangay La Union Chapter regular monthly meeting at the Liga ng mga Barangay Hall, City of San Fernando, La Union.

In CY 2022, the E-Waste Collection Event in the Province which run from October 24, 2022 to November 3, 2022 recorded an approximately 5.94 tons (5,940 kilograms) of e-wastes or electronic wastes collected. In CY 2023, a total of 5.978 tons were collected. The said e-wastes were collected and hauled by UNIDO's partner Hazardous Waste Transporter, IRI,. IRI collected the said e-wastes from the three designated central collection sites in the Province of La Union (City of San Fernando Landfill, Balaoan District Hospital MRF and

Damortis Provincial Nursery) and transported those to the project's Treatment, Storage and Disposal (TSD) Facility for treatment.

In CY 2022, 14 local government units in the Province of La Union actively participated in the E-Waste Collection Event, namely City of San Fernando, Aringay, Bacnotan, Bagulin, Naguilian, San Juan, San Gabriel, Bauang, Pugo, Agoo, Bangar, Sudipen, Balaoan, and Tubao. PG-ENRO personnel assisted in the hauling of e-waste. In CY 2023, 16 LGUs and one (1) NGA participated in the event.

**Table 3.8.3 Quantities of Healthcare Wastes and Toxic and Hazardous Wastes Disposed of by City/Municipality**

LGU	Healthcare Wastes	Toxic and Hazardous Wastes	Total	Treatment/Disposal
<b>DISTRICT I</b>				
Bangar	4.503	30.199	34.702	Septic Vault
Luna	0.9909	1138.14	1139.131	Septic Vault
Sudipen	1.339	95.061	96.4	Septic Vault
Balaoan	0	9.152	9.152	Septic Vault
Santol	0	5.21	5.21	Septic Vault
Bacnotan	24.993	487.57	512.563	Collected by TSD Facility
San Gabriel	0.09	50.5671	50.6571	Septic Vault
San Juan	0.359	393.568	393.927	Septic Vault
City of San Fernando	0	1646.23	1646.23	Collected by TSD Facility / Septic Vault
<b>DISTRICT II</b>				
Bagulin	0.000	220.250	220.250	Septic Vault
Bauang	5.4160	3402.5600	3407.976	Septic Vault
Naguilian	21.095	506.502	527.597	Septic Vault
Burgos	0.75536595	0.4025	1.158	Septic Vault
Caba	8.59606152	339.149	347.745	Septic Vault
Aringay	25.724	354.58	380.304	Septic Vault
Agoo	1.334	1339.25	1340.584	Partnership with LLMC
Tubao	5.992	70.237	76.229	Septic Vault
Pugo	0.000	33.485	33.485	Septic Vault
Santo Tomas	0.000	21.338	21.338	Septic Vault
Rosario	34.956136	815.10295	850.059	Septic Vault

Source: Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021

### 3.8.3. Marine Litter

The National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML) is the national marine litter framework plan with an overarching goal of "Zero Waste to Philippine Waters by 2040." The National Solid Waste Management Commission adopted the NPOA-ML on May 12, 2021, through Resolution No. 1441, Series of 2021. It was then adopted by the Department of Environment and Natural Resources on August 5, 2021, through DENR Memorandum Circular No. 2021-10. DMC 2021-10 aims for the NPOA-ML to provide guidance to enhance the current efforts of the country in resource and waste management and to bring an additional perspective to marine litter issues and the control of additional leakage of waste into bodies of water.

Aligned with the #KalikasanNaman Campaign of the Provincial Government of La Union (PGLU) focusing on strengthening solid waste management initiatives in tourism areas in the Province as well as to address concerns of marine litter in the Province, plastic bottle recycling sculptures or eco-bins are installed in selected tourist spots to enable the proper segregation of wastes and prevention of littering in tourism areas. Garbage rollers were also purchased to remove minute marine litters/debris. Several coastal clean-up activities along the shore and underwater tagged as "scubasurero" activities are also conducted regularly in the Province. Shown below are the data on the collected trash recorded during various coastal clean-up drives.

The most commonly found wastes during clean-up drives are Styrofoam fragments, used and abandoned fishnets, waste balloons,



flaglets/buntings/confetti, cigarette butts, food wrappers, straws/stirrers, forks, knives, spoons (plastics), beverage bottle (plastics) cups & plates (plastics), diapers, other plastics/ foam packaging, disposable face masks, other plastics bottles (oil/soy/ vinegar/, milk, bleach, detergent, shampoo, etc.)

**Table 3.8.3.1 Data Information on International Coastal Clean Up ( CY 2021-2023)**

International Coastal Clean-Up	2021	2022	2023
Waste Collected (kg)	154	1,363.70	212
Nb. of Participants	137	2,095	300
Location	Sta. Tomas	Province-wide	San Juan

Source: PG-ENRO Clean-up Activities, 2023

**Table 3.8.3.2 Data Information on National Zero Waste Month (CY 2019-2023)**

National Zero Waste Month	2019	2020	2021	2022	2023
Waste Collected (kg)	3,000	1,195	175	2,179.25	13, 518.89
Nb. of Participants	700	832	150	1,281	
Location	City of San Fernando – San Juan	Bauang	San Juan	Province-wide	Province-wide

Source: PG-ENRO Clean-up Activities, 2023

## 3.8.4. Disaster Wastes

With the unprecedented impacts of climate change such as the occurrence of more frequent and more extreme disaster events, hence, more disaster wastes are expected to be generated and handled. Currently, the Province of La Union has no existing data on disaster waste characterization, profile, and projections and Standard Operating Procedure on post disaster waste management system. However, the presence of 20 sanitary landfill facilities equipped with various heavy equipment such as backhoe loader, excavators, and bulldozers and dump trucks or hauling vehicles are of great help and useful in time of disaster and managing disaster wastes. Processing facilities or alternative technologies such as bio-shredders, plastic

shredders, and glass pulverizers are also kept within the facility. These equipment can be then used to process the different types of disaster wastes. For special wastes (i.e., toxic and hazardous wastes, healthcare wastes) and other bulky wastes, a TSD Facility shall be partnered for the proper treatment and disposal of these wastes. Septic vaults are used to store healthcare wastes. The Central Materials Recovery Facility in each Local Government Units of the Province shall be utilized as temporary storage sites (TSS). These facilities are within the Sanitary Landfill Facility, managed by the LGUs. In case the Central Materials Recovery Facilities are not available, the rehabilitated portion of the landfill or the unutilized area of the sanitary landfill facility may serve as the temporary storage site.

### **3.9. Markets for Recyclables**

Majority of LGUs are participating in municipal trade fair/town fiestas or other venue to showcase their eco-products.

There are 76 registered junkshops in the province of La Union. The big junkshops are located in City of San Fernando, Bacnotan and Agoo, where there are more commercial and industrial establishments. These big junkshops have wider buying areas covered, even extending beyond their municipalities to neighboring municipalities or provinces. There are also illegal or unregistered junkshops in the different LGUs or roving buyers from other localities.

At present, there are no duly registered industry in the Province that utilize or have the potential to use recycled materials.

Table 3.9. Number of Registered Junkshops

Municipality/ City	Number of Registered Junkshops
Agoo	3 junkshops and 5 markets for biodegradables
Aringay	4 junkshops and 1 company that processes biodegradable
Bacnotan	6 junkshops
Bagulin	None but with mobile buyers
Balaoan	5 junkshops
Bangar	6 junkshops
Bauang	16 junkshops
Burgos	1 junkshop
Caba	2 junkshops
Luna	1 junkshop
Naguilian	2 junkshops
Pugo	2 junkshops
Rosario	3 junkshops
City of San Fernando	16 junkshops
San Gabriel	1 junkshop
San Juan	2 junkshops
Santo Tomas	2 junkshops
Santol	None
Sudipen	2 junkshops
Tubao	2 junkshops

Source: Excerpted from the 10-Year Solid Waste Management Plans of component LGUs

### 3.10. Information, Education, and Communication (IEC)

The Provincial Government of La Union (PGLU) through the PG-ENRO conducted various information, education, communication (IEC) in different platforms. The PG-ENRO has released its digital animated IEC. The IEC was created in three languages – Ilocano, Tagalog, and English. The IEC primarily discussed the RA 9003. The IEC material was then distributed to all component LGUs to be played in the electronic billboards and during IEC campaign or seminars/trainings in their localities as well as during staff development program of PGLU. At this digital age, the PG-ENRO promotes various solid

waste management activities and programs through the the PGLU social media accounts.



**Figure 3.10.1. Various Forms of SWMIEC Materials Developed**  
Source: Solid Waste Management Annual Report CY 2019

Other forms of IEC is through print publication. The *Baro a Timek iti Kapitolio*, the Official Publication of the Province of La Union is also utilized for publication of the various solid waste management programs and activities of PG-ENRO. Publication in local newspapers (i.e., The Weekly Banat and The Amianan Tribune) were also used in the promotion and information dissemination of solid waste management activities of PG-ENRO .

IEC is mostly done during trainings and orientation/consultation meetings of target sectors, such as the component LGUs and barangays, private sectors, and general public. Information on solid

waste management has also been disseminated through public consultations, or as a topic in seminars. These are done mostly through lectures, audio-visual presentations, and face-to-face communication. Other IEC methods that have been done in the LGUs are the posting of flyers, posters or the distribution of copies of the local Circular on SWM, hand-outs, giving out of training materials, installation of signages, and IEC tokens (i.e., bamboo tumblers, IEC T-shirts, bayong).

“Sulong Bayong” bags, bamboo tumblers, and reusable cutlery were distributed as one way of addressing high dependence to single-use plastics and wasteful consumption from shifting away the so-called “throw away culture” to the use of these reusable items. Various campaigns such as the “Bring Your Own Tumbler” and “Sulong Bayong” Campaigns were initiated by PG-ENRO to promote environmental stewardship. “Basuramazing,” the upcycling campaign of PG-ENRO was also initiated showcasing the innovative handicrafts and inventions produced from solid waste materials through the “Basuramazing Exhibit” conducted during La Union Founding Anniversary.



**Figure 3.10.2 PG-ENRO'S SWM Advocacy Campaigns**

Source: PGLU Presentation during the 7<sup>th</sup> Regional Ecological Solid Waste Management Summit

Shown below are the communication, education, and public awareness activities conducted in relation to waste management for the past five (5) years.

**Table 3.10.1 Solid Waste Management Communication, Education, and Public Awareness Activities**

Date	Solid Waste Management Communication, Education, and Public Awareness Activities
<b>CY 2018</b>	
March 7-9, 2018	Orientation Training of Environmental Monitoring Officers on the Provisions of RA 9003 and other Environmental Laws
March 22, 2018	Waste Management Forum "Building the Road to Zero Waste"
May 23-25, 2018	Workshop on the Updating and Finalization of LGUs 10-Year Solid Waste Management Plan (SWMP)
November 28-29, 2018	Deliberation of the 10-Year Solid Waste Management Plan of the Province of La Union
April 17-20, 2018	Joint Monitoring of Solid Waste Management
<b>CY 2019</b>	
April 12, 2019	Site Identification for the Installation of Signage Promoting Proper Disposal of Wastes
June 7, 2019	Waste Management Forum
April 24-25, 2019	Technical Assistance During the Deliberation of the 10-Year Solid Waste Management Plan of the Municipality of Caba
June 24, 2019	Technical Assistance in the Finalization of the 10-Year Solid Waste Management Plan of Bangar, La Union
June 27, 2019	Technical Assistance in the Finalization of the 10-Year Solid Waste Management Plan of Bauang, La Union
August 1& August 29, 2019	Technical Assistance in the Finalization of the 10-Year Solid Waste Management Plan of Bagulin and San Juan, La Union
July 15, 2019	Technical Assistance in the Finalization of the 10-Year Solid Waste Management Plan of Santol, La Union
September 5, 2019	Assistance to LGU-Bangar during the Deliberation of their 10-Year Solid Waste Management Plan
September 5, 2019	Assistance to LGU-San Juan during the Deliberation of their 10-Year Solid Waste Management Plan
August 22, 2019	Assistance to LGU-Aringay during the Deliberation of their 10-Year Solid Waste Management Plan
August 23, 2019	Assistance to LGU-Balaoan during the Deliberation of their 10-Year Solid Waste Management Plan
September 5, 2019	Assistance to LGU-Tubao during the Deliberation of their 10-Year Solid Waste Management Plan
September 5, 2019	Assistance to LGU-Pugo during the Deliberation of their 10-Year Solid Waste Management Plan
September 5, 2019	Assistance to LGU-Burgos during the Deliberation of their 10-Year Solid Waste Management Plan
September 5, 2019	Assistance to LGU-San Gabriel during the Deliberation of their 10-Year Solid Waste



	Management Plan
September 5, 2019	Assistance to LGU-Sto. Tomas during the Deliberation of their 10-Year Solid Waste Management Plan
January 26, 2019	National Zero Waste Month
March 30, 2019	Earth Hour Celebration
September 21, 2019	International Coastal Clean Up
September 19, 2019	PSWMBTWG Meeting
October 30, 2019	Distribution of SWMFlyers: IP Development Caravan in Naguilian
November 12, 2019	Distribution of SWMFlyers: IP Development Caravan in San Juan
December 9, 2019	Environmental Awareness Campaign among Barangay Officials of Pugo, La Union
October 29, 2019	Environmental Awareness Campaign among Barangay Officials of Santol, La Union
October 15-16, 2019	Youth Leadership Training
October 23-25, 2019	Division Science Camp KKK: Kabataang Kumikilos para sa Kalikasan
June 25, 2019	4 <sup>th</sup> Region 1 Ecological Solid Waste Management Summit and Recognition of LGUs, Industries and NGOs Best Practices and Best Available Alternative Technologies at the Marand Resort and Spa, Bauang, La Union
February 12-15, 2019	Local Planning and Development 2019-A Seminar-Forum on Water Supply, Sewerage, Solid Waste, Air and Water Quality Management Towards Sustainable Development at La Carmela De Boracay Resort Hotel, Boracay, Malay, Aklan
July 30, 2019	Local Sustainable Sanitation Plan Finalization Workshop and Conference on Health, and Integrated Sanitation Approach at the Department of Health Regional Office 1 Conference Room, City of San Fernando, La Union
June 7, 2019	Forum on Waste Management Technologies at the People's Hall, City of San Fernando, La Union
November 19-20, 2019	SWAPCon 2019: Harnessing Energy from Water for Sustainable Development at the Lopez Hall, Bureau of Soils and Water Management, Department of Agriculture, Visayas Avenue corner Elliptical Road, Diliman, Quezon City
November 21-22, 2019	Training on Design, Management and Operations of a Sanitary Landfill at the 3/F Philippine Medical Depot, NBS Building, Quezon City
December 10-13, 2019	4 <sup>th</sup> Philippine Solid and Hazardous Waste Management Conference in conjunction with the 1 <sup>st</sup> International Conference on Circular Economy-based Waste Management at the Aquino Center and Museum Convention Hall, Tarlac City
<b>CY 2020</b>	
January 25, 2020	National Zero Waste Month dubbed as "Pagna Pagna para iti Basura" in Bauang
March 5, 2020	Provincial Solid Waste Management Board Meeting
November 26, 2020	Provincial Solid Waste Management Board Meeting
September 14 - October 29, 2020	Integrated Waste Management Monitoring Activity
December 21, 2020	Inauguration of Pugo Sanitary Landfill
June 9, 2020	Consultation meeting with LGU-San Juan regarding establishment of SLF
July 17, 2020	Consultation meeting with LGU-Bagulin regarding establishment of SLF
July 15, 2020	Consultation meeting with LGU-Burgos regarding establishment of SLF
July 8, 2020	Consultation meeting with LGU-Caba regarding establishment of SLF
February 28, 2020	Consultation meeting with LGU-Bacnotan regarding establishment of STP
August 24, 2020	

October 15, 2020	Public consultation on Environmental Sanitation Ordinance and Establishment of Septage Treatment Facility
October 24, 2020	Public consultation meetings regarding on the establishment of sanitary landfill facility in Bagulin
October 29, 2020	Public consultation meetings regarding on the establishment of sanitary landfill facility in Burgos
December 10, 2020.	LGU-Bagulin conducted a seminar on proper waste management of piggeries among swine raisers of Brgy. Suyo
March 5, 2020	Inauguration of Systematic Septage Treatment Plant (SSTP), the first and only commercial septage treatment plant in La Union
September 16, 2020	Site visit of the newly-opened commercial septage treatment plant
March 1, 2020	Palit Basura Program during the "Aldawiti Kaprobinsiyaan
March 2020	Project ECHD in Lingsat
August 24, 2020	Project ECHD in Department of Justice - Parole and Probation Office
<b>CY 2021</b>	
January 22, 2021	"Pagna Pagna para iti Basura" in San Juan
January 30, 2021	#KALIKASANNAMAN Agoo Eco-park Clean-Up Drive
November 20, 2021	Aftermath of Typhoon Maring Baroro River Clean-Up Drive in San Juan
January 27, 2021	Waste management awareness campaign on COVID-19 Household Healthcare Wastes
June 22, 2021	5 <sup>th</sup> Ecological Solid Waste Management Summit
August 24 and 26, 2021	Waste Analysis and Characterization Study (WACS) Training
December 2-3, 2021	5th Philippine Solid & Hazardous Waste Management Conference in conjunction with the 2nd International Conference on Circular Economy-based Waste Management
October 27-29, 2021	5 <sup>th</sup> Regional Area-Based Standards Network (ABSNET) Convention cum General Assembly
January 2021	Capability Building on the Management of COVID-19 Related Healthcare Waste for Local Government Units
September 17, 2021	Webinar on Resilient Ecosystems for Sustainable Development in a Changing Climate
November 25-26, 2021	Solid Waste Management Association Of The Philippines (SWAPP) Conference 2021
August 2021 to November 2021	Joint monitoring of implementation of 10-year solid waste management plans in La Union
October 18-22, November 2, 2021	Solid Waste & Wastewater Management Monitoring in District & Provincial Hospitals CY 2021
February 3, 2021	Consultation meeting with LGU-Caba regarding on the assistance on the establishment of sanitary landfill facility
June 25, 2021	Inauguration and turn-over ceremony of the sanitary landfill facility of LGU-Sto. Tomas at Brgy. Namonitan, Sto. Tomas, La Union
April 23, 2021	Consultation meetings among concerned Local Government Units (LGUs) via videoconferencing San Juan, Burgos, Bagulin, Caba
June 28, 2021	Time with the Governor Follow Up Consultation with LGU Santol
July 1, 2021	Time with the Governor Follow Up Consultation with LGU Agoo
August 31, 2021	Time with the Governor Follow Up Consultation with LGU Naguilian
June 30, 2021	Time with the Governor Follow Up Consultation with LGU Balaoan
September 1, 2021	Time with the Governor Follow Up Consultation with LGU Sto. Tomas



September 23, 2021	Time with the Governor Follow Up Consultation with LGU Pugo
October 5, 2021	Time with the Governor Follow Up Consultation with LGU Bacnotan
October 5, 2021	Time with the Governor Follow Up Consultation with LGU San Juan
November 15, 2021	Time with the Governor Follow Up Consultation with LGU Naguilian
November 16, 2021	Time with the Governor Follow Up Consultation with LGU San Gabriel
December 13, 2021	Consultation with LGU Bagulin regarding Establishment of Sanitary Landfill
March 29, 2021	PSWMB-TWG meeting via videoconferencing
April 20, 2021	PSWMB TWG Meeting Special Meeting
June 23, 2021	2 <sup>nd</sup> Quarter PSWMB meeting
September 21, 2021	Technical Working Group of the Provincial Solid Waste Management Board (PSWMB)
December 1, 2021	4 <sup>th</sup> Quarter PSWMB meeting
CY 2022	
January 7, 2022	Pagna Pagna para iti Basura in celebration of the National Zero Waste Month
January-March, 2023	Basuramazing Challenge
March 18, 2023	Waste Management Awareness Campaign: Total Solid Waste Management Solutions & Philippines' National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)
February 15, 2022	Project ECHD activity at Brgy. Ili Sur, San Juan on February 15, 2022
February 17, 2022	Project ECHD activity at Brgy. Poro, City of San Fernando on
February 14, 2022	Project ECHD activity at Caba Central School on February 14, 2022
July 5, 2022	Coordination regarding Ecobricking Exchange Activity
July 11, 2022	Dallangayan Oeste Ecobricking
July 12, 2022	Poro Ecobricking
July 18, 2022	Agoo and Caba Ecobricking
August 3, 2022	Cadaclan & Catbangan Ecobricking
October 3, 2022	Coordination
October 6, 2022	Balaoan Ecobricking
October 6, 2022	Luna Ecobricking
October 7, 2022	San Juan Ecobricking
October 11, 2022	ODH Parole, SFLU brgys
October 12, 2022	Lingsat Ecobricking
January 12, 2022	Joint Committee hearing of the Environment, Energy and Human Ecology and Security and SP Committee on Laws, Rules and Privileges on the Draft Single-Use Plastic Ban Ordinance
March 29, 2022	1 <sup>st</sup> Quarter Provincial Solid Waste Management Board (PSWMB)
June 23, 2022	2 <sup>nd</sup> PSWMB Quarter meeting
September 22, 2022	3 <sup>rd</sup> PSWMB Meeting
December 7, 2022	4 <sup>th</sup> Quarter meeting
August 12, 2022	Committee Meeting on the draft ordinance on Single-Use Plastic Ban Ordinance
May 2022 to June 2022	Joint monitoring of implementation of 10-year solid waste management plans in La Union
September 27, 2022	Consultation meeting with Board Member Pablo Ortega regarding the Resolution No. 1085-2022 primarily regarding the recommendations to PG-ENRO in relation to the Single-use Plastic Ban Ordinance.

September 12-14, 2022	Solid Waste & Wastewater Management Monitoring in District & Provincial Hospitals CY 2022
April 27, 2022	Joint Inspection of Waste Management in Establishments with the Sangguniang Panlalawigan of the Provincial Government of La Union
July 19, 2022	DENR-EMB Region 1 Spot Inspection of PGLUs Environmental Compliance
September 28, 2022	Investigation of Alleged Disposal of Hazardous Wastes in Barangay Bacsil, City of San Fernando
September 9, 2022	Investigation of Alleged Improper Wastewater Disposal in Barangay Urbiztondo
September 28, 2022	Investigation and Dialogue on the alleged mismanagement of wastewater in Brgy. Urbiztondo, San Juan, La Union
October 3, 2022	
September 7, 2022	Consultation meeting with DENR-EMB Region 1 was conducted on September 7, 2022 in preparation for the E-Waste Collection Event to be held in La Union
October 19, 2022	E-Waste Collection Event Presentation during the Liga ng mga Barangay La Union Chapter regular monthly meeting at the Liga ng mga Barangay Hall, City of San Fernando, La Union
October 24-November 3, 2022	E-Waste Collection Event
January 20, 2022	Consultation with LGU-San Juan and DENR-PENRO La Union regarding the Proposed Site of LGU-San Juan Sanitary Landfill Facility on January 20, 2022 at the Municipal Hall
February 22, 2022	Consultation and Site Inspection with LGU-Bagulin regarding the Proposed Site of LGU-Bagulin Sanitary Landfill Facility on February 22, 2022 at the Municipal Hall
September 19, 2022	Follow-up Consultation with LGU-Bagulin regarding the Proposed Site of LGU-Bagulin Sanitary Landfill Facility on September 19, 2022 at the Municipal Hall
February 21, 2022	Consultation and Site Inspection with LGU-Tubao regarding the plans on the establishment of Sanitary Landfill Facility on February 21, 2022
September 19, 2022	Consultation with LGU-Tubao regarding the plans on the establishment of Sanitary Landfill Facility on September 19, 2022
July 19, 2022	Consultation and Site inspection with LGU-Santol regarding the Proposed Site of LGU-Santol Sanitary Landfill Facility on July 19, 2022 at the Municipal Hall
September 15, 2022	Consultation and Site Inspection with LGU-Burgos regarding the Proposed Site of LGU-Burgos Sanitary Landfill Facility on September 15, 2022 at the Municipal Hall
February 9, 2022	Consultation meetings in Pugo re WWTF
May 12, 2022	Consultation meetings in Bacnotan re WWTF
November 25, 2022	Public awareness on the establishment of septage treatment plant (STP) in San Juan, La Union
February 16, 2022, March 1, 2022, and June 17, 2022	Consultation regarding the Collaboration project between DENR-EMB Region 1 and PGLU on the proposed establishment of a pre-treatment and storage facility for healthcare/medical wastes started in the first quarter of CY 2022
	Clean Coasts Project: Poster Making Contests
February 10-11, 2022	Training of Trainors
	Clean Coasts Project: Search for "Nadalu a baybay, Nasalun-at nga ili"
November 23-25, 2022	Study Tour: Municipality of Tagudin in Ilocos Sur and Bani and Alaminos City in Pangasinan
July 22, 2022 & October 24-27, 2022	Training on the Use of Bio-shredder and Dual Drum Composter

March 17, 2022	Consultation meeting with HOLCIM regarding the establishment of eco-MRF on March 17, 2022 at HOLCIM conference room
March 16, 2022	Coordination meeting with LGU-San Gabriel re the conduct of WACS
November 22, 2022	Orientation with WACS cooperators of LGU-San Gabriel
December 3-5, 2022	Actual waste analysis and characterization activity in San Gabriel
January 26, 2022	6 <sup>th</sup> Ecological Solid Waste Management Summit with the theme "Fast-tracking the Total Solid Waste Management Solution for a Sustainable-Driven Philippines" on January 26, 2022 in Kabaleyan, San Carlos City and via video-conferencing
March 24-25, 2022	Regional Launching of PINAS: The Basura Buster on March 24-25, 2022 at The Monarch Hotel, Calasiao, Pangasinan
July 25-29, 2022	Development Academy of the Philippines (DAP) facilitated the conduct of Disaster Waste Management Training to LGUs
August 25-26, 2022	Pollution Control Officers' Training
September 8, 2022	Reactivation of Regional Ecology Center
November 17-18, 2022	Solid Waste Management Association of the Philippines (SWAPP)
December 1-2, 2022	6 <sup>th</sup> Philippine Solid and Hazardous Waste Management Conference in conjunction with the 3 <sup>rd</sup> International Conference on Circular Economy Based Waste Management (Waste No More Conference) at the Philippine Trade Training Center (PTTC) in Pasay City
November 28, 2022	Outdoor Zone Contest: "Nakaayayo nga Aglawlawti Pagadalan
November 18, 2022	Trashy Tale Trashion Show
August 13, 2022	Lupon ng mga Indibidwal na Nangangalaga ng Kalikasan (LINK) Solid Waste Management Awareness Campaign
October 14, 2022	Project Dedication Ceremony of JFGR Zero Waste Materials Recovery Facility
<b>CY 2023</b>	
January 2023	National Zero Waste Month Celebration
January 30, 2023	Waste Management Awareness Campaign: RA 11898 or the Extended Producer Responsibility Act of 2022
January 24, 2023	Inauguration of Hazardous Waste Storage Facility at Bacnotan District Hospital
May 25, 2023	Inauguration Ceremony of the 1st Sanitary Landfill in the Philippines under Gratuitous Special Use Permit in San Juan, La Union
May 25, 2023	Groundbreaking Ceremony of the soon-to-rise Septage Treatment Plant in San Juan, La Union
May 26, 2023	Study Tour at Cleanway Environmental Management Solutions, Inc
July 4, 2023	WACS Consultation Meeting with LGU-Bauang
July 11, 2023	WACS Consultation Meeting with LGU-Pugo WACS Consultation Meeting with LGU-Naguilian
July 6, 2023	WACS Consultation Meeting with LGU-Caba
July 7, 2023	WACS Consultation Meeting with LGU-Sudipen
July 5, 2023	WACS Consultation Meeting with LGU- San Juan WACS Consultation Meeting with LGU-Bacnotan
July 20, 2023	WACS Consultation Meeting with LGU-Luna WACS Consultation Meeting with LGU-Santol
July 19, 2023	WACS Consultation Meeting with LGU-Tubao
July 31, 2023	WACS Consultation Meeting with LGU-Sto. Tomas

August 10, 2023	WACS Consultation Meeting with LGU-Rosario
September 5, 2023	WACS Orientation with Cooperators at LGU-Pugo
August 10, 2023	WACS Orientation with Cooperators at LGU-Caba
August 29, 2023	WACS Orientation with Cooperators at LGU-Sudipen
July 27, 2023	WACS Orientation with Cooperators at LGU-San Juan
September 7, 2023	WACS Orientation with Cooperators at LGU-Naguilian
August 18, 2023	WACS Orientation with Cooperators at LGU-Bacnotan
September 21, 2023	WACS Orientation with Cooperators at LGU-Santol
September 14, 2023	WACS Orientation with Cooperators at LGU-Tubao
October 2, 2023	WACS Orientation with Cooperators at LGU-Sto. Tomas
October 2, 2023	WACS Orientation with Cooperators at LGU-Rosario
September 8-10, 2023	Actual Waste Characterization Activity at LGU-Pugo
August 14-16, 2023	Actual Waste Characterization Activity at LGU-Caba
September 1-3, 2023	Actual Waste Characterization Activity at LGU-Sudipen
August 4-7, 2023	Actual Waste Characterization Activity at LGU-San Juan
September 11-14, 2023	Actual Waste Characterization Activity at LGU-Naguilian
August 24-27, 2023	Actual Waste Characterization Activity at LGU-Bacnotan
September 25-27, 2023	Actual Waste Characterization Activity at LGU-Santol
September 17-19, 2023	Actual Waste Characterization Activity at LGU-Tubao
October 13-15, 2023	Actual Waste Characterization Activity at LGU-Sto. Tomas
October 9-12, 2023	Actual Waste Characterization Activity at LGU-Rosario

Source: PG-ENRO, 2023

The 2023 Mutia ti La Union had been one of the successful and wide-ranging IEC campaign on environmental protection targeting large audience as this year's theme focused on #Kalikasan Naman campaign wherein candidates showcased and adjudged with their environmental advocacies.

## Advocacy Campaigns

### Mutia ti La Union shifts focus on #KalikasanNaman



**Cleaner. Better. Safer.**

Let's be the change we want to see in the environment.

"Winning Mutia Ti La Union 2023 has been an honor for me and a privilege to share my purpose and promote my advocacy 'GreenPeaceMovementAng Pagbabag&O Parasa Kalikasan' with the help of the leaders of La Union, we aim to reach wider organizations and volunteers in raising awareness to our Kaprobinisaaan to preserve the beauty of La Union while boosting agriculture and tourism," shared Mutia ti La Union 2023 Kristine Billy Mateo Tabaday of Sudipen, La Union

Figure 3.10.3. Mutia ti La Union shifts focus on "Kalikasan Naman" Campaign

Source: PGLU Presentation during the 7<sup>th</sup> Regional Ecological Solid Waste Management Summit

Table 3.10.2 Solid Waste Management Communication, Education, and Public Awareness Activities Conducted by City/ Municipality

LGUs	IECs Conducted
Agoo	IECs conducted during barangay assembly
Aringay	IECs conducted during barangay assembly
Bacnotan	DUR-AS IEC Campaign Learning Station
Bagulin	IEC during General Assembly (Barangay and School)
Balaoan	IECs conducted during barangay assembly
Bangar	Regular Back to Basics Program (IEC) BSWMC, Brgy. Official, Municipal Employees, Brgys.
Bauang	Weekly monitoring/ inspection IEC materials, Issuance of Citation Tickets
Burgos	IEC and Lectures
Caba	IECs conducted during barangay assembly
Luna	Distribution of IEC materials Schools, Offices, Businesses, Establishments, Households
Naguillan	Business - Joint Inspection (citation ticket), Schools - IEC (SWM), Plastic Ordinance, IEC materials
Pugo	IECs conducted during barangay assembly
Rosario	IECs conducted during barangay assembly
San Fernando City	IEC on Vendors, Schools (Stopped during pandemic)
San Gabriel	IEC every Barangay Assembly
San Juan	IECs conducted during barangay assembly
Santo Tomas	IECs conducted during barangay assembly
Santol	No Segregation, No Collection Policy
Sudipen	IECs conducted during barangay assembly
Tubao	IEC Barangay Assembly, Seminar Barangay Officials

Source: Excerpted from the 10-Year Solid Waste Management Plans of component LGUs



### 3.11. Costs and Revenues

The annual cost and investment cost for Solid Waste Management for the past five years is shown below.

Table 3.11.1. Investment Cost and Annual Cost on Solid Waste Management (CY 2019-2023)

Integrated Waste Management Program	Projected Cost (Php) /Time Frame					Total Cost (Php)
	2019	2020	2021	2022	2023	
Investment Cost	81,000,000.00	30,200,000.00	152,580,842.40	87,000,00.00	81,500,000.00	345,280,842.40
Annual Cost	471,882.82	918,257.00	2,271,320.00	2,427,500.00	3,466,605.50	9,555,565.32
PS	1,536,588.00	1,770,660.00	1,907,772.00	2,111,400.00	2,249,880.00	9,576,300.00
MOOE	1,108,211.00	858,257.00	1,291,320.00	1,936,000.00	1,172,355.5	6,366,143.50
Capital Outlay				50,000.00		
<b>TOTAL</b>	<b>84,166,681.82</b>	<b>33,747,174.00</b>	<b>158,051,254.40</b>	<b>6,474,900.00</b>	<b>88,388,841.00</b>	<b>370,778,851.22</b>

Table 3.11.2 Annual cost, expenditures, and revenues on solid waste management per municipality/city

Municipality/ City	Annual Budget	Expenditures	Revenue
Agoo	33,885,897.00	5,771,555.80	18,038,372.62
Aringay	13,760,000.00	-	-
Bacnotan	500,000	253,518	54,530
Bagulin	68,208,620.00	322,704.00	12,500.00
Balaoan	2,000,000.00	4,650,000.00	2,775,000.00
Bangar	2,905,000.00	2,905,000.00	-
Bauang	5,031,000.00	-	-
Burgos	3,675,000.00	4,650,781.14	-
Caba	72,931,413.96	6,115,921.60	30,000.00
Luna	2,046,000	2,046,000	0
Naguilian	2,797,360.32	2,797,360.32	1,072,995.00
Pugo	5,383,134	482,157.61	61,900
Rosario	98,462,140.00	1,476,260.00	565,143.75
City of San Fernando	7,047,000.00	-	70,917,493
San Gabriel	2,520,792.42	1,577,864.31	69,320.00
San Juan	4,129,314	4,129,314	-
Santo Tomas	-	6,000,000.00	-
Santol	63,335,000.00	-	60,545
Sudipen	57,043,439.00	290,705.90	-
Tubao	2,000,000	1,500	-

Source: Excerpted from the approved 10-Year Solid Waste Management Plans of LGUs

## 3.12 Key Issues

The following are the key issues on solid waste management that are faced by the local government units of La Union.

<b>Engineering</b>	<ul style="list-style-type: none"> <li>• Limited waste collection coverage (coastal and upland areas)</li> <li>• Limited treatment, storage, and disposal facility for special wastes</li> <li>• Limited processing facility for biodegradable wastes</li> <li>• Limited recycling facility or plastic recovery program</li> <li>• Limited capacity of Sanitary Landfill Facility</li> <li>• Difficulty of Establishment of Waste-to-Energy facility</li> </ul>
<b>Education</b>	<ul style="list-style-type: none"> <li>• Outdated strategy of information dissemination or limited capacity on social and behavioral change communication strategy (SBCC) as the new "IEC" in influencing or changing attitudes and perceptions of the community towards an overall improvement of solid waste management.</li> <li>• Limited information on disaster wastes management</li> <li>• Limited study/data on marine litters pollution and microplastic pollution in the Province</li> <li>• Limited IEC plan for specific target audience</li> <li>• Poor recordkeeping of SWM data</li> </ul>
<b>Enforcement</b>	<ul style="list-style-type: none"> <li>• Low compliance to segregation</li> <li>• Limited enforcement of local ordinances</li> <li>• Varying degree of enforcement of ordinances</li> <li>• Limited sanctions to violators</li> <li>• Improper dismantling of WEEEs especially among junkshops</li> <li>• Limited sources of alternative packaging materials</li> <li>• Poor networking with private sectors</li> <li>• No provision of hazard pay to environment and natural resources management personnel</li> </ul>
<b>Equity</b>	<ul style="list-style-type: none"> <li>• Limited access to SWM Fund</li> <li>• Low or minimal imposition of garbage collection fees</li> <li>• High funding requirement for the construction of SLF</li> </ul>
<b>Environmental Program Organization and Management</b>	<ul style="list-style-type: none"> <li>• Limited manpower in-charge of solid waste management programs and projects and other environmental activities</li> </ul>

Figure 3.12 Key Issues on Solid Waste Management

### Waste Characteristics

Following the National Solid Waste Management Commission (NSWMC) Resolution No. 1380, series of 2020 “Adopting the Guidelines on the Waste Analysis and Characterization Study and its Related Manual”, the Provincial Government of La Union (PGLU) through the Provincial Government – Environment and Natural Resources Office (PG-ENRO) conducted the actual waste characterization on 2022 – 2023. The PG-ENRO together with partner LGUs formed their respective WACS Team who were responsible for the preparation and actual characterization activities in the LGU.

The calculated per capita waste generation in La Union is 0.358 kg/day. Of the total waste generation in La Union, 47.84% is composed of biodegradables, followed by recyclables with 26.34%, then residual wastes for disposal at 17.79%, and residual wastes with potential for diversion at 3.66%, and special wastes at 4.37%.

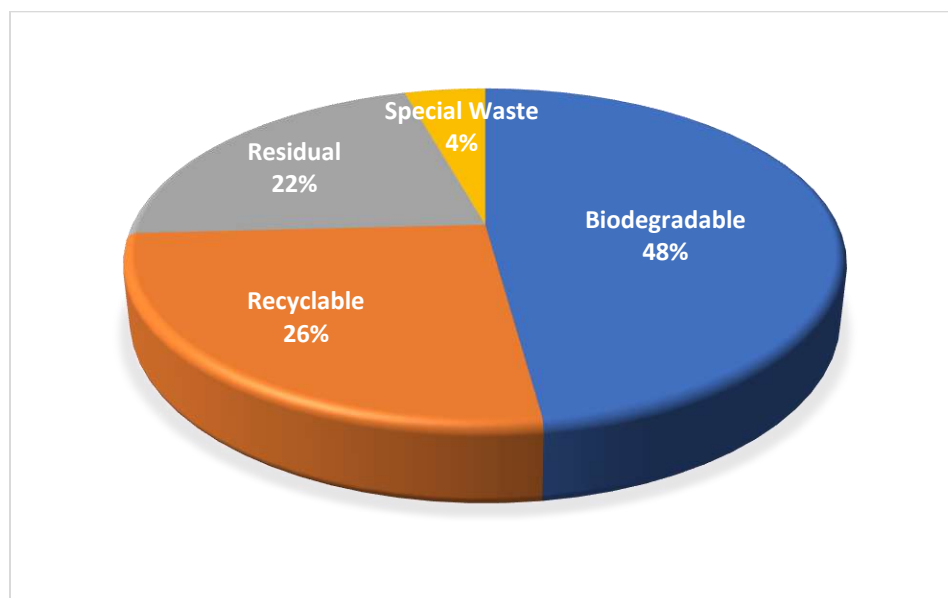


Figure 4.0 La Union Waste Generation by Composition



Table 4.01 La Union Daily Waste Generation by Composition and Sources (Households and non-Households)

WASTE SOURCES	Total Waste Generation		Biodegradable		Recyclable		Residual				Special Waste	
							With Potential for Diversion		For Disposal			
	Total Waste Generation (kg/day)	%	Total Waste Generation (kg/day)	%	Total Waste Generation (kg/day)	%	Total Waste Generation (kg/day)	%	Total Waste Generation (kg/day)	%	Total Waste Generation (kg/day)	%
Residential (Households)	136250.22	44.83%	66099.25	45.5%	38987.75	48.71%	3979.65	35.81%	21592.43	39.92%	5591.15	42.08%
Non-Household	167682.41	55.17%	79306.67	54.5%	41057.81	51.29%	7132.84	64.19%	32490.82	60.08%	7694.28	57.92%
TOTAL	303932.64	100.00%	145405.92	100.0%	80045.56	100.00%	11112.49	100.00%	54083.24	100.00%	13285.43	100.00%
			47.84%		26.34%		3.66%		17.79%		4.37%	

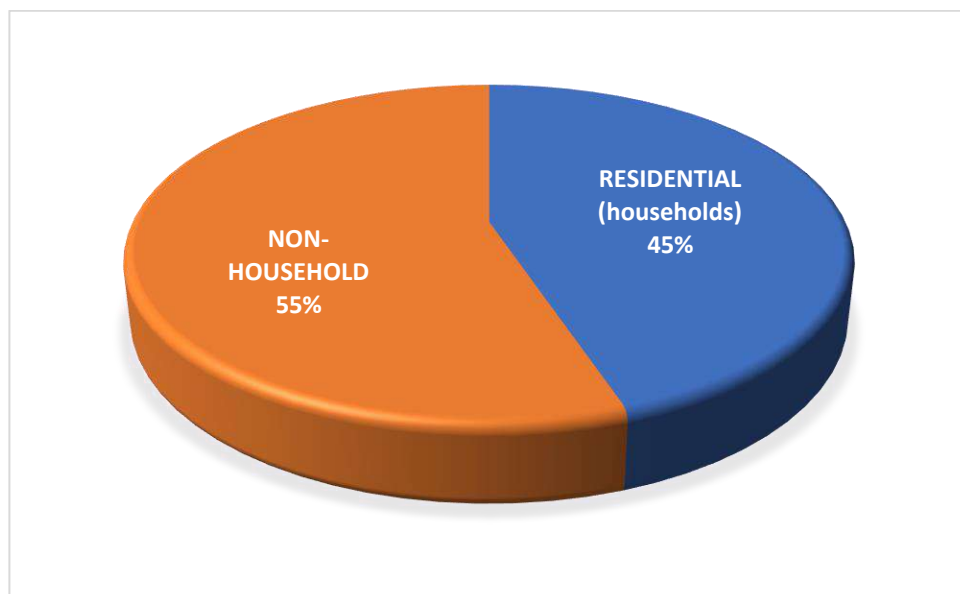


Figure 4.0. La Union Waste Generation by Sources

Waste generated are categorized into two (2) sources – the households and non-households. Non-households waste sources composed of the establishments, industries, institutions, and special waste generators. As shown in Figure 3.2., 45% of the waste generated were from households or residential areas while 55% were coming from the non-households.

## 4.1. Disposed Waste

Disposed wastes include the residual wastes and special or hazardous wastes. As shown in Table 3.1.1, 17.79% and 4.37% of the total waste generation in La Union are residual wastes for disposal and special wastes, respectively. Of the residual wastes for disposal, 60% were from the non-household generators (i.e., public market, establishments, industrial areas, and institutions) while 39.92% were from the households or residential areas. Of the special wastes generated, 57.92% were from non-households while 42.08% were from households.

Table 4.1.1 Quantity and Composition of Waste Generated by City/Municipality

LGU	PCG	SOURCE OF WASTE	TOTAL WASTE GENERATION		WASTE COMPOSITION (kg/day)									
			kg/day	%	Biodegradable	%	Recyclable	%	Residual w/ Potential	%	Residual for Disposal	%	Special Waste	%
DISTRICT I														
Bangar	0.399	Residential	11694.67	78%	6994.00	59.81%	3287.18	28.11%	55.95	0.48%	1342.85	11.48%	14.69	0.13%
		Commercial	1991.11	13%	1495.08	75.09%	133.82	6.72%	14.29	0.72%	342.91	17.22%	5.02	0.25%
		Industries	54.76	0%	32.92	60.12%	2.84	5.19%	0.76	1.39%	18.24	33.31%	0	0.00%
		Institutional	841.15	6%	499.33	59.36%	65.44	7.78%	10.85	1.29%	260.39	30.96%	5.1428	0.61%
		Public Market	323.33	2%	203.44	62.92%	29.61	9.16%	3.582	1.11%	85.968	26.59%	0.729	0.23%
		Health Related	103.42	1%	50.32	48.66%	0	0.00%	1.94	1.88%	46.53	44.99%	4.625	4.47%
		TOTAL	15008.44	100%	9275.09	61.80%	3518.89	23.45%	87.37	0.58%	2096.89	13.97%	30.20	0.20%
Luna	0.5372	Residential	16801.84	85%	8324.55	49.55%	4964.18	29.55%	117.61	0.70%	2822.712	16.80%	572.79	3.41%
		Commercial	1391.35	7%	195.73	14.07%	420.48	30.22%	9.27	0.67%	222.386	15.98%	543.49	39.06%
		Industries	173.80	1%	124.6	71.69%	14.2	8.17%	1.4	0.81%	33.6	19.33%	0	0.00%
		Institutional	1069.53	5%	733.15	68.55%	210.26	19.66%	4.21	0.39%	101.05	9.45%	20.86	1.95%
		Public Market	359.73	2%	271.00	75.33%	45.95	12.77%	1.71	0.48%	41.07	11.42%	0	0.00%
		Health Related	22.36	0%	10.88	48.66%	0	0.00%	0.42	1.87%	10.06	44.99%	1	4.47%
		TOTAL	19818.61	100%	9659.91	48.74%	5655.07	28.53%	134.62	0.68%	3230.88	16.30%	1138.14	5.74%
Sudipen	0.0633	Residential	608.30	55%	147.28	24.21%	241.75	39.74%	97.68	16.06%	41.86	6.88%	79.73	13.11%
		Commercial	113.03	10%	38.71	34.25%	24.18	21.40%	7.90	6.99%	40.23	35.60%	1.99	1.76%
		Industries	114.55	10%	31.06	27.11%	27.58	24.08%	18.87	16.47%	35.26	30.79%	1.78	1.55%
		Institutional	182.79	16%	56.19	30.74%	85.14	46.58%	18.09	9.90%	13.65	7.47%	9.71	5.31%
		Public Market	90.65	8%	33.75	37.23%	19.94	21.99%	11.52	12.71%	25.00	27.58%	0.44	0.49%
		Health Related	5.77	1%	0.1	1.73%	2.581	44.70%	0.675	11.69%	1.047	18.13%	1.371	23.74%
		TOTAL	1115.07	100%	307.09	27.54%	401.18	35.98%	154.73	13.88%	157.05	14.08%	95.02	8.52%

Table 4.1.1 Quantity and Composition of Waste Generated by City/Municipality (continuation)

LGU	PCG	SOURCE OF WASTE	TOTAL WASTE GENERATION		WASTE COMPOSITION (kg/day)									
			kg/day	%	Biodegradable	%	Recyclable	%	Residual w/ Potentia l	%	Residual for Disposal	%	Specia l Waste	%
DISTRICT I														
Balaoan	0.0193	Residential	148.81	19%	88.59	59.53%	29.923	20.11%	1.03	0.69%	24.74	16.63%	4.527	3.04%
		Commercial	12.82	2%	6.805	53.10%	4	31.21%	0.08	0.62%	1.865	14.55%	0.065	0.51%
		Industries	7.42	1%	2.82	38.01%	1.36	18.33%	0.13	1.75%	3.05	41.11%	0.06	0.81%
		Institutional	47.37	6%	16.62	35.09%	17.57	37.09%	0.53	1.12%	12.65	26.70%	0	0.00%
		Public Market	566.50	72%	278.9	49.23%	104.5	18.45%	7.144	1.26%	171.456	30.27%	4.5	0.79%
		Health Related	0.00	0%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
		TOTAL	782.92	100%	393.74	50.29%	157.35	20.10%	8.91	1.14%	213.76	27.30%	9.15	1.17%
Santol	0.0516	Residential	432.90	64%	106.14	24.52%	241.21	55.72%	67.11	15.50%	15.63	3.61%	2.81	0.65%
		Commercial	121.17	18%	55.30	45.64%	33.71	27.82%	8.30	6.85%	22.76	18.78%	1.10	0.91%
		Industries	36.45	5%	28.49	78.16%	2.98	8.17%	1.23	3.37%	2.46	6.75%	1.30	3.55%
		Institutional	59.75	282%	8.64	14.46%	24.41	40.85%	9.30	15.57%	17.40	29.12%	0.01	0.01%
		Public Market	21.16	3%	7.19	34.00%	10.36	48.95%	0.04	0.20%	3.56	16.85%	0.00	0.00%
		Health Related	0.30	0%	0.035	11.78%	0.101	34.01%	0.067	22.56%	0.094	31.65%	0	0.00%
		TOTAL	671.72	100%	205.79	30.64%	312.77	46.56%	86.05	12.81%	61.90	9.22%	5.21	0.78%
Bacnotan	0.1812	Residential	4873.27	61%	1408.18	28.90%	2295.90	47.11%	542.37	11.13%	205.74	4.22%	421.08	8.64%
		Commercial	707.58	9%	225.05	31.81%	163.81	23.15%	112.70	15.93%	194.61	27.50%	11.41	1.61%
		Industries	316.31	4%	231.58	73.21%	23.80	7.52%	31.58	9.99%	14.91	4.71%	14.43	4.56%
		Institutional	313.89	4%	81.96	26.11%	166.00	52.89%	39.63	12.63%	18.78	5.98%	7.52	2.39%
		Public Market	1725.56	22%	1076.82	62.40%	181.30	10.51%	93.33	5.41%	365.98	21.21%	8.14	0.47%
		Health Related	73.90	1%	15	20.30%	18.6	25.17%	7.7	10.42%	7.6	10.28%	25	33.83%
		TOTAL	8010.50	100%	3038.60	37.93%	2849.41	35.57%	827.31	10.33%	807.61	10.08%	487.57	6.09%

Table 4.1.1 Quantity and Composition of Waste Generated by City/Municipality (continuation)

LGU	PCG	SOURCE OF WASTE	TOTAL WASTE GENERATION		WASTE COMPOSITION (kg/day)									
			kg/day	%	Biodegradab le	%	Recyclabl e	%	Residual w/ Potential	%	Residual for Disposal	%	Special Waste	%
DISTRICT I														
San Gabriel	0.0729	Residential	531.85	36%	394.34	74.14%	82.68	15.55%	18.45	3.47%	19.11	3.59%	17.27	3.25%
		Commercial	227.08	15%	56.23	24.76%	103.76	45.70%	25.04	11.03%	10.79	4.75%	31.25	13.76%
		Industries	404.83	27%	403.00	99.55%	0.16	0.04%	0.04	0.01%	1.63	0.40%	0.00	0.00%
		Institutional	43.31	3%	23.39	54.01%	8.95	20.66%	2.36	5.44%	7.06	16.30%	1.56	3.60%
		Public Market	284.47	19%	180.80	63.56%	23.67	8.32%	6.25	2.20%	73.35	25.78%	0.40	0.14%
		Health Related	0.29	0%	0.003	1.03%	0.078	26.80%	0.025	8.59%	0.095	32.65%	0.09	30.93%
		TOTAL	1491.82	100%	1057.76	70.90%	219.29	14.70%	52.17	3.50%	112.03	7.51%	50.57	3.39%
San Juan	0.2812	Residential	1066.44	9%	562.81	52.77%	214.69	20.13%	125.76	11.79%	156.95	14.72%	6.24	0.59%
		Commercial	6452.85	57%	2498.38	38.72%	2198.75	34.07%	299.55	4.64%	1121.67	17.38%	334.50	5.18%
		Industries	1891.44	17%	1473.33	77.89%	98.88	5.23%	52.33	2.77%	230.48	12.19%	36.43	1.93%
		Institutional	490.50	4%	388.21	79.15%	63.09	12.86%	9.64	1.97%	17.73	3.61%	11.84	2.41%
		Public Market	1326.65	12%	772.11	58.20%	284.15	21.42%	29.03	2.19%	237.18	17.88%	4.19	0.32%
		Health Related	3.34	0%	0.1	2.99%	1.33	39.80%	0.02	0.60%	1.522	45.54%	0.37	11.07%
		TOTAL	11231.21	100%	5694.93	50.71%	2860.88	25.47%	516.32	4.60%	1765.52	15.72%	393.57	3.50%
City of San Fernando	0.4047	Residential	36898.00	70%	14174	38.41%	8966	24.30%	494.6	1.34%	11870.4	32.17%	1393	3.78%
		Commercial	4532.28	9%	1221	26.94%	1786	39.41%	58.56	1.29%	1405.44	31.01%	61.28	1.35%
		Industries	4095.88	8%	1759	42.95%	1008	24.61%	48	1.17%	1152	28.13%	128.88	3.15%
		Institutional	2082.58	4%	213	10.23%	647	31.07%	46.4	2.23%	1113.6	53.47%	62.58	3.00%
		Public Market	5351.49	10%	4626	86.44%	173	3.23%	22.08	0.41%	529.92	9.90%	0.49	0.01%
		Health Related	0	0%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
		TOTAL	52960.23	100%	21993.00	41.53%	12580.00	23.75%	669.64	1.26%	16071.36	30.35%	1646.23	3.11%

Table 4.1.1 Quantity and Composition of Waste Generated by City/Municipality (continuation)

LGU	PCG	SOURCE OF WASTE	TOTAL WASTE GENERATION		WASTE COMPOSITION (kg/day)									
			kg/day	%	Biodegradable	%	Recyclable	%	Residual w/ Potential	%	Residual for Disposal	%	Special Waste	%
DISTRICT II														
Bagulin	0.1424	Residential	1056.20	51%	359.76	34.06%	403.15	38.17%	97.11	9.19%	67.48	6.39%	128.70	12.19%
		Commercial	379.12	18%	96.61	25.48%	214.89	56.68%	35.66	9.41%	10.51	2.77%	21.45	5.66%
		Industries	185.38	9%	152.14	82.07%	13.51	7.29%	7.53	4.06%	4.36	2.35%	7.83	4.23%
		Institutional	463.49	22%	140.26	30.26%	172.45	37.21%	46.87	10.11%	41.66	8.99%	62.26	13.43%
		Public Market	0.05	0%	0.01	17.02%	0.01	29.79%	0.00	6.38%	0.02	44.68%	0.00	2.13%
		Health Related	0.77	0%	0.2501	32.48%	0.265	34.41%	0.25	32.46%	0.005	0.65%	0	0.00%
		TOTAL	2085.00	100%	749.02	35.92%	804.28	38.57%	187.42	8.99%	124.03	5.95%	220.25	10.56%
Bauang	0.6099	Residential	37395.60	76%	20397.60	54.55%	5099.40	13.64%	339.96	0.91%	8159.04	21.82%	3399.6	9.09%
		Commercial	1460.50	3%	362.00	24.79%	881.50	60.36%	8.68	0.59%	208.32	14.26%	0	0.00%
		Industries	8800.00	18%	2054.8	23.35%	6323.7	71.86%	16.86	0.19%	404.64	4.60%	0	0.00%
		Institutional	660.10	1%	381.60	57.81%	207.60	31.45%	2.832	0.43%	67.968	10.30%	0.1	0.02%
		Public Market	876.00	2%	738.20	84.27%	82.50	9.42%	2.20	0.25%	52.80	6.03%	0.3	0.03%
		Health Related	44.00	0%	15.84	36.00%	14.64	33.27%	0.438	1.00%	10.522	23.91%	2.56	5.82%
		TOTAL	49236.20	100%	23950.04	48.64%	12609.34	25.61%	370.97	0.75%	8903.29	18.08%	3402.56	6.91%
Naguilian	0.1333	Residential	4628.08	55%	1127.90	24.37%	2209.37	47.74%	546.99	11.82%	352.56	7.62%	391.26	8.45%
		Commercial	417.26	5%	193.50	46.37%	52.72	12.63%	12.38	2.97%	81.10	19.44%	77.56	18.59%
		Industries	125.82	1%	49.77	39.56%	42.28	33.60%	14.76	11.73%	15.75	12.52%	3.26	2.59%
		Institutional	787.15	9%	419.73	53.32%	181.92	23.11%	92.88	11.80%	84.25	10.70%	8.36	1.06%
		Public Market	2347.31	28%	1660.32	70.73%	139.36	5.94%	122.22	5.21%	420.42	17.91%	5.00	0.21%
		Health Related	132.47	2%	16.911	12.77%	77.113	58.21%	12.885	9.73%	4.4975	3.40%	21.063	15.90%
		TOTAL	8438.10	100%	3468.14	41.10%	2702.76	32.03%	802.12	9.51%	958.57	11.36%	506.50	6.00%

Table 4.1.1 Quantity and Composition of Waste Generated by City/Municipality (continuation)

LGU	PCG	SOURCE OF WASTE	TOTAL WASTE GENERATION		WASTE COMPOSITION (kg/day)									
			kg/day	%	Biodegradable	%	Recyclable	%	Residual w/ Potential	%	Residual for Disposal	%	Special Waste	%
DISTRICT II														
Burgos	0.0088	Residential	0.96	1%	0.31	32.41%	0.00	0.00%	0.03	2.72%	0.62	64.61%	0.0025	0.26%
		Commercial	18.88	26%	15.78	83.58%	0.2	1.06%	0.116	0.61%	2.784	14.75%	0	0.00%
		Industries	0.00	0%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
		Institutional	4.10	6%	0.8	19.51%	0.9	21.95%	0.096	2.34%	2.304	56.20%	0	0.00%
		Public Market	47.80	65%	21.37	44.71%	14.57	30.48%	0.4744	0.99%	11.3856	23.82%	0	0.00%
		Health Related	1.60	2%	0.6	37.50%	0.1	6.25%	0.02	1.25%	0.48	30.00%	0.4	25.00%
		TOTAL	73.34	100%	38.86	52.99%	15.77	21.50%	0.73	1.00%	17.57	23.96%	0.40	0.55%
Caba	0.1562	Residential	1124.81	31%	204.75	18.20%	547.93	48.71%	126.58	11.25%	150.19	13.35%	95.36	8.48%
		Commercial	283.54	8%	99.33	35.03%	79.79	28.14%	38.18	13.47%	63.92	22.54%	2.31	0.82%
		Industries	239.90	7%	28.68	11.96%	33.75	14.07%	8.66	3.61%	10.93	4.56%	157.88	65.81%
		Institutional	1461.57	41%	515.37	35.26%	802.31	54.89%	19.07	1.30%	67.75	4.64%	57.07	3.90%
		Public Market	441.88	12%	245.81	55.63%	30.50	6.90%	37.92	8.58%	103.73	23.48%	23.92	5.41%
		Health Related	30.00	1%	5.2	17.33%	16.6	55.33%	1.1	3.67%	4.5	15.00%	2.6	8.67%
		TOTAL	3581.69	100%	1099.13	30.69%	1510.88	42.18%	231.50	6.46%	401.03	11.20%	339.15	9.47%
Aringay	0.19	Residential	5039.27	52%	1002.96	19.90%	3334.54	66.17%	385.03	7.64%	76.87	1.53%	239.88	4.76%
		Commercial	903.18	9%	466.56	51.66%	253.95	28.12%	57.61	6.38%	112.40	12.45%	12.66	1.40%
		Industries	755.88	8%	354.51	46.90%	159.44	21.09%	167.56	22.17%	26.91	3.56%	47.46	6.28%
		Institutional	601.01	6%	213.50	35.52%	269.20	44.79%	57.96	9.64%	19.57	3.26%	40.79	6.79%
		Public Market	2316.17	24%	1428.00	61.65%	334.71	14.45%	70.60	3.05%	478.30	20.65%	4.55	0.20%
		Health Related	18.81	0%	2.1	11.16%	5.6	29.77%	0.76	4.04%	1.1	5.85%	9.25	49.18%
		TOTAL	9634.32	100%	3467.63	35.99%	4357.44	45.23%	739.52	7.68%	715.15	7.42%	354.58	3.68%

Table 4.1.1 Quantity and Composition of Waste Generated by City/Municipality (continuation)

LGU	PCG	SOURCE OF WASTE	TOTAL WASTE GENERATION		WASTE COMPOSITION (kg/day)									
			kg/day	%	Biodegradabl e	%	Recyclabl e	%	Residual w/ Potentia l	%	Residual for Disposal	%	Special Waste	%
DISTRICT II														
Agoo	0.548 2	Residential	31942.86	86%	17521.4	54.85%	6604.22	20.68%	274.95	0.86%	6598.83	20.66%	943.46	2.95%
		Commercial	2301.44	6%	794.04	34.50%	794.02	34.50%	26.5548	1.15%	637.3152	27.69%	49.51	2.15%
		Industries	361.27	1%	10.79	2.99%	74.62	20.65%	0.286	0.08%	6.864	1.90%	268.71	74.38 %
		Institutional	1407.72	4%	518.19	36.81%	408.93	29.05%	16.1568	1.15%	387.7632	27.55%	76.68	5.45%
		Public Market	1038.49	3%	506.8	48.80%	504.5	48.58%	1.08	0.10%	25.92	2.50%	0.19	0.02%
		Health Related	0.98	0%	0.06	6.12%	0.15	15.31%	0.0028	0.29%	0.0672	6.86%	0.7	71.43 %
		TOTAL	37052.76	100%	19351.28	52.23%	8386.44	22.63%	319.03	0.86%	7656.76	20.66%	1339.25	3.61%
Tuba o	0.041 7	Residential	814.38	63%	305.03	37.46%	330.90	40.63%	76.22	9.36%	39.71	4.88%	62.52	7.68%
		Commercial	68.38	5%	20.12	29.42%	18.84	27.55%	9.23	13.50 %	18.79	27.48%	1.40	2.05%
		Industries	39.42	3%	26.29	66.68%	6.35	16.11%	0.76	1.94%	5.91	14.98%	0.11	0.29%
		Institutional	245.22	19%	111.11	45.31%	71.70	29.24%	9.51	3.88%	52.69	21.49%	0.20	0.08%
		Public Market	86.28	7%	68.47	79.36%	11.67	13.53%	1.82	2.11%	4.31	5.00%	0.01	0.01%
		Health Related	40.53	3%	10.559	26.05%	5.484	13.53%	12.457	30.74 %	6.0411	14.91%	5.989	14.78 %
		TOTAL	1294.22	100%	541.58	41.85%	444.95	34.38%	110.00	8.50%	127.45	9.85%	70.24	5.43%
Pugo	0.052	Residential	328.29	25%	104.23	31.75%	120.67	36.76%	33.78	10.29 %	40.66	12.38%	28.95	8.82%
		Commercial	230.05	18%	117.65	51.14%	53.49	23.25%	26.36	11.46 %	31.43	13.66%	1.13	0.49%
		Industries	359.55	27%	288.53	80.25%	43.83	12.19%	14.79	4.11%	9.63	2.68%	2.77	0.77%
		Institutional	15.18	1%	4.47	29.47%	5.64	37.15%	3.25	21.39 %	1.42	9.36%	0.40	2.64%
		Public Market	381.29	29%	201.10	52.74%	30.10	7.90%	12.98	3.40%	136.86	35.89%	0.24	0.06%
		Health Related	0.00	0%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
		TOTAL	1314.36	100%	715.98	54.47%	253.73	19.30%	91.16	6.94%	220.00	16.74%	33.48	2.55%



Table 4.1.1 Quantity and Composition of Waste Generated by City/Municipality (continuation)

LGU	PCG	SOURCE OF WASTE	TOTAL WASTE GENERATION		WASTE COMPOSITION (kg/day)									
			kg/day	%	Biodegradable	%	Recyclable	%	Residual w/ Potential	%	Residual for Disposal	%	Special Waste	%
DISTRICT II														
Santo Tomas	0.0275	Residential	254.05	21%	85.06	33.48%	130.71	51.45%	18.59	7.32%	14.84	5.84%	4.85	1.91%
		Commercial	92.92	8%	26.53	28.55%	31.14	33.51%	21.11	22.72%	12.81	13.79%	1.33	1.43%
		Industries	90.70	8%	28.00	30.87%	34.74	38.31%	7.34	8.10%	9.98	11.00%	10.63	11.72%
		Institutional	175.38	15%	46.14	26.31%	66.68	38.02%	13.12	7.48%	47.81	27.26%	1.63	0.93%
		Public Market	585.65	49%	261.37	44.63%	94.38	16.12%	65.85	11.24%	161.16	27.52%	2.89	0.49%
		Health Related	0.00	0%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
		TOTAL	1198.69	100%	447.10	37.30%	357.66	29.84%	126.00	10.51%	246.59	20.57%	21.34	1.78%
Rosario	0.2409	Residential	7139.50	50%	1427.92	20.00%	4601.09	64.45%	494.43	6.93%	279.87	3.92%	336.20	4.71%
		Commercial	1345.65	9%	683.87	50.82%	201.74	14.99%	119.96	8.91%	328.17	24.39%	11.91	0.88%
		Industries	2593.70	18%	2368.53	91.32%	80.48	3.10%	68.35	2.64%	61.14	2.36%	15.20	0.59%
		Institutional	1475.53	10%	319.98	21.69%	378.21	25.63%	86.91	5.89%	258.25	17.50%	432.18	29.29%
		Public Market	1596.55	11%	1322.73	82.85%	171.27	10.73%	11.85	0.74%	86.20	5.40%	4.50	0.28%
		Health Related	58.88	0%	13.89	23.59%	11.437	19.42%	6.6	11.21%	11.835	20.10%	15.12	25.68%
		TOTAL	14209.81	100%	6136.92	43.19%	5444.22	38.31%	788.10	5.55%	1025.46	7.22%	815.10	5.74%

## 4.2 Diverted Waste

Diverted wastes are wastes that are composted, recycled or reused which are then diverted from disposal. Of these wastes are the biodegradables at 47.84% of the total waste generation, recyclables at 26.34%, and the residual wastes with potential for diversion at 3.66%.

Table 4.21 Waste Diversion Target (kg/day) by each City/Municipality, 10-Year Planning Period, 2024–2033

WASTE DIVERSION TARGETS (kg/day)											
LGU	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT 1											
Bangar	12,881.35	12,919.02	12,948.82	12,984.62	13,020.52	13,056.52	13,092.62	13,128.83	13,165.13	13,201.53	13,238.03
Luna	15,449.59	15,464.25	15,469.27	15,481.57	15,493.88	15,506.20	15,518.52	15,530.86	15,543.21	15,555.57	15,567.93
Sudipen	863.41	864.54	865.17	866.18	867.18	868.19	869.19	870.20	871.21	872.22	873.23
Balaoan	560.00	560.86	561.36	562.12	562.89	563.67	564.44	565.21	565.99	566.76	567.54
Santol	604.61	606.14	607.26	608.69	610.12	611.56	613.00	614.44	615.89	617.34	618.79
Bacnotan	6,715.32	6,738.26	6,756.95	6,778.91	6,800.94	6,823.04	6,845.22	6,867.46	6,889.78	6,912.18	6,934.64
San Gabriel	997.13	1,009.37	1,021.12	1,033.41	1,045.84	1,058.43	1,071.17	1,084.06	1,097.11	1,110.31	1,123.67
San Juan	9,072.13	9,129.13	9,180.69	9,236.69	9,293.03	9,349.72	9,406.75	9,464.13	9,521.87	9,579.95	9,638.39
City of San Fernando	35,242.64	35,463.77	35,664.69	35,882.25	36,101.13	36,321.35	36,542.91	36,765.82	36,990.09	37,215.73	37,442.75
DISTRICT 2											
Bagulin	1,740.72	1,754.51	1,767.35	1,781.03	1,794.81	1,808.70	1,822.70	1,836.81	1,851.03	1,865.35	1,879.79
Bauang	36,928.80	37,168.03	37,386.67	37,622.58	37,859.98	38,098.88	38,339.28	38,581.20	38,824.65	39,069.63	39,316.16
Naguilian	6,973.02	7,091.73	7,208.23	7,328.86	7,451.51	7,576.21	7,703.00	7,831.91	7,962.97	8,096.23	8,231.72
Burgos	55.36	55.44	55.47	55.53	55.60	55.66	55.72	55.79	55.85	55.91	55.98
Caba	2,841.52	2,847.83	2,852.30	2,858.16	2,864.03	2,869.92	2,875.81	2,881.72	2,887.65	2,893.58	2,899.53
Aringay	8,564.59	8,612.56	8,655.29	8,702.29	8,749.54	8,797.05	8,844.82	8,892.85	8,941.13	8,989.68	9,038.50
Agoo	28,056.75	28,189.16	28,304.96	28,432.34	28,560.28	28,688.80	28,817.90	28,947.58	29,077.85	29,208.70	29,340.14
Tubao	1,096.53	1,104.36	1,111.56	1,119.30	1,127.10	1,134.95	1,142.85	1,150.81	1,158.83	1,166.90	1,175.03
Pugo	1,060.88	1,091.83	1,123.00	1,155.12	1,188.17	1,222.15	1,257.11	1,293.07	1,330.06	1,368.11	1,407.24
Santo Tomas	930.76	941.01	950.82	961.09	971.47	981.97	992.58	1,003.31	1,014.15	1,025.11	1,036.18
Rosario	12,369.25	12,431.52	12,486.45	12,547.19	12,608.24	12,669.58	12,731.21	12,793.15	12,855.39	12,917.93	12,980.78

### 4.3 Generated Waste

Generated wastes refer to the amount of wastes that enter the waste stream before recycling, composting or disposal takes place. As shown in Table 3.1.1., the daily waste generation in La Union was 303,932.64 kg/day. Of these wastes, 44.83% were from the households while 55.17% were from the non-households.

**Table 4.3.1. Waste Projection (CY 2023-2033)**

Year	Waste generation capita per day based on WACS (kg/day)	Projected population	Daily waste generation based on population (kg/day)	Target Waste Diversion (%)
baseline 2023	0.282	848,312	239,223.98	76.64%
2024	0.282	854,167	240,875.09	78.64%
2025	0.282	859,560	242,395.92	80.64%
2026	0.282	865,375	244,035.71	82.64%
2027	0.282	871,256	245,694.08	84.64%
2028	0.282	877,203	247,371.36	86.64%
2029	0.282	883,219	249,067.86	88.64%
2030	0.282	889,305	250,783.93	90.64%
2031	0.282	895,461	252,519.89	92.64%
2032	0.282	901,688	254,276.10	94.64%
2033	0.282	907,989	256,052.91	96.64%

## Legal Framework

### 5.1. Local Laws and Regulations

The Republic Act 9003 (RA 9003), or the Ecological Solid Waste Management Act of 2000, is the national policy for planning and implementation of solid waste management. RA 9003 provides for the creation of necessary institutional mechanisms from the national, regional, provincial, up to the city, municipality and barangay levels. The law also imposes penalties for acts in violation of any of its provisions including non-segregation and burning of waste, among others.

In the Province of La Union, various ordinances has been enacted or formulated in support to the implementation of solid waste management programs, projects, and activities in the Province, as shown below.

**Table 5.1.1. Local Laws and Regulations related to Solid Waste Management**

Local Laws & Regulations	Title
<b>Provincial Ordinances</b>	
Provincial Ordinance No. 426-2023	Enacting the Single-Use Plastics (SUPs) and Other Reusable and Disposable Materials Code of the Province of La Union
Provincial Ordinance No. 007-2003	Provincial Environmental Protection and Management Code of La Union
Provincial Ordinance No. 352-2021	2021 Revised Provincial Environmental Protection and Management Code of La Union
Provincial Ordinance No. 236-2020	An Act Creating the Environment and Natural Resources Office (ENRO), and the Position of Provincial Environment and Natural Resources Officer in the

	Provincial Government of La Union, Appropriating Funds thereto, and for other Purposes
Provincial Ordinance No. 029-2012	Enacting the Sanitation Code of the Province of La Union
Provincial Ordinance No. 030-2012	Regulating the Use of thin-film single use, carry-out plastic bags, sando bags and or plastic labo as well as styrofoam, Styrofoam establishing an Environmental Protection Fee for its use, providing mechanism for its recovery, and recycling, and providing penalties for the violation thereof.”
Provincial Ordinance No. 058-2014	Amendment of SP Ordinance No. 030-2012 “Plastic Bag Regulation Ordinance
Provincial Ordinance No. 094-2016	Regulating the Use of Plastic Drinking Straws and Declaring every Fridays as plastic-drinking-straw holiday in the Province of La Union
Provincial Ordinance No. 267 – 2020	Institutionalizing the Search for Cleanest, Safest, and Greenest Local Government Unit in the Province of La Union
Provincial Ordinance No. 347 – 2021	An Ordinance Mandating All Coastal Barangays to Conduct Coastal Clean-Up and Engage Participation of the Community
<b>Provincial Resolutions</b>	
Provincial Resolution No. 125 – 2023	Refer the Proposal of Hbn. Pablo C. Ortega on the consideration of the Yearly Conduct of E-Waste Disposal Activity to PG-ENRO for further study
Provincial Resolution No. 1269-2022	Enjoining all Punong Barangays in the Province of La Union to ensure the Strict Implementation of the Plastic Ordinance within their Respective Territorial Jurisdiction
Provincial Resolution No. 142 – 2019	All inhabitants of the Province of La Union are discouraged and asked to refrain from buying and using products in plastic sachets, plastic cups and the likes which could be re-used to help reduce plastic wastes
Provincial Resolution No. 155-2010	Resolution requesting all Municipalities without ENRO offices to appoint/designate an Environmental Management Coordinator (EMC) and providing funds thereof
Provincial Resolution No. 200-2018	Requesting the component Local Government Units of the Province of La Union (LGUs) to create their respective environment and natural resources office with

	corresponding positions to be filled up so that there will be a local environment office that will attend to the implementation of various environmental laws and ordinances
Provincial Resolution Nb. 055-2019	Approving the Ten-Year Solid Waste Management Plan of the Province of La Union
Provincial Resolution Nb. 134-2019	Earnestly Requesting all the City/Municipal Mayors of the Province of La Union to Cause the Strict Enforcement of the Mandate of the Law for the Construction of a Sewage Treatment Plant (STP) in Hotels, Restaurants and other Similar Establishments
Provincial Resolution Nb. 174-2021	Encouraging the People of La Union to Use Sustainable Face Masks for the Duration of the Pandemic
<b>Executive Orders</b>	
Executive Order Nb. 8 series of 2024	Reorganization of the Provincial Solid Waste Management Board, Defining Its Composition, Powers and Functions and for Other Purposes
Executive Order Nb. 33 series of 2022	Reorganization of the Provincial Solid Waste Management Board, Defining Its Composition, Powers and Functions and for Other Purposes.
Executive Order Nb. 05 series of 2019	"Updating the Provincial Search Committee (PSC) for the Search for Cleanest, Safest, and Greenest LGUs in the Province of La Union"
Executive Order Nb. 8 series of 2017	Providing for the Reorganization of the Provincial Solid Waste Management Board, Defining Its Composition, Powers and Functions and for Other Purposes.

Source: PG-ENRO, 2023

Table 5.1.2 National Solid Waste Management Commission (NSWMC) – issued Resolutions

Resolutions	Title
NSWMC Resolution Nb. 1056-B series of 2024	Resolution Approving Ten-Year Solid Waste Management Plan of Province of La Union
NSWMC Resolution Nb. 1056 A series of 2018	Resolution Approving the Ten-Year Solid Waste Management Plan of Province of La Union

NSWMC Resolution No. 1380 series of 2020	Adopting the Guidelines on the Waste Analysis and Characterization Study and its Related Manual
NSWMC Resolution No. 1655 series of 2024	Adopting the Annexes to the Annotated Outline for the Renewal of 10-Year Solid Waste Management Plans of Local Government Units
NSWMC Resolution No. 1363 series of 2020	Resolution directing the DENR to prepare and implement the banning of the use of unnecessary single-use plastics (SUPs) by National Government Agencies (NGAs), Local Government Units (LGUs) Offices and all other Government Controlled Offices
NSWMC Resolution No. 1428 series of 2021	Resolution declaring the plastic soft drink straw and plastic coffee stirrer as non-environmentally acceptable products
NSWMC Resolution No. 1468 series of 2021	Resolution to Strengthen the Enforcement of the Provisions of RA 9003 on Open Burning of Municipal Solid Wastes including Agricultural Wastes
NSWMC Resolution No. 1441 series of 2021	Resolution Adopting the National Plan of Action for the Prevention, Reduction, and Management of Marine Litter (NPOA-ML)
NSWMC Resolution No. 1452 series of 2021	Adopting the Total Solid Waste Management Solution to Optimize Waste Recovery and Utilization in the Sanitary Landfills prior to Disposal

## 5.2 Roles

Pursuant to the relevant provisions of R.A. No. 7160, otherwise known as the Local Government Code, the LGUs shall be primarily responsible for the implementation and enforcement of the provisions of RA 9003 within their respective jurisdictions. Section 11 of RA 9003 states the roles and responsibilities of the Provincial Solid Waste Management Board:

- Develop a provincial solid waste management plan from the submitted solid waste management plans of the respective city and municipal solid waste management boards. It shall review and integrate the submitted plans of all its component cities and municipalities and ensure that the various plans complement each other, and have the requisite components. The Provincial



Solid Waste Management Plan shall be submitted to the Commission for approval.

- The Provincial Plans shall reflect the general program of action and initiatives of the provincial government and implementing a solid waste management program that would support the various initiatives of its component cities and municipalities.
- Provide the necessary logistical and operational support to its component cities and municipalities in consonance with subsection (f) of Section 17 of the Local Government Code;
- Recommend measures and safeguards against pollution and for the preservation of the natural ecosystem;
- Recommend measures to generate resources, funding and implementation of project and activities as specified in the duly approved solid waste management plans;
- Identify areas within its jurisdiction which have common solid waste management problems and are appropriate units for planning local solid waste management services;
- Coordinate the efforts of the component cities and municipalities in the implementation of the Provincial Solid Waste Management Plan;
- Develop an appropriate incentive scheme as an integral component of the Provincial Solid Waste Management Plan;
- Convene joint meetings of the provincial, city and municipal solid waste management boards at least every quarter for purposes of integrating, synchronizing, monitoring and evaluating the development and implementation of its provincial solid waste management plan;

- Represent any of its component city or municipality in coordinating its resource and operational requirements with agencies of the national government;
- Oversee the implementation of the Provincial Solid Waste Management Plan;
- Review every two (2) years or as the need arises the Provincial Solid Waste Management Plan for purposes of ensuring its sustainability, viability, effectiveness and relevance in relation to local and international development in the field of solid waste management; and;
- Allow for the clustering of LGUs for the solution of common solid waste management problems.

For the City and Municipal Solid Waste Management Boards, the following are their roles and responsibilities, as specified in Section 12 of RA 9003:

- Develop the City or Municipal Solid Waste Management Plan that shall ensure the long-term management of solid waste, as well as integrate the various solid waste management plans and strategies of the barangays in its area of jurisdiction. In the development of the Solid Waste Management Plan, it shall conduct consultations with the various sectors of the community;
- Adopt measures to promote and ensure the viability and effective implementation of solid waste management programs in its component barangays;
- Monitor the implementation of the City or Municipal Solid Waste Management Plan through its various political subdivisions and in cooperation with the private sector and the NGOs;

- Adopt specific revenue-generating measures to promote the viability of its Solid Waste Management Plan;
- Convene regular meetings for purposes of planning and coordinating the implementation of the solid waste management plans of the respective component barangays;
- Oversee the implementation of the City or Municipal Solid Waste Management Plan;
- Review every two (2) years or as the need arises the City or Municipal Solid Waste Management Plan for purposes of ensuring its sustainability, viability, effectiveness and relevance in relation to local and international developments in the field of solid waste management;
- Develop the specific mechanics and guidelines for the implementation of the City or Municipal Solid Waste Management Plan;
- Recommended to appropriate local government authorities specific measures or proposals for franchise or build-operate-transfer agreements with duly recognized institutions, pursuant to R.A.6957, to provide either exclusive or non-exclusive authority for the collection, transfer, storage, processing, recycling or disposal of municipal solid waste. The proposals shall take into consideration appropriate government rules and regulations on contracts, franchise and build- operate-transfer agreements;
- Provide the necessary logistical and operational support to its component cities and municipalities in consonance with subsection (f) of Section 17 of the Local Government Code;
- Recommended measures and safeguards against pollution and for the preservation of the natural ecosystem; and

- Coordinate the efforts of its components barangays in the implementation of the city or municipal Solid Waste Management Plan.

The constituents in the barangays are the cooperators in the government programs and projects on SWM. They are also the influencers in terms of giving feedbacks and recommendations on how to implement said programs, given the specific context and experiences of the people. Included in the constituents are all the waste sources or generators from all the sectors in the province such as residents, commercial/recreational/agricultural establishments, institutions, industries, and service establishments.

NGOs and other civic organizations are expected to participate in the IEC campaigns and mobilize resources for SWM programs, projects and activities of the Province. They can also participate in enforcement activities as volunteer enforcers.

Recycling companies are expected to participate in capability building (seminars, researches) especially on appropriate recycling strategies and innovative or emerging technologies for the different waste materials.

### **5.3 Provincial Solid Waste Management Board**

The Provincial Solid Waste Management Board of La Union Province was reorganized by virtue of Executive Order No. 8, Series of 2024 entitled “Reorganization of the Provincial Solid Waste Management Board,

Defining Its Composition, Powers and Functions and for Other Purposes."

The EO lists down the composition of the PSWMB, as follows:

- Chairman** : *Provincial Governor*
- Co-chairman** : *Provincial Director, DILG-La Union*
- Members** : *All Mayors of Component City & Municipalities*
- Representative, 1<sup>st</sup> District of La Union*
- Representative, 2<sup>nd</sup> District of La Union*
- Chairman, SP Committee on Environment & Human Ecology & Security*
- Chairman, SP Committee on Health*
- Chairman, SP Committee on Energy*
- Provincial Health Officer*
- Provincial General Services Officer*
- Provincial Engineer*
- Provincial Budget Officer*
- Provincial Planning and Development Coordinator*
- DENR, Provincial Environment & Natural Resources Officer*
- DOST, Provincial Director*
- DTI, Provincial Director*
- Provincial Director, La Union Police Provincial Office*
- President, Don Mariano Marcos Memorial State University*
- CHED, Regional Director*
- Chairman of the Board, La Union Vibrant Women, Inc*
- Manager, Helix Mining Development Corporation (HMDC)*
- Manager, Holcim Philippines, Inc – La Union Plant*
- President, Junkshop Association of City of San Fernando*
- President, LINK*

Executive Order No. 8, Series of 2024 also provides the Provincial Technical Working Group and Secretariat with the following composition:

<b>Chairman</b>	: <i>Provincial Government – Environment and Natural</i>
<b>Vice-Chairman</b>	: <i>Provincial Health Officer</i>
<b>Members</b>	: <i>Representative of SP Committee on Environment, Human Ecology &amp; Security</i>
	<i>Representative of SP Committee on Health</i>
	<i>Representative of SP Committee on Energy</i>
	<i>Provincial Information Officer</i>
	<i>Provincial Planning and Development Coordinator</i>
	<i>Provincial Engineer</i>
	<i>Provincial General Services Officer</i>
	<i>Provincial Budget Officer</i>
	<i>Provincial Legal Officer</i>
	<i>Provincial Environment and Natural Resources Officer (PENRO), DENR-PENRO La Union</i>
	<i>Regional Director, DENR-EMB Region 1</i>
	<i>Provincial Director, DOST La Union</i>
	<i>President, League of Local Planning and Development Coordinators of La Union</i>

The duties and responsibilities of the TWG are as follows:

- The TWG shall provide technical assistance according to their expertise;
- Prepare/submit a Provincial Solid Waste Management Plan and Budget to the OPG and SP for approval;
- Ensure effective and efficient performance of the functions of the Board and prompt implementation, monitoring and evaluation of the plans and programs;

- Propose annual allocation of resources of programs and projects installed under the approved programs/projects/activities;
- Submit periodic reports to the Board on the progress and accomplishment of programs and projects; and
- Perform other related functions as may be assigned by the Board from time to time.

The Secretariat of the Provincial Solid Waste Management Board shall be the focal person in-charge of the Integrated Waste Management Section of the PG-ENRO to be headed by its Unit head.

#### **5.4 City/Municipal Solid Waste Management Board**

All of the component LGUs have created their own City/Municipal Solid Waste Management Boards. All of the barangays have also already created and organized the Barangay Solid Waste Management Committee.

#### **5.5 Stakeholders Participation**

The following are the regular and future programs, projects, and activities under the Integrated Waste Management Program with significant participation and involvement of various stakeholders. These include the conduct of meetings, consultations, monitoring, researches, plans and studies, trainings, public awareness, and advocacy campaigns, project establishments, incentive programs, and among others.



Figure 5.5. Promoting Community Engagement on Waste Diversion through Project ECHO

Source: PGLU Presentation during the 7<sup>th</sup> Regional Ecological Solid Waste Management Summit

Table 5.5. Programs, Projects, & Activities under the Integrated Waste Management Program

Programs, Projects, & Activities
<b>Meetings/Consultations</b>
➤ Conduct of Provincial Solid Waste Management Board Meetings (Quarterly)
➤ Collaboration with LGUs in the establishment of sanitary landfill facility
➤ Collaboration with LGUs in the establishment of healthcare waste central storage and treatment facility
➤ Collaboration with LGUs & private entity in the establishment of wastewater treatment facility
<b>Monitoring Activities</b>
➤ Joint Monitoring on the Implementation of Solid Waste Management Plans of LGUs
➤ Toxic and Hazardous Waste Management Monitoring
➤ Wastewater Management Monitoring
➤ Healthcare Waste Management Monitoring in Provincial and District Hospitals
➤ Disaster Waste Management Monitoring & Assistance during and aftermath of Disasters
<b>Plans, Researches, and Studies</b>
➤ Updating of the 10-Year Solid Waste Management Plan
➤ Conduct of Waste Analysis and Characterization Study
➤ Development of Provincial Special Waste Management System
➤ Partnership with an accredited TSD Facility
➤ Study Public-Private Partnership on the Establishment of TSD Facility
➤ Conduct research on various issues/ areas on waste management
➤ Incentives/Hazard Pay for Environmental Workers (Garbage Collectors, Sweepers/Utility Workers)
<b>Training, Public Awareness, and Advocacy Campaign</b>
➤ National Zero Waste Month



➤ International Coastal Clean-Up
➤ PCO and Managing Head Training
➤ Awareness Campaign on waste management
➤ Incentivized Program Palit Basura/ PROJECT ECHO (Ecobricking Challenge at Home is On!)
➤ National Zero Waste Month
➤ E-Waste Collection Event
➤ Brand Audit Coastal Clean Up
➤ Implementation of Plastic Code of La Union
➤ Bayong Project (Partnership with LGU & LIN)
➤ Institutionalization of Clean Coast Project
➤ Installation of Buyback Center (Plastic Bottle Recycle Vendo Machine)
<b>Accreditation</b>
➤ PCO and Managing Head Accreditation
➤ Hazardous Waste Storage Facility Accreditation
<b>Environmental Infrastructure Project (Waste Management)</b>
➤ Upgrading of Existing Sanitary Landfill Facilities
➤ Assistance on the Establishment of Wastewater Treatment Facility
➤ Establishment of Materials Recovery Facility in District Hospitals
➤ Development of waste Management System for household and LGU-owned Healthcare Facilities
- Installation of Waste Treatment Technology (i.e., Purification, Gasification, etc)
- Purchase of Hauler Truck
- Establishment of Treatment Facility
➤ Establishment of Eco-MRF (Barangay Lingsat & School MRF)
<b>Incentive Programs</b>
➤ Cleanest Safest and Greenest Program
- Kick-off Meeting & Evaluation with Provincial Search Committee (Honoraria, logistics, etc)
- CSG Deliberation/Best practice sharing
- Awarding of Winners (SPA)
➤ Green Seal Award (Institutions)
- Search for the Most Eco-Friendly PGLU Office
➤ Bougainvillea Award (Commercial Establishments)
- Green Tourism Enterprise
<b>ISO – Environmental Management System</b>
➤ Waste Management Committee
- Conduct of WACS within PGLU
- Monitoring of waste generation
➤ Application for Permit to Transport
➤ Procurement of Hauling Vehicle for Hazardous Wastes
➤ Establishment of Material Recovery Facility for Hazardous Wastes generated within PGLU premises
➤ PGLU Hazardous Waste Storage Facility Accreditation
➤ Hauling, Transport, and Treatment of PGLUs special wastes
➤ Installation of Wastewater Treatment Facility for PGLU facilities

### Plan Strategy

#### 6.1. Vision

“La Union:

The Heart of Agri-Tourism in Northern Luzon by 2025”

#### Mission

To be the catalyst for sustainable and inclusive development that improves the quality of life of our people.

#### Core Values

God-loving, People-oriented, Accountable, Committed

#### Goals

- To institutionalize solid waste management in the province by having a Provincial SWM Plan in synchrony with the SWM Plans of its city and municipalities.
- To decrease incidence of environmentally-related diseases.
- To reduce the volume and toxicity of solid waste by utilizing environment-friendly practices and technologies.
- To heighten the awareness of waste generators in the Province on Ecological Solid Waste Management through tri-media campaigns.
- To localize ESWM policies and laws for effective governance and establish sustainable partnership among LGUs, NGAs, NGOs, POs and other sectors.
- To increase income and economic opportunities through SWM projects

and services.

- o To involve all the stakeholders of the province on its solid waste management programs and activities.
- o To lead in shifting away from high dependence on single-use plastics of the community and wasteful consumption to the use of re-usable and environment friendly materials

## 6.2 Targets

Table 6.2. shows the diversion and disposal target per year in the Province for the 10-year period. It can be gleaned from the Table that this plan aims to target a waste diversion rate of 77.83% by CY 2033. With the various waste diversion strategies that shall be implemented, the projected waste disposal is targeted to decrease at 22.17% of the total waste generation in CY 2033.

**Table 6.21. Diversion and disposal target per year, 2023-2033**

Year	Waste generation capita per day based on WACS (kg/day)	Projected population	Daily waste generation based on population (kg/day)	Target Waste Diversion (%)	Weight diverted & to be diverted (kg/day)	Target waste disposal (%)	Target weight to disposal (kg/day)
baseline 2023	0.282	848,312	239,223.98	76.64%	183,349.06	23.36%	55,874.92
2024	0.282	854,167	240,875.09	78.64%	189,432.03	21.36%	51,443.07
2025	0.282	859,560	242,395.92	80.64%	195,475.97	19.36%	46,919.95
2026	0.282	865,375	244,035.71	82.64%	201,679.06	17.36%	42,356.64
2027	0.282	871,256	245,694.08	84.64%	207,963.48	15.36%	37,730.60
2028	0.282	877,203	247,371.36	86.64%	214,330.61	13.36%	33,040.75
2029	0.282	883,219	249,067.86	88.64%	220,781.87	11.36%	28,285.99
2030	0.282	889,305	250,783.93	90.64%	227,318.73	9.36%	23,465.20
2031	0.282	895,461	252,519.89	92.64%	233,942.66	7.36%	18,577.23
2032	0.282	901,688	254,276.10	94.64%	240,655.19	5.36%	13,620.91
2033	0.282	907,989	256,052.91	96.64%	247,457.88	3.36%	8,595.03

Table 6.2.2 Percentage Waste Diversion Targets by each City/Municipality, 10-Year Planning Period, 2024-2033

WASTE DIVERSION (%)											
LGU	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT I											
Bangar	85.83%	87.23%	88.63%	90.03%	91.43%	92.83%	94.23%	95.63%	97.03%	98.43%	99.83%
Luna	77.95%	79.75%	81.55%	83.35%	84.91%	86.72%	88.47%	90.27%	92.06%	93.86%	95.65%
Sudipen	77.39%	79.19%	80.99%	82.79%	84.23%	86.03%	87.79%	89.58%	91.37%	93.16%	94.95%
Balaoan	71.53%	73.93%	76.33%	78.73%	80.71%	83.11%	85.46%	87.85%	90.23%	92.62%	95.01%
Santol	90.01%	90.91%	91.81%	92.71%	92.76%	93.67%	94.52%	95.41%	96.30%	97.19%	98.08%
Bacnotan	83.83%	85.33%	86.83%	88.33%	88.70%	90.20%	91.63%	93.12%	94.60%	96.08%	97.56%
San Gabriel	66.84%	69.84%	72.84%	75.84%	75.17%	78.05%	80.88%	83.74%	86.60%	89.45%	92.31%
San Juan	80.78%	81.78%	83.28%	84.78%	86.28%	87.78%	89.28%	90.78%	92.28%	93.78%	95.28%
City of San Fernando	66.55%	69.55%	72.55%	75.55%	78.55%	81.55%	84.55%	87.55%	90.55%	93.55%	96.55%
DISTRICT II											
Bagulin	83.49%	84.99%	86.49%	87.99%	89.49%	90.99%	92.49%	93.99%	95.49%	96.99%	98.49%
Bauang	75.00%	77.10%	79.20%	81.30%	83.40%	85.50%	87.60%	89.70%	91.80%	93.90%	96.00%
Naguilian	82.64%	84.14%	85.64%	87.14%	88.64%	90.14%	91.64%	93.14%	94.64%	96.14%	97.64%
Burgos	75.49%	77.29%	79.09%	80.89%	82.69%	84.49%	86.29%	88.09%	89.89%	91.69%	93.49%
Caba	79.33%	80.83%	82.33%	83.83%	85.33%	86.83%	88.33%	89.83%	91.33%	92.83%	94.33%
Aringay	88.90%	90.00%	91.10%	92.20%	93.30%	94.40%	95.50%	96.60%	97.70%	98.80%	99.90%
Agoo	75.72%	77.22%	78.72%	80.22%	81.72%	83.22%	84.72%	86.22%	87.72%	89.22%	90.72%
Tubao	84.73%	86.23%	87.73%	89.23%	90.73%	92.23%	93.73%	95.23%	96.73%	98.23%	99.73%
Pugo	80.71%	82.21%	83.71%	85.21%	86.71%	88.21%	89.71%	91.21%	92.71%	94.21%	95.71%
Santo Tomas	77.65%	79.15%	80.65%	82.15%	83.65%	85.15%	86.65%	88.15%	89.65%	91.15%	92.65%
Rosario	87.05%	88.25%	89.45%	90.65%	91.85%	93.05%	94.25%	95.45%	96.65%	97.85%	99.05%
	79.57%	81.25%	82.95%	84.65%	86.01%	87.71%	89.38%	91.08%	92.77%	94.46%	96.15%

## 6.3. Strategies

The following are the general description of strategies to reach the diversion targets.

Table 6.3. General description of solid waste management strategies

General Strategy	Description
Institutional Arrangement	<ul style="list-style-type: none"> <li>✓ Creation and filling-up of positions of Municipal Environment and Natural Resources Officer (SG 24) in all of the municipalities</li> <li>✓ Creation of the Environmental Education and Enforcement Unit of the PG-ENRO</li> <li>✓ Creation of the Task Force for the enforcement and monitoring of the Plastic Code of La Union</li> <li>✓ Provision of hazard pay to environment and natural resources workers, whose scope of work involves exposure to various hazards</li> </ul>
Source Reduction	<ul style="list-style-type: none"> <li>✓ Adoption of the 2023 Plastic Code of La Union in all of the component LGUs</li> <li>✓ Adoption of the “Sustainable Palengke” Program of Lupon ng mga Indibidwal na Nangangalaga sa Kalikasan (LINK) provincewide</li> </ul>
Collection	<ul style="list-style-type: none"> <li>✓ Ensure 100% waste collection coverage in all of the component LGUs</li> <li>✓ Introduce creative programs and technologies to facilitate better plastic recovery (i.e., plastic bottle recycling sculpture or ecobins and the plastic bottle recycle vendo machine)</li> <li>✓ Initiate the reduction and prevention of marine litter/debris through the installation of trash traps, beach cleaning using garbage rollers and surf rakes to help in removing marine litters/debris</li> <li>✓ Mobilize the Barangay Solid Waste Management Committees to monitor proper segregation and backyard composting at the household level and ensure 100% waste collection in their jurisdictions</li> <li>✓ Engage the community to take part in waste diversion strategies through the ecobricking project</li> </ul>

	<ul style="list-style-type: none"> <li>✓ Partner with local junkshop operators in promoting community-based waste diversion/reduction intervention such that of the “Lata Mo, Elgas Ko”</li> <li>✓ Partner with private sectors or obliged companies to boost plastic recovery and waste diversion in the Province</li> <li>✓ Strengthen solid waste management initiatives in tourism areas and public areas (i.e., parks and plazas) through the installation of plastic bottle recycling sculptures or eco-bins to prevent littering in tourism areas</li> </ul>
Processing	<ul style="list-style-type: none"> <li>✓ Innovate grassroots solutions to plastic waste materials such that of ecobricks used as resources or construction materials for government projects</li> <li>✓ Establish eco-MRFs out of ecobricks as one way of promoting and mainstreaming circular economy principle</li> <li>✓ Provision of equipment such as bio-shredders, MRFs equipped with composting facility, and materials recovery vehicles to barangays to boost composting activities and services in the Province and prevent open burning</li> <li>✓ Partner with concerned agencies (i.e., DOST, DA, and Senate Committee on Agriculture and Food and Committee on Environment and Natural Resources) on the provision of composting facilities and equipment to further intensify the campaign on “No Open Burning”</li> </ul>
Final Disposal	<ul style="list-style-type: none"> <li>✓ Provide assistance in the upgrading of existing sanitary landfill facilities in La Union</li> <li>✓ Explore Public-Private Partnership in the establishment of Waste-to-Energy Facility and Treatment, Disposal, and Storage Facility in La Union</li> <li>✓ Ensure 100% compliance of the sanitary landfill facilities as to the provisions of the Environmental Compliance Certificate and other permits such that of the Water Discharge Permit, Permit to Operate from DOH Permit to Operate (for generator sets if applicable), Hazardous Waste Generator’s ID, among others</li> </ul>
Special Waste Management	<ul style="list-style-type: none"> <li>✓ Ensure 100% of the component LGUs with Hazardous Waste Generator Registration Certificate and partner/ access with a TSD facility</li> <li>✓ Prepare Feasibility Study for the Establishment of Treatment, Storage, and Disposal Facility in La Union through a consultancy service</li> <li>✓ Develop the provincial special wastes management system for households and LGU-</li> </ul>

	<p>owned facilities through the following</p> <ul style="list-style-type: none"> <li>- Purchase of hauler truck/ transporter</li> <li>- Installation of waste treatment technology</li> <li>- Establishment of treatment facility</li> </ul> <p>✓ Annual conduct of E-Waste Collection Event</p>
Markets for recyclables	<p>✓ Partner with local junkshop operators for a more efficient plastic recovery through the “Lata Mo, Elgas Ko” program</p> <p>✓ Install creative and more engaging ways on promoting plastic recovery such that of the plastic recycling vending machine installed in malls and other strategic areas</p> <p>✓ Partner with the Department of Trade and Industry (DTI) through their Green MSMEs Program</p> <p>✓ Develop a community-based livelihood program on the production of eco-friendly packaging materials</p>
Information, Education, and Communication	<p>✓ Explore social and behavioral change communication strategy (SBCC) as the new “IEC” in influencing or changing attitudes and perceptions of the community towards an overall improvement of solid waste management</p> <p>✓ Conduct of massive information, education and communication campaigns using quad media (print, radio, television, and internet) and other platforms such as the use of mascot</p> <p>✓ IEC focusing on the following campaigns:</p> <ul style="list-style-type: none"> <li>- Banning of Single-Use Plastics</li> <li>- Microplastic Pollution</li> <li>- “Bring Your Own Bayong” Campaign</li> <li>- “Bring your Own Container” Campaign</li> <li>- #chooseREUSABLES</li> <li>- “Bring Your own Reusables”</li> <li>- Upcycling thru “Basuramazing” Program</li> <li>- Practicing reuse/refill system</li> <li>- Promoting alternative packaging materials</li> <li>- No Open Burning</li> </ul> <p>✓ Integration of waste and other environmental management concepts in PGLU major events such that of the Mutia ti La Union, La Union Surfing Break, La Union Founding Anniversary, Youth Summit, among others</p>

Research and Policy Development	<ul style="list-style-type: none"> <li>✓ Research and development on the emerging concerns of waste management such that of the disaster wastes, transboundary waste issues, microplastic pollution and marine litter/debris</li> <li>✓ Assistance to component LGUs in the conduct of Waste Analysis and Characterization Study (WACS) and updating of their respective 10-Year Solid Waste Management Plans to be further integrated and complemented in the annual review and updating of the provincial solid waste management plan</li> <li>✓ Strengthening the enforcement of “No Open Burning” in the Province through the enactment of a policy</li> </ul>
Incentives	<ul style="list-style-type: none"> <li>✓ Enhance the various incentive programs to motivate the establishments, schools, and other institutions to reduce their plastic footprint such as the <ul style="list-style-type: none"> <li>- Search for the Cleanest, Safest, and Greenest in component Local Government Units</li> <li>- Search for the Best Implementer of Magsidalus iti Arubayan among barangays</li> <li>- Green Tourism Enterprise Program for the establishments</li> <li>- Green Seal Award or Plastic-Free Campus in schools and other institutions, and organizations</li> </ul> </li> </ul>
Cost and Revenues	<ul style="list-style-type: none"> <li>✓ Ensure fund allocation for the implementation of the plan and other waste management related ordinances chargeable against the Special Purpose Appropriation (SPA)</li> </ul>
Monitoring & Evaluation	<ul style="list-style-type: none"> <li>✓ Review and update the 10-Year Solid Waste Management Plan every year as mandated in Section 16 of RA 9003</li> <li>✓ Strengthen the monitoring team to include other agencies such that of from the DLG and other concerned agencies</li> <li>✓ Conduct of Waste Analysis and Characterization Study (WACS) prior to the effectivity of the 2023 Plastic Code of La Union to establish baseline information and in every 3 years to assess the status of implementation and evaluate if the overall objectives are met</li> </ul>



### Solid Waste Management System

#### 7.1. Source Reduction

Source reduction is the minimization of wastes or practices prior to the generation of wastes. It is the most preferred option in the waste management hierarchy and this shall be the priority of ecological solid waste management system in the Province. This shall be achieved through advocating on (1) banning the use of single-use plastics; (2) regulating the use of paper-based disposables; (3) promoting the use of reusables; and (4) driving positive behavioral change among consumers by shifting away from “throw-away” to “zero-waste” lifestyle.

In the Province of La Union, the single use, carry out plastic bags, sando bag and/or plastic labo as well as styrofoam or styrophor are rampantly used to carry, transport or package goods and are usually given to consumers for free in stores which all the more contribute to the “throw-away” attitude of its users. Based on the Waste Analysis and Characterization Study (WACS) conducted in selected towns in the province, non-biodegradable plastic bags as well as styrofoam/styrophor contribute largely to the volume of city/municipal wastes being disposed daily and take a long time to degrade in soil and contribute to air, water and soil pollution.

In order to conserve and safeguard the environment, there is a need to discontinue the use of non-biodegradable plastic bags and polystyrene products, and consequently shift to sustainable reusable materials. In order to discourage and reduce the use of these types of plastic bags

in the province, it is deemed necessary to prohibit such use and introduce alternative materials that are more environment friendly. The Provincial Government of La Union shall lead in moving the Province of La Union away from dependence on SUPs in full recognition of the harm that these materials inflict on its environment and its people. The best way to implement such policy is to seek the involvement of the business sector and the citizens as well in protecting our environment wherein the business sector shall initiate or adopt innovative processes that shall recycle and reuse materials, reduce waste and prevent pollution.

The Local Government Unit shall have the primary responsibility in the effort to decrease the percentage of plastic wastes produced within their respective territorial jurisdiction. Moreso, the local Government shall focus on the best interest of the health and welfare of the people which should impose the regulation, imposition of an environmental protection fee to: a) address the “throw-away” attitude of consumers on disposable products; b) ban single-use plastics and discourage the use of disposable materials; 3) mainstream the reuse/refill system to phase out sachets and be replaced by alternative delivery systems; 4) mainstream the use of reusable bags, food and beverage containers, and cutleries; 5) invite the active participation of the citizenry in activities that promote a clean and sustainable environment; and 6) establish greater responsibility from establishments using single-use plastics and other disposable materials by determining their obligations as well as providing them incentivized scheme program.

The National Solid Waste Management Commission (NSWMC) Resolution No. 1363 series of 2020 directs the DENR to prepare and implement the banning of the use of unnecessary single-use plastics (SUPs) by National Government Agencies (NGAs), Local Government

Units (LGUs) Offices and all other Government Controlled Offices as a solid waste avoidance and minimization strategy. Furthermore, the National Solid Waste Management Commission (NSWMC) issued the resolution No. 1428 s. 2021 declaring the plastic soft drink straw and plastic coffee stirrer as non-environmentally acceptable products. Its because it was found in the study of Industrial Technology Development Institute – Department of Science and Technology that these are the primary contributors to aquatic and human toxicity.

Due to awareness on the negative effects of single-use plastics in the environment, many Filipinos showed willingness to buy products in recyclable or refillable containers rather than sachets and they have even expressed willingness to change their behavior and use recyclables and refillable in lieu of single-use plastics packaging. Various results from a nationwide survey showed that majority of Filipinos are aware of the problem concerning plastics and in fact support the idea of regulating single-use plastics which strongly suggests a window of opportunity to pass key legislation on plastics and majority of the respondents opted for banning single use plastics to address the problem of single-use plastics. There is a significant growing number of cities and municipalities nationwide that have passed ordinances that ban shopping bags and other single-use plastics and evidence have shown that plastic ban coupled with proper enforcement is an effective source reduction strategy.

In La Union, all of the 20 component LGUs have enacted their own plastic ordinances however they vary in terms of enforcement. Some of these ordinances pushes for the prohibition while others are on the side of regulation. Hence, the Provincial Ordinance No. 426-2023 “ Enacting the Single-Use Plastics (SUPs) and other Reusable and Disposable

Materials Code of the Province of La Union" or also known as the " 2023 Plastic Code of La Union" was enacted for a unified policy in the Province. The Plastic Code of La Union shall promote the use of reusables, regulate the use of compostables, and prohibit the use of plastics thus reducing the volume of plastic wastes at source. All of the 20 component LGUs must adopt to the Plastic Code of La Union and shall continue in promoting strategies on reduction and minimization of waste at source. The PGLU through the PG-ENRO shall ensure that the provisions of the Plastic Code are well-communicated, implemented and enforced to all sectors.

#### *Promotion on the Use of Reusable Materials*

In the Plastic Code of La Union, "reusables" such as the use of recyclable, reusable and/or biodegradable alternative packaging materials shall be promoted as the best option. These include but not limited to reusable woven bags (bayong), cloth bags, rattan baskets, shopping bags made from sewed juice tetra pack or recycled waste paper, and other bags made out of biodegradable materials (e.g., banana leaves, taro leaves, water lily, corn stalk, bamboo ("silag") etc) as alternative packaging materials. Individuals are advised to bring his/her own water tumblers and eco-bag when traveling to reduce the urge to buy PET bottles and plastic bags. Workers especially the office employees shall bring his/her own reusable water tumblers, eco-bags, plates, utensils, drinking glasses/mugs, and food containers at work. Schools shall institutionalize the utilization of reusable materials by issuing memoranda or directives to encourage employees and students to bring their own water tumblers, plates, mugs, food containers and other eating utensils. Buyers shall bring their own containers and reusable bags (preferably compartmentalized market bags to easily separate the

items bought) when going to the establishments or market. SuLung Bayong Project shall be promoted through the initiative of PG-ENRO as well as Bring Your Own Bag/Container (BYOB/BYOC) program shall be promoted by LGUs in public markets and shall be adopted by business establishments, supermarkets, convenient stores, and department stores. Consumers shall bring their own reusable food containers and beverage containers for take-out foods/beverages. Cooked foods traditionally sold in the school canteens or within the government institution premises shall utilize eco-friendly materials for packaging and distribution. Native Filipino foods traditionally made with eco-friendly packaging shall be served during meetings and other occasions within the government institutions. Water refilling stations and juice/coffee counter shall be made available in offices and classrooms. Reusable straws such as bamboo straws shall be encouraged. Customers who bring their own bags/containers for purchased/take-out goods/foods shall be given incentives or discounts by the establishments. Relevant retailers are encouraged to formulate its own mechanics for its incentive schemes that will generate goodwill and patronage from its loyal customers. Buyers who fail to bring their own bag may opt to buy reusable bag/biodegradable bags made available in the respective checkout counters of the stores, purposely for multiple reuse or at the entrance of public or private markets. Business establishments shall redesign and innovate their packaging or bags/containers and/or products and initiate plastic-free delivery for take-out and transport of their products according to eco-design principles as a waste minimization strategy. Courier services are encouraged to shift to sustainable biodegradable and reusable packaging materials.

### *Regulation on the Use of Paper-Based/ Biodegradable Disposables*

The banning of plastics may consequently result to the increase demand and usage of disposable paper products, thus, this prompted the need to regulate the paper-based products to prevent the anticipated negative impact on the ecosystem such as forest degradation and pollution. The regulation on the use of paper-based/ biodegradable disposables aim to change the consumer behavior towards shifting from “throw-away” habits to a lifestyle that is anchored on 3R's of waste management, namely, reduce, reuse and recycle. This regulation aims to reduce the generation of waste from biodegradables encouraging the consumers to use reusable materials. Food establishments/caterers/suppliers shall utilize their reusable own plates, utensils, and drinking glasses for dine-in customers. Otherwise, food establishments/caterers/suppliers shall use compostable/reusable containers for take-out purposes only with the corresponding additional charges. Compostable straws and edible straws shall be used during dine-in and take-out foods with corresponding additional charges. The additional charges on these materials shall be posted in the menu list and at the counter for the information of the customers.

### *Prohibition in the Use of Single-Use Plastics*

Pursuant to the Plastic Code of La Union, the single-use plastics and polystyrene products (styrofoam) are prohibited in the Province of La Union. This regulation shall be imposed among individuals, consumers, vendors, suppliers, traders, distributors, and service providers in all business establishments, general stores, industries, institutions, public markets, recreation and service centers within the territorial jurisdiction of the Province of La Union.

The Plastic Code of La Union encompasses the following prohibitions on (1) using plastic bags and styrofoam to customers as primary packaging materials on wet and dry goods; (2) using styrofoam cups, plastic cups, drinking straw, plastic used for juices, soft drinks, and other cold drinks like “palamig and gulaman” as well in “taho;” (3) using of plastic or styrofoam for re-packaging of all kinds of vegetables. Re-packaging of salt, sugar, pepper, beans, flour, and the like in “tingi tingi” basis is exempted; (4) using styrofoam as food container. Styrofoam used as ice chests, insulators, and/or for any similar purposes may be allowed; (5) using of plastic wares or utensils such as forks, spoons, knives, plastic cups and styrofoam cups for dine-in and take out food; (5) establishment of factories and those engaged in the manufacture and distribution or use of non-environmentally acceptable packaging materials and (4) using plastic bag, plastic wares and styrofoam to customer as secondary packaging materials on wet goods, frozen food contained in plastic wraps, vacuum packed and pouches. Wet goods that are not pre-contained in plastic pouches, wraps or bags are preferably to be contained in customer supplied “reusable” pre-cleaned and sanitized hard plastic containers. Old newspapers or any papers with prints are not allowed for wrapping wet goods such as fish, meat, and the like. Stores and other retail establishments shall make/use any alternative legally compliant packaging material available for customers at no cost or at reasonable cost at the point of sale such as but not limited to the materials, in lieu of single-use plastics.

In the Plastic Code, incentivized scheme shall be set-up or enhanced to motivate establishments, schools, and other institutions to reduce their plastic footprint. These will recognize, and award them for their outstanding management of solid wastes.

LGUs are encouraged to promote interventions on residual wastes with potential for diversion such as but not limited to making of ecobricks or pavers/hollow blocks mixed with shredded plastics which can be used as an alternative material for construction. Recycling of PET bottles into planters, floaters, etc as well as plastic wrappers/sachets to bags and other creative recycling crafts/novelty items shall be promoted as community-based livelihood on plastic recovery programs. LGUs are encouraged to forge partnerships with companies thru the Extended Producer's Responsibility.

LGUs shall strengthen the role of junk shops in the recovery of the paper wastes and other recyclable materials and shall support industries and organizations engaged in the production of the alternative materials such as but not limited to the bamboo farmers and businesses involved in paper recycling or upcycling of waste materials, making alternative packaging materials such as reusable woven bags (bayong), cloth bags, rattan baskets, shopping bags made from sewed juice tetra pack or recycled waste paper, and other bags made out of biodegradable materials (e.g., banana leaves, taro leaves, water lily, corn stalk, bamboo ("silag") etc) shall be utilized as alternative packaging materials. Livelihood programs on the development of these materials shall be also supported or initiated by the PGLU. The Sulong Bayong Project: Production of Eco-Friendly Packaging through a Community-Based Livelihood Project shall be implemented. This project, in support to the 2023 Plastic Code of La Union aims to develop eco-substitutes or alternative packaging for single-use plastics such as but not limited to hand-woven native bags made of indigenous materials through a community-based livelihood project for the vulnerable sectors in the province. Furthermore, the "Sustainable Palengke" of the Lupon ng mga



Indibidwal na Nangangalaga sa Kalikasan (LINK), an eco-awareness drive that seeks to educate buyers and sellers to reduce the excessive usage of single-use plastics in the local market in the Philippines and in aid of the implementation of the 2023 Plastic Code of La Union, shall be adopted and implemented provincewide. These PGLU's bayong advocacy and LINK's Sustainable Palengke are just one of the sustainable solutions to address the adverse impacts of wasteful consumption, climate change, and land pollution along with the increasing unemployment rate due to the pandemic.

LGUs shall also promote composting of biodegradable wastes and shall empower the Barangays with the primary responsibility in the collection and management of biodegradable wastes through the provision of equipment such as bio-shredders, Material Recovery Facilities with composting facility and warehouse for recyclable wastes, Material Recovery Vehicles shall be given to the barangays to support the ordinance.

In terms of enforcement and monitoring, a task force shall be created. Eco-rangers will be hired and deputized in each LGU to conduct daily inspection and monitoring to ensure the compliance of the establishments and institutions with the provisions of the ordinance and shall utilize the POVR following the provisions under the POVR Ordinance. Each eco-ranger shall also conduct IECs in communities, schools, and other institutions. Each eco-ranger is required to submit a monthly accomplishment report to the PG-ENRO. An environmental education and enforcement unit composed of one (1) SG 18, one (1) SG 15 and one (1) SG 11 shall be created under the PG-ENRO to conduct deputation training among volunteers in all barangays and ensure the implementation of the Code.

This Plastic Code also covers social and behavioral change communication strategies and research and development on areas related to plastic pollution and its mitigating measures. Close coordination with and support from concerned agencies such as but not limited to DENR, DILG, DEPED, DOST, CHED, PENRO, DOH, DA, PIA, DTI, community organizations, and private sectors (NGOs, Junkshops) shall be sought for the implementation and assessment of this ordinance.

Any business establishments and institutions through its registered owner/operator and/or proprietor that violate any of the prohibited acts stated above shall be punished through the imposition of the following penalties.

Pursuant to Section 57 of R.A. 9003 otherwise known as the Ecological Solid Waste Management Act of 2000 provides that the commercial and business sector shall be encouraged to initiate, participate and invest in integrated ecological solid waste management projects, to manufacture environment friendly products, to introduce, develop and adopt innovative processes that shall recycle and reuse materials, conserve raw materials and energy, reduce waste, and prevent pollution, and to undertake community activities to promote and propagate effective solid waste management practices.

The social impacts of these source reduction strategies include having disciplined stakeholders, improved health condition, cleanliness and orderliness of surroundings, and less expense for residents, commercial and industrial establishments, and eventually of the LGUs concerned.

Table 7.1. Source Reduction Programs to be Implemented by LGUs in the Province

Municipality/ City	Source reduction program	Sectors to target	Materials to be addressed	Methods	Estimated Diversion	Caps
Agoo	Regulation of plastic usage	Household Establishment Public Market	Single-use plastics	<ul style="list-style-type: none"> <li>• Issuance of ordinance</li> <li>• Encourage the use of bayong</li> </ul>	No data	Limited Manpower
Aringay	Regulation of plastic usage	Household Establishment Public Market	Single-use plastics	<ul style="list-style-type: none"> <li>• Issuance of ordinance</li> <li>• Encourage the use of bayong</li> </ul>	No data	Limited Manpower
Bacnotan	Strict Implementation of Environment Code, Anti-littering Ordinance, Pollution Control Law, RA 6969, RA 9275, RA 8749, "No segregation, No Collection" Policy	Industrial	Construction waste (tiles, paints, C-B Used Oil)	-	60%	Limited Manpower
	Composting in every home No segregation, No Collection Policy Program	Residential	Diapers Bulbs Batteries (OP, CAR, RADIO) Plastic Bag Medicine Bottle	-	80%	Limited Manpower
	Regulated Use of Plastic Bag	Commercial	Plastic (Sando Bag) Styrofoam Tetra Pack Parlor Waste (hair) Fish Scale	-	70%	Limited Manpower
	Composting in Every School Program No segregation, No collection Policy Program  Mandatory segregation receptacle Strict Implementation of Env'l laws	Institutional	Plastic bag Styrofoam Tetra Pack Bamboo Stick Paper plates Plastic (Fork & Spoon)	-	80%	Limited Manpower
	No segregation, No Collection Policy Program Mandatory Segregation Receptacles – Bio Non-bio Special Waste	Hospital/Clinics	Syringe, Expired medicines, Hospital waste, Dextrose, Plastic bag, Gauze,	-	75%	Limited Manpower

			Medicine Bottle			
Bagulin	Regulation of the use of materials that contribute to the volume of residual wastes such as plastics and Styrofoam Segregation at source 3Rs Composting Green purchasing	Household Establishment Public Market	Single-use plastics	<ul style="list-style-type: none"> <li>• Issuance of ordinance</li> <li>• Encourage the use of bayong</li> <li>• IECs</li> </ul>	No data	Limited Manpower
Balaoan	Non-collection by the municipality of biodegradable wastes  Composting in Every Home  Collection of residual and special-hazardous wastes No Segregation, No  Collection Policy Program	Residential	Kitchen waste Diapers Bulbs Batteries (CP, CAR, RADIO) Plastic Bag Medicine Bottle Wine bottles		70%	Limited Manpower
	Non-collection by the municipality of biodegradable wastes  Composting of bio-wastes  Collection of residual and special-hazardous wastes  No Segregation, No Collection Policy Program	Commercial Business Establishments	Plastic (Sando Bag) Styrofoam Special-hazardous wastes		25%	Limited Manpower

	<p>Non-collection by the municipality of biodegradable wastes</p> <p>Composting in Every School Program</p> <p>No Segregation, No Collection Policy enforced</p> <p>Mandatory Segregation in Receptacles</p> <p>Strict Implementation of Environmental laws</p> <p>Mandatory Segregation in Receptacles</p> <p>Strict Implementation of Environmental laws</p>	Institutions	<p>Plastic Bag</p> <p>Styrofoam</p> <p>Tetra Pack</p> <p>Bamboo Stick</p> <p>Paper Plates</p> <p>Plastic (Fork &amp; Spoon)</p>		20%	Limited Manpower
	<p>Non-collection by the municipality of biodegradable wastes</p> <p>Composting of bio-wastes</p> <p>No Segregation, No Collection Policy enforced</p> <p>No Segregation, No collection, Policy Program</p> <p>Mandatory Segregation Receptacles</p>	Hospital/Clinics	<p>Syringe</p> <p>Expired medicines</p> <p>Hospital waste</p> <p>Dextrose</p> <p>Plastic bag</p> <p>Gauze</p> <p>Medicine bottle</p>		20%	Limited Manpower
Bangar	<p>Strict Implementation of Environmental Code</p> <p>Anti-littering Ordinance, Pollution Control Law, RA 6969, RA 9275, RA 8749</p> <p>"No Segregation, No Collection" Policy</p> <p>Composting in Every Home</p> <p>No Segregation, No Collection Policy Program</p>	<p>Industrial</p> <p>Household</p>	<p>Construction Waste (tiles, paints, C-B)</p> <p>Used Oil</p> <p>Diapers</p> <p>Bulbs</p> <p>Batteries (CP, CAR, RADIO)</p> <p>Plastic Bag</p>		<p>60%</p> <p>80%</p>	Limited Manpower

	<p>Green Purchasing</p> <p>Regulated Use of plastic bag</p> <p>Enforcement of Provincial Ordinance No. 030 - regulating the sale and use of plastic bags and styrofoam</p> <p>Use alternative of packaging material</p> <p>Banning the use of drinking straw as well as styrofoam cups</p> <p>Composting in Every School Program</p> <p>No Segregation, No Collection Policy Program</p> <p>Mandatory Segregation Receptacle</p> <p>Strict Implementation of Env/L laws/ Ordinance Code</p> <p>No Segregation, No collection, Policy Program</p> <p>Mandatory Segregation Provision of Receptacles for Biodegradable, Recyclable, Residual, and Special Waste</p>	<p>Commercial Establishments</p> <p>Institutions</p> <p>Hospitals/ Clinics</p>	<p>Medicine Bottle</p> <p>Sando Bag)</p> <p>Styrofoam</p> <p>Tetra Pack</p> <p>Parlor Waste (hair)</p> <p>Fish Scale</p> <p>Plastic Bag</p> <p>Styrofoam</p> <p>Tetra Pack</p> <p>Bamboo Stick</p> <p>Paper Plates</p> <p>Plastic (Fork &amp; Spoon)</p> <p>Syringe</p> <p>Expired medicines</p> <p>Hospital waste</p> <p>Dextrose</p> <p>Plastic bag</p> <p>Gauze</p> <p>Medicine bottle</p>		<p>70%</p> <p>80%</p> <p>75%</p>	
Bauang	<ul style="list-style-type: none"> <li>Segregation at source</li> <li>Practice of 3Rs (reduce, reuse, recycle)</li> <li>Composting in every home, school, and institution</li> <li>Regulation in the use of materials</li> </ul>	<p>Residential</p> <p>Commercial Establishments</p> <p>Institutions (Schools, offices, churches, religious establishments)</p>	<p>Plastic bags</p> <p>Diapers</p> <p>Bulbs</p> <p>Batteries</p> <p>Medicine bottle</p> <p>Styrofoam</p> <p>Multiple packaging materials like tetrapacks</p>			Limited Manpower

	<p>that contribute to residual wastes</p> <ul style="list-style-type: none"> <li>• Mandatory use of segregation receptacle</li> <li>• No segregation, no collection policy</li> </ul>					
Burgos	<p>Regulation of plastic usage</p> <p>Segregation at source</p>	<p>All Sector</p> <p>All Sector</p>	<p>Plastic Bags (Single Use)</p> <p>Biodegradable wastes</p>	<p>No data</p>	<p>No data</p>	<p>Limited Manpower</p>
Caba	<p>Regulation of plastic usage</p> <p>The use of "bayong" and/or eco-bags shall be promoted as substitute for plastic bags, especially when purchasing goods in market</p>	<p>Business Establishment</p> <p>Offices</p> <p>Residential</p>	<p>Styrofoams (cups, ice chest)</p> <p>Plastic bottles, cups, utensils, containers</p> <p>Sando bags</p>	<p>Enactment of ordinance regulating the use of plastics</p> <p>Promoting the re-use of such or use of paper bags / eco-plastic</p>		<p>Limited Manpower</p>
Luna	<p>Adoption of the Plastic Regulation Ordinance of the PGLU</p> <p>Reduction of the use of non-recyclable materials</p> <p>replacing disposable materials and products with reusable materials and products</p> <p>reducing packaging</p> <p>increasing the efficiency of the use of paper, cardboard, glass, metal, and other materials</p>	<p>Household</p> <p>Food Establishment</p> <p>General stores</p> <p>Industries</p> <p>Institutions</p> <p>Public Market</p> <p>Recreation centers</p> <p>Service centers</p> <p>Slaughterhouse</p> <p>Special Waste Generators</p>	<p>Single-use plastics</p>	<p>Enactment of ordinance encouraging the use of environment-friendly products/materials (i.e., woven bayong, recycled notebooks, bamboo straws, reusable cups/bottles)</p> <p>Collection of fees for residual waste collection</p> <p>Systematic classification and segregation of waste into 4 categories – biodegradable, recyclables, residuals, and special wastes</p> <p>"No segregation, no collection" policy Ordinances will be created</p>	<p>79%</p> <p>53%</p> <p>39%</p> <p>87%</p> <p>90%</p> <p>88%</p> <p>86%</p> <p>87%</p> <p>40%</p> <p>49%</p>	<p>Limited Manpower</p>

				and enacted to support these strategies. Regular conduct of Information, Education, and Communication.		
Naguilian	<ul style="list-style-type: none"> <li>• use of basket in going to the market,</li> <li>• consumers to preferably buy products in environmentally acceptable packaging,</li> <li>• consumer to preferably patronize business establishments who use biodegradable materials,</li> <li>• recycling of wastes,</li> <li>• composting,</li> <li>• re-use,</li> <li>• selling factory returnable wastes</li> </ul>	Household Establishment Public Market	Single-use plastics	<ul style="list-style-type: none"> <li>• Issuance of ordinance</li> <li>• Encourage the use of bayong</li> <li>• Impose the collection of fees on residual waste</li> </ul>	No data	Limited Manpower
Pugo	<ul style="list-style-type: none"> <li>• Provision of color-coded receptacles in every households</li> <li>• Provision of color-coded bins in selected public places especially in plazas and cemeteries which will be manned by tanods and barangay health workers and other agencies concerned in the area.</li> </ul>	Household Public Areas Public Market Commercial Establishments	Single-use Plastics Biodegradable Wastes	<ul style="list-style-type: none"> <li>• Encourage the use of bayong</li> </ul>	No data	Limited Manpower



	<ul style="list-style-type: none"> <li>• Separate containers will be provided in market and transient vendors</li> <li>• Mandatory composting</li> <li>• Massive IECs</li> <li>• Enforcement through incentives for abiding and fines and penalties for non-compliance</li> </ul>					
Rosario	Regulation of plastic usage	Household Establishment Public Market	Single-use plastics	<ul style="list-style-type: none"> <li>• Issuance of ordinance</li> <li>• Encourage the use of bayong</li> <li>• Impose the collection of fees on residual waste</li> </ul>	No data	Limited Manpower
City of San Fernando	Mandatory waste segregation at source	Whole City	biodegradables, recyclables, residuals and special wastes	Classification into 4 types of waste	69.8	Limited Manpower
San Gabriel	Regulation of plastic usage  "Bayong" (woven-bag/basket) project  Segregation at Source	All Sector  All Sector  Residential	biodegradables, recyclables, residuals and special wastes	<ul style="list-style-type: none"> <li>• Encourage the use of bayong</li> </ul>	No data	Limited Manpower
San Juan	Regulation of plastic usage  reuse of materials, recycling, recovery of recyclables and other factory returnables and then the treatment of special wastes	Household Establishment Public Market	Single-use plastics	<ul style="list-style-type: none"> <li>• Encourage the use of bayong</li> </ul>		Limited Manpower
Santo Tomas	Regulation of plastic usage	Household Establishment Public Market	Single-use plastics	<ul style="list-style-type: none"> <li>• Issuance of ordinance</li> <li>• Encourage the use of bayong</li> <li>• Impose the collection of fees on residual waste</li> </ul>	No data	Limited Manpower

Santol	Reduction of plastic usage Bayong (woven-bag/ basket) project Segregation at source	All sectors	Single-use plastics	Strict implementation of the municipal ordinance regulating the use of plastics Promoting the reuse of such and the use of bayong and / or eco bags  Wastes segregation prior to collection  Conversion of recyclables into eco-products and biodegradable/ compostable into organic fertilizer		Limited Manpower
Sudipen	Intensification of organic composting through hands on demonstration composting methods  Promotion and integration recycling programs  Development of network linkages for recyclable products  Implementation of laws and ordinances that mandates regulation on the use of residual wastes such as plastic bags and Styrofoam  Information on the handling and storage of special/hazardous waste	Residential  Barangay & Schools	kitchen and garden waste and agricultural wastes	<ul style="list-style-type: none"> <li>Encourage the use of bayong</li> </ul>	No data	Limited Manpower
Tubao	Regulation of Plastic usage  "Bayong Project" (woven bag/basket)	All sectors  All sectors (H- establishments)	Plastic bags (single use)  Plastic bags (single use) and grocery bags	<ul style="list-style-type: none"> <li>Encourage the use of bayong</li> </ul>	No data	Limited Manpower

	Segregation at source	Households, establishments, institutions	Residuals will only be thrown to the compost pit			
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*\*Excerpted from the approved 10-Year Solid Waste Management Plans of LGUs*

## 7.2 Collection

As presented in Chapter III, collection scheme are already in place in all of the component LGUs hence these shall be maintained and enhanced. All of the LGUs have their own garbage collection vehicles, have identified collection points and set scheduled collection. To further improve the waste collection in the Province, this plan targets the following programs and projects, to wit;

- *Ensure 100% waste collection coverage in all of the component LGUs*
- *Introduce creative programs and technologies to facilitate better plastic recovery (i.e., plastic bottle recycling sculpture or ecobins and the plastic bottle recycle vendo machine)*
- *Innovate collection apparatus or equipment focusing on specific or emerging concerns of waste management, for example, beach cleaning using garbage rollers and surf rakes to help in removing marine litters/debris*
- *Mobilize the Barangay Solid Waste Management Committees to monitor proper segregation and backyard composting at the household level and ensure 100% waste collection in their jurisdictions*

- *Engage the community to take part in waste diversion strategies through the ecobricking project*
- *Partner with local junkshop operators in promoting community-based waste diversion/reduction intervention such that of the “Lata Mo, Bigas Ko”*
- *Partner with private sectors or obliged companies to boost plastic recovery and waste diversion in the Province*
- *Strengthen solid waste management initiatives in tourism areas and public areas (i.e., parks and plazas) through the installation of plastic bottle recycling sculptures or eco-bins to prevent littering in tourism areas*

## 7.21. Overview

As the enabling local government unit, the Provincial Government shall provide the necessary support and assistance to its component LGUs to ensure compliance to the provisions of RA 9003 such as on the segregated collection of waste.

The barangay LGU, whose responsibility is on the collection of biodegradable and recyclable wastes must be equipped with the necessary facility and equipment such as but not limited to Materials Recovery Facility, Composting Facility, Shredders for biodegradable, plastic and glass. The Provincial Government of La Union has provided garbage trucks to some LGU Barangays in aid to the collection of wastes and bio-shredders and dual drum composters for the proper management of biodegradable wastes.

On the other hand, the city/municipal LGU shall be responsible for the management of residual and special wastes. Specific strategies for waste collection in each of the LGUs of the province differ depending on what is effective and operational per LGU. The PSWMB shall require the constituent LGUs to conform to the minimum standards required for collecting, transporting and handling solid waste.

Through the Search for the Cleanest, Safest, and Greenest LGU of the PGLU, several collection vehicles or dump trucks as well as hazardous waste transporter has been awarded to winner LGUs.

## 7.22 Collection Equipment and Routes

The municipal and city LGUs shall continue to use their present collection vehicles. Most of these vehicles are government-owned and are used daily to cover the regular collection routes of the LGU, which includes the residential, commercial, institutional areas and the market. The schedule for replacing these vehicles or getting additional units to supplement the LGU's fleet shall be discussed in the individual SWM Plans of the municipalities and city. Factors to consider in selecting a collection vehicle are:

- Safety requirements
- Appropriate size and capacity for the intended load (volume and type of waste to be loaded)
- Local capacity to maintain the vehicle (technical capability and availability of spare parts)
- Over-all cost effectiveness
- Versatility of the vehicle to be used for other purposes

Though most of the LGUs have their own garbage collection vehicles and schedules, the Province together with the respective LGU shall monitor and ensure that all of the barangays are covered of the collection coverage. The component LGUs shall expand its collection coverage. They also keep records on collection fees.

**Table 7.2 Current and Projected Collection Strategy per Municipality**

Municipality/ City	Equipment		Collection Area (No. of barangays)		Collection Service	Collection Type
	Current	Projection	Current	Planned		
Agoo	4 dumptruck 1 backhoe 1 bulldozer 1 payloador	1 compactor 1 dumptruck 2 shredder 1 biodigester	49	49	Admin	Segregated Collection
Aringay	2 dumptrucks 1 backhoe	1 bulldozer 1 shredder	2	24	Admin	Segregated Collection
Bacnotan	2 garbage trucks 1 payloador 1 backhoe 1 bulldozer	1 glass pulverizer 1 backhoe 2 garbage trucks	47	47	Admin	Segregated Collection
Bagulin	1 dumptruck	1 payloador 1 bulldozer 1 mini dumptruck	5	10	Admin	Segregated Collection
Balaoan	2 dumptrucks 1 payloador 2 backhoes 4 closed garbage receptacle (trailer type) 1 bioreactor machine 1 shredder	2 backhoe 4 dump trucks	21	36	Admin	Segregated Collection
Bangar	1 garbage truck 1 backhoe 1 bulldozer 1 dump truck	1 backhoe 1 garbage truck	33	33	Admin	Segregated Collection
Bauang	4 dumptrucks 1 compactor	1 dumptruck 1 compactor	19	39	Admin	Segregated Collection

	truck 1 backhoe loader 1 backhoe crawler 1 bulldozers					
Burgos	1 mini- dumptruck 1 backhoe 1 hydraulic excavator and dozer	1 dumptruck 1 shredder	2	12	Admin	Segregated Collection
Caba	2 dumptrucks 1 backhoe 1 bulldozer	1 backhoe 1 dumptruck	4	17	Admin	Segregated Collection
Luna	2 mini- dumptrucks 1 low bed truck 1 backhoe 1 compactor	4 dump trucks	8	40	Admin	Segregated Collection
Naguilian	1 crawl dozer 3 dumptruck 1 bulldozer 1 backhoe 1 payloader	1 crawl dozer 3 dumptruck 1 bulldozer 1 backhoe 1 payloader	4	37	Admin	Segregated Collection
Pugo	2 dump trucks 1 backhoe 2 shredder	1 excavator 1 dump truck 1 compactor 1 plastic shredder 1 hammer shredder 1 backhoe	3	14	Admin	Segregated Collection
Rosario	4 dumptrucks 1 backhoe 1 bulldozer	1 backhoe 1 bulldozer 2 dumptrucks	8	25	Admin	Segregated Collection
City of San Fernando	21 dumptrucks 1 bulldozer 1 payloader/ crawl dozer 1 landfill compactor 1 hydraulic excavator 2 mechanical composting		46	59	Admin	Segregated Collection

	drums 2 shredders					
San Gabriel	2 dump truck 1 5-in-1 heavy equipment 1 shredder		3	3	Admin	Segregated Collection
San Juan	5 dumptrucks 1 backhoe 1 payloader	2 backloader 3 dump trucks 1 compactor 1 plastic-glass shredder	6	41	Admin	Segregated Collection
Santo Tomas	1 dumptruck 1 garbage compactor	None	19	24	Admin	Segregated Collection
Santol	1 mini- dumptruck	1 dumptruck	11	11	Admin	Segregated Collection
Sudipen	2 mini- dumptruck 1 payloader	1 crawler tractor 1 trailer type sealed container	9	17	Admin	Segregated Collection
Tubao	2 dumptrucks 1 backhoe	2 open dumptrucks	6	18	Private hauler	Segregated Collection

*\*Excerpted from the approved 10-Year Solid Waste Management Plans of LGUs*

### 7.2.3. Private Collection Service

Private collection service shall not be discouraged nor prevented as long as cost effectiveness is achieved. Clearly defined scope, specifications and performance standards on the side of contractor and effective monitoring and control on the part of the contracting party have to be understood and agreed upon. The basic requirement shall be collection of segregated waste, and non-mixing of segregated wastes. Appropriate disposal procedures should also be observed.

### 7.2.4. Storage and Setout

With reference to the NSWMC Resolution No. 1380 series of 2020 “Adopting the Guidelines on the Waste Analysis and



Characterization Study and its Related Manual," the prescribed color coding of waste bins/bags according to its classification shall be as follows: Green for Biodegradables, Blue for Recyclables, Red for Household Special Waste and Black for Residual Wastes.

For biodegradable wastes, mandatory backyard composting is recommended. In the markets, a drop-off type of waste collection is suggested to instill discipline and responsibility with the waste generators.

For residual wastes, there shall be a designated collection points in each barangay/ areas and scheduled collection of each type of wastes.

It was suggested that the set-out of waste be scheduled during lean or non-rush hours, especially for collection within central business districts or near schools and offices.

Through the partnership project with SOILTECH, the PG-ENRO provided garbage bins to Barangay Duplas in San Juan. Partnership project, like this, shall be explored and continued to assist Barangay LGUs in their implementation of solid waste management programs.

## **7.25. Segregated Recyclables**

Management of recyclable materials shall be done by the waste generators themselves, either through bringing them to the MRF or selling to junkshops.

Though all of the component city/municipal LGUs have their own central Materials Recovery Facility as well as the barangay LGUs with their MRFs, the Province shall continue to monitor and ensure that these facilities are appropriate in terms of design, location, capacity, and number as well as its operational management. Establishments and institutions such as schools are also encouraged to establish their own MRFs. The Province shall provide necessary assistance to barangays and schools such as introducing and piloting modern and grass roots strategies and solutions such that of construction of eco-MRF, a structure made out of ecobricks.

Junkshops play an important role in the recovery of recyclables. The junkshops' increasing importance in effective solid waste management and growing economic contribution call for a serious attention from the government. Substantial support of the government for these enterprises is the first step in bridging the gap in the solid waste management system and enhancing the effectiveness of junkshops. Partnership project with junkshops promoting community-based waste diversion/reduction intervention such that of the "Lata Mo, Bigas Ko" shall be conducted in support to the junkshop operators in the Province to sustain their operations. Waste generator will have the responsibility to segregate their recyclable wastes and sell to junkshops or deliver to their respective MRF.

Aligned with the #KalikasanNaman Campaign of the Provincial Government of La Union (PGLU) focusing on strengthening solid waste management initiatives in tourism and public areas in the Province, plastic bottle recycling sculptures or eco-bins shall be installed in tourist spots and public areas (i.e., parks and plazas) to

enable the proper segregation of wastes and prevention of littering in tourism areas.

#### **7.26. Segregated Compostables**

Composting at source shall be mandatory so that there shall be no collection of compostable wastes. All sectors in the community shall practice, whichever appropriate, urban domestic composting, rural composting, farm waste composting, institution composting, and composting of the biodegradable components of market waste. Backyard composting shall be mandatory among households along with the regular monitoring of Barangay LGU to ensure that compost pits in their jurisdiction are well-managed. Open burning especially of agricultural wastes shall be prohibited. Most of the component city/municipal LGU have their own central composting facility. Composting facilities, equipment such as bio-shredders and composters shall be provided to barangays to increase the number of practitioners of composting. The PG-ENRO in partnership with DOST Regional Office and La Union Provincial Office have provided bio-shredders and dual drum composters to selected LGU-Barangays and Provincial Nurseries to aid in the management of biodegradable wastes.

Composting in all sectors shall be monitored through the regular joint monitoring of PG-ENRO and DENR-EMB Region 1 to ensure that composting activities are done correctly.

#### **7.27. Mixed Solid Waste /Residuals**

Since all of the component LGUs have their own garbage collection vehicles, designated collection points and scheduled

collection, the Province together with the LGU shall monitor and ensure that all of the barangays are covered in the collection coverage. The component LGUs shall expand its collection coverage.

To do this, one of the suggested strategies is to authorize willing barangay LGUs to collect residual wastes within their jurisdiction. The barangay LGU shall be given a corresponding subsidy for the additional manpower and equipment needs for the extra load. The municipal/city LGU can then extend their collection coverage to barangays or areas which do not have access to a barangay or municipal garbage collection service.

The Province shall also introduce modern strategies in managing residual wastes especially of that of with potential for diversion such as the plastic wastes (i.e., candy, biscuit, and food wrappers, and plastic and sando bags) which can be formed and stuffed in plastic bottles, forming it into ecobricks. Ecobricking has been one of the modern strategies and grass roots solution addressing the problem on plastic pollution. Ecobricks are then formed into walls or fence, homes, planters, chairs, tables, etc. Ecobricking project of the PG-ENRO dubbed as Project ECHO was launched during the onset of COVID-19 period as it has the potential to provide a three-fold service for the environment, health and safety, and food security. This project shall be encouraged to be adopted in LGUs to prevent the dumping, and open burning, and promote waste diversion.

## 7.3. Segregation, Recycling, and Composting

### 7.3.1. Segregation

Having separate storage bins and receptacles will facilitate segregation at source. With reference to the NSWMC Resolution No. 1380 series of 2020 “Adopting the Guidelines on the Waste Analysis and Characterization Study and its Related Manual,” the prescribed color coding of waste bins/bags according to its classification shall be as follows: Green for Biodegradables, Blue for Recyclables, Red for Household Special Waste and Black for Residual Wastes.

Most of the LGUs have provided properly labeled and color-coded segregation bins in public areas such as in park and plazas. Most of the LGUs have also required transport operators to provide waste bins in all vehicles to prevent littering.

While “NO Segregation, NO Collection Policy” are already in place in all of the component LGUs, it is necessary that monitoring and strict enforcement shall be observed.

**Table 7.3.1. Segregation, Recycling, and Composting per City/Municipality**

Municipalities	Total Number of Barangays	No. of Barangays implementing Segregation at Source		No. of Barangays doing Composting and Recycling		No. of Operational MRF	
		Current	Planned	Current	Planned	Current	Planned
Agoo	49	49	49	49	49	68	49
Aringay	24	2	24	24	24	44	24
Bacnotan	47	47	47	-	47	135	300
Bagulin	10	5	10	10	10	10	12
Balaoan	36	21	36	21	36	36	36
Bangar	33	33	33	33	33	232	232
Bauang	39	39	39	39	39	39	39
Burgos	12	8	12	8	12	4	12
Caba	17	0	17		17	18	17

Luna	40	8	40	8	40	31	40
Neguilian	37	37	37	37	37	37	37
Pugo	14	14	14	14	14	33	55
Rosario	33	8	33	8	33	33	37
City of San Fernando	59	59	59		59	59	59
San Gabriel	15	15	15	15	15	16	31
San Juan	41	41	41	3	41	29	82
Santo Tomas	24	24	24	1	24	24	24
Santol	11	11	11		11	11	11
Sudipen	17	9	17	12	17	8	17
Tubao	18	6	18		18	36	18

*\*Excerpted from the approved 10-Year Solid Waste Management Plans of LGUs*

## 7.3.2 Recycling

With the amendment of RA 9003 through the approval of the Republic Act 11898 or also known as the Extended Producer Responsibility (EPR) Act, an environmental policy approach and practice that requires producers to be environmentally responsible throughout the life cycle of a product, especially its post-consumer or end-of-life stage, LGUs are encouraged to forge partnerships with obliged companies thru the Extended Producer's Responsibility. To strengthen and introduce modern strategy on plastic recovery in the Province align with the EPR Act, the PGLU shall initiate and pilot a project such that of installation of Buyback Center (plastic bottle recycling vending machine) in line with obliged companies' plastic recovery initiatives to be able to achieve and boost the shared goal of waste diversion of both the Province and the company.

LGUs are encouraged to promote interventions on residual wastes with potential for diversion such as but not limited to making of ecobricks or pavers/hollow blocks mixed with shredded plastics which can be used as an alternative material for construction. Recycling of PET bottles into planters, floaters, etc as well as plastic

wrappers/sachets to bags and other creative recycling crafts/novelty items shall be promoted as community-based livelihood on plastic recovery programs.

To promote upcycling among Kaprobinsiyaans, the “Basuramazing” Challenge, launched on CY 2021, shall be continued. This challenge aims to encourage individuals to do upcycling of wastes and showcase them by posting pictures of these items at their facebook account using the hashtag #ElyUpcycle and #basuramazing.

The LGUs shall collaborate with junkshops in their locality, so that they (junkshops) can assume the recovery and storage requirements of the LGU. As partners in the recovery of recyclables, LGUs shall require the junkshops in their locality to maintain a record of recovered recyclables and regularly submit to the LGU to be incorporated in the LGU's waste diversion data.

### **7.3.3. Composting/Management of Biodegradable Wastes**

All of the LGUs in the province of La Union shall have their own composting facilities. Backyard composting for all waste generators will be mandatory. For those who do not have the space for individual composting, cluster composting will be encouraged. Composting both at the domestic and barangay levels will be made mandatory for backyard gardens and agricultural production areas.

The Barangay LGU shall have the primary responsibility in ensuring that backyard composting in households are well-managed. Composting in all sectors shall be monitored through the regular

joint monitoring of PG-ENRO and DENR-EMB Region 1 to ensure that composting activities are done correctly.

Any acceptable composting technology that are already being done, tried and tested can be used, as long as these do not create undue disturbance to the environment and the people around the composting facility or site.

The composting program will also serve as vital component of the Province's program on organic agriculture. Investment will be made on capacity building on different composting technologies.

Composting facilities, equipment such as bio-shredders and composters shall be provided to barangays to increase the number of practitioners of composting or barangays doing composting. The PG-ENRO in partnership with DOST Regional Office and La Union Provincial Office have provided bio-shredders and dual drum composters to selected LGU-Barangays and Provincial Nurseries to aid in the management of biodegradable wastes. LGUs may partner with concerned agencies such that of the DOST, DA, and to the Senate Committee on Agriculture and Food and Committee on Environment and Natural Resources.

**Table 7.3.2. Strategies for Implementing and Monitoring per City/Municipality**

Municipality/ City	Strategies for implementation and monitoring
Agoo	<ul style="list-style-type: none"> <li>• "No Segregation, No Collection" policy with appropriate penalties</li> <li>• Provision of facilities like MRF, compost pit, collection point</li> <li>• Livelihood projects/ making eco-products out of recycled materials (i.e. charcoal products made of paper waste)</li> <li>• Assistance from institutions and organizations to promote recycling and livelihood projects</li> <li>• MRFs to cater recyclable materials</li> <li>• Provision of financial support from the Local Government Unit</li> <li>• Provision of composting bed or compost pit in their respective barangays and in disposal site for biodegradable</li> <li>• Provision of trainings in the barangays on the process of composting.</li> <li>• The barangays will keep record of the activities regarding solid waste management and monitor the same. Business &amp; industrial establishments are required to submit records or data of their accomplishments and likewise with the</li> </ul>



	<p>Schools and Colleges</p> <ul style="list-style-type: none"> <li>The municipal government of Agoo shall monitor the whole operation of the stakeholder to assure the proper implementation of programs on reduce and recycling or composting of biodegradable waste in the municipality.</li> </ul>
Aringay	<ul style="list-style-type: none"> <li>An ordinance shall be acted by the municipality to ensure practice of segregation, recycling, and composting activities</li> <li>Each barangay will construct its own low-cost MRF uniformly designed. It is where the collected solid wastes from households will be segregated to recover the recyclables and divert the compostable for composting.</li> <li>The recovered recyclables will be recycled either by reusing, selling or converting it into eco-products</li> </ul>
Bacnotan	<ul style="list-style-type: none"> <li>Functional BSWM Committees</li> <li>Inspections of all households, schools, business and industrial entities within the barangay to determine compliance</li> <li>Technical Assistance by way of On-site lecture on waste segregation</li> <li>The barangay will only accept segregated waste at the mRF</li> </ul>
Bagulin	<ul style="list-style-type: none"> <li>The Municipality shall formulate or review existing ordinance. The Municipality shall regularly inform the residents regarding on the specific strategies such as 3Rs, "NO segregation, No collection" policy, etc through posting in billboards, meetings (i.e., parents, teachers, and students meetings). The Municipality shall install garbage bins or jars to facilitate segregation at source. The Municipality shall mobilize the Rural Sanitary Inspector (RSI) to conduct information dissemination in the barangay covered and proposed to be covered by the program. Constant monitoring shall also be undertaken by the RSI in the absence of the Municipal Environment and Natural Resources Officer (MENRO).</li> <li>The municipality targeted to establish a Material Recovery Facility (MRF) in every barangay as a major activity and the BSWMC will encourage the household to put their recyclables in MRFs so that mobile buyers may come more often into the barangays to buy the recyclables, regularly, thereby creating additional income to the barangay. Educate the residents and enforce an ordinance to segregate waste at source and proper disposal. This program shall start on 2016 with the Rural Sanitary Inspector as the frontline implementer of the program. The municipality shall also conduct training programs to clearly define what to do, who will do and how to do recycling.</li> <li>The primary source of living of the people in Bagulin is farming. If biodegradable wastes are well managed in the household level by having their own compost pit, they will be relieved of buying fertilizer for their plants. The Municipality having its resources to conduct training for the management of biodegradable or composting including monitoring and enforcement of the program the Municipal Agriculture Officer (MAO) shall be the sole and focal person to lead this activity. The program shall be regularly monitored by the duly organized Solid Waste Management Council (SWMC) and the health personnel to evaluate the implementation.</li> </ul>
Balaoan	<ul style="list-style-type: none"> <li>Functional BSWM Committees</li> <li>Inspections of all households, schools and business entities within the barangay to determine compliance.</li> <li>Technical assistance by way of on-site lecture on waste segregation.</li> <li>The barangay will only accept segregated waste at the MRF and no biodegradable wastes to be accepted</li> </ul>
Bangar	<ul style="list-style-type: none"> <li>Assistance to the barangays in the inspection and monitoring in the compliance of all schools, barangay councils, institutional, business and industrial entities</li> <li>IEC campaign on segregation, organic fertilizer production, and recycling</li> <li>Clean and Green</li> <li>Clean Up drive</li> <li>MOA with ABOND for organic shredder</li> <li>Every MRF must have a log book to record users of the MRF wherein the date, volume and type of wastes deposited, and other information as to the operations of the facility</li> <li>Functional BSWM Committees</li> <li>Inspections of all households, schools, business and industrial entities within the barangay to determine compliance.</li> <li>Technical assistance by way of On-site lecture on waste segregation.</li> <li>The barangay will only accept segregated waste at the MRF</li> <li>The Purdy/Sector MRF shall have a compartment for recyclables</li> <li>Deputation of SWMO and Eco-aides</li> <li>Biodegradable waste shall be composted in house backyard and school composting pit</li> <li>Clusters of barangays will be provided by the municipality with a shredder for farm wastes such as rice straw, corn stalks, etc</li> <li>Composting facility at the nursery, barangay, households, business, industrial, institutions</li> <li>Shredding of rice straws as soil conditioner and organic fertilizer</li> <li>Continuing monitoring of the MSWM-TWG in the compliance of all generators</li> </ul>

	<ul style="list-style-type: none"> <li>• Corrective and Preventive Action Notice (CAPAN) shall be issued to non-conforming schools, barangay councils, business and industrial entities by the MSWM-TWG</li> <li>• Compliant schools, barangay councils, business and industrial entities will be issued Compliance Certificate</li> <li>• Issuance of citation ticket by deputized SWM officers and local PNP to all violators of the Environment Code specifically in anti-littering.</li> </ul>
Bauang	<ul style="list-style-type: none"> <li>• Having a separate storage bins and receptacles will facilitate segregation at source. It is also important for the waste generators to be aware of the program, what they need to do, why they need to do it, and how to do it. This can be addressed by IEC.</li> <li>• If segregation is to be done for the first time, a pilot area (start small in a sitio or purok or barangay if the people are receptive) can kick-off the new practice and be replicated in adjoining communities.</li> <li>• Included in the Municipal 10-Year SWM Plan is the provision of technical support through a Trainer's Training and can provide initial IEC materials on waste reduction and segregation.</li> <li>• Part of the targets of the plan is the establishment of an MRF with composting facility in every barangay or barangay cluster by the end of the first year of the planning period (2014).</li> <li>• The municipality shall collaborate with junkshops in the locality to assume the recovery and storage requirements of the municipality. With the collaboration, what is needed is an agreement between the LGU and the junkshops defining their roles and responsibilities. One of these responsibilities is the maintenance of record of the MRF/junkshop, so that the LGU can also prepare the report that it has to regularly submit the MSWMB.</li> <li>• The Plan targets that all of the barangays in the municipality of Bauang will have their own composting facilities. Backyard composting for all waste generators will be mandatory. For those who do not have space for individual composting, cluster composting will be encouraged. Composting both at the domestic and barangay levels will be made mandatory for backyard gardens and agricultural production areas. Any acceptable composting technology that are already being done, tried and tested can be used, as long as these do not create undue disturbance to the environment and the people around the composting facility or site.</li> </ul>
Burgos	<ul style="list-style-type: none"> <li>• Responsibility of barangay</li> <li>• It will be adopted municipal-wide</li> <li>• Pilot areas that will initiate the adoption and be replicated by the rest of the barangays including business establishment and other stakeholders</li> <li>• Each barangay will design its own low-cost MRF uniformly designed</li> </ul>
Caba	<ul style="list-style-type: none"> <li>• Provision of separate storage bins and receptacles at the household level.</li> <li>• Conduct IEC on segregation and waste reduction</li> <li>• Provision of technical support through a Trainer's training</li> <li>• Establishment of MRFs in every barangay</li> <li>• Mandatory backyard composting</li> <li>• Capacity building on different composting technologies and management conducted by the ESWMB or MENRO</li> </ul>
Luna	<ul style="list-style-type: none"> <li>• Segregation of wastes into 4 categories through the provision of color-coded bins.</li> <li>• Enactment of ordinance on waste segregation, recycling, and composting with penalties to ensure that enforcement is in place and regular monitoring of MENRO in compliance to this ordinance.</li> <li>• Mobilize Barangay Solid Waste Management Committee</li> <li>• Establishment of MRFs in every barangays with record keeping procedures</li> <li>• Penalize those that violate or non-conform to the segregation of wastes</li> <li>• Deputize solid waste management officers to implement the segregation policy</li> <li>• IEC on waste segregation, recycling</li> <li>• Technical assistance from NGAs and PGLU</li> <li>• Livelihood projects such as making of bags, pouch, wallets, accessories etc out of plastics and shredded plastics for pillowfillings, and organic fertilizers, plastic shredders mixed with aggregates, paper charcoal making, and eco-bricking spearheaded by the Municipality</li> <li>• Adopt a recycling program such as Palit-Basura Program</li> <li>• Mandatory backyard composting in all households</li> <li>• Establishment of on-site MRFs with composting facility and storage area for recyclables in all institutions and commercial establishments</li> <li>• Marketing development for organic fertilizers and eco-products</li> </ul>
Naguilian	<ul style="list-style-type: none"> <li>• The MSWM-AT will assist the barangays in the inspection and monitoring in the compliance of all schools, barangay councils, institutional, business and industrial entities.</li> <li>• IEC Campaign</li> </ul>

	<ul style="list-style-type: none"> <li>• Clean and Green activities such as tree planting</li> <li>• Clean up drive such as road side beautification</li> <li>• Enter into MOA with partners such as NGOs of the Philippine Army</li> <li>• The conduct of IEC especially on Organic agriculture</li> <li>• MOA for counter parting with ABOND or Department of Agriculture for the provision of organic shredder</li> <li>• Every MRF must have a log book to record users of the MRF wherein the date, volume and type of wastes deposited, and other information as to the operations of the facility</li> </ul>
Pugo	<ul style="list-style-type: none"> <li>• Segregation at source from all its sources especially in household areas</li> </ul>
Rosario	<ul style="list-style-type: none"> <li>• Enactment of ordinance to ensure the practice of segregation, recycling, and composting activities</li> <li>• Conduct of IEC on segregation, recycling and composting to all barangays, schools and commercial establishments</li> <li>• Regular monitoring to all barangays, establishment and institutions scheduled by MENRO to ensure that the said sectors are doing the activities indicated above</li> <li>• Establishment of pilot areas that will initiate the adoption of segregation program and then be replicated by the rest of the barangays including business establishments and other stakeholders</li> <li>• Each barangay has constructed its own low-cost MRF uniformly designed. It is where the collected solid wastes from the households will be segregated so to recover the recyclables and divert the compostables</li> <li>• Financial support from the Municipality in the establishment of MRFs</li> <li>• The recovered recyclables will be recycled either by reusing, selling or converting it into eco-products</li> <li>• Schools and women's organizations will be tapped to spearhead or to assist in promoting recycling and livelihood from wastes</li> <li>• The municipality shall invite experts from reliable agency to conduct seminar and actual demonstration on how recyclable wastes are turned into useful and marketable items</li> <li>• Based on the waste characterization of each barangay, the barangay MRF should be monitored monthly by MENRO if it really follows its specific use which is for recyclables only.</li> <li>• The Barangay should have a partnership with junkshops within their area. AMOA between the barangay and a junkshop, defining the role of each regarding the recyclables that are being brought in the MRF.</li> <li>• MENRO will conduct Information Education Campaign to all barangays for the correct usage of the Materials Recovery Facility and the segregation at source. Likewise, a monthly monitoring will be conducted</li> <li>• Compost pit in every households</li> <li>• A composting facility will be developed at the disposal site so to accommodate and process biodegradable wastes that will be recovered from the collection areas</li> <li>• The composting facility will have an unloading and mixing section; shredding and sieving area; drying, packaging and storage area; and a laboratory for compost activators. Shredding the compostables with the aid of activated effective microorganisms (EM) will speed up the composting process</li> <li>• Ashredder which was provided by DENR is being housed at the old slaughterhouse. The biodegradables from the public market will be composted by the use of bokashi technology.</li> <li>• MAO encouraged farmers of the municipality to practice Organic Farming and to date there are four (4) Farmers practicing such.</li> </ul>
City of San Fernando	<ul style="list-style-type: none"> <li>• NO segregation, No collection" policy, Solid waste shall be segregated into four major types – biodegradable, recyclable, residual and special wastes</li> <li>• Secondary segregation shall be done at waste processing centers or MRFs, whether at the barangay, barangay-cluster or city-level.</li> </ul>
San Gabriel	<ul style="list-style-type: none"> <li>• Each barangays will construct its own low-cost MRF uniformly designed. It is where they temporarily store their recyclables until they re-use, sold and/or converted to eco-products</li> </ul>
San Juan	<ul style="list-style-type: none"> <li>• Strict implementation of segregation-at-source by all generators as mandated by law wherein waste materials shall be placed in the recommended storage bins. Generators are not allowed to dispose the recyclables for waste collection. They are required to store them in their premises and sell them to junkshop dealers. The generator may also turnover the segregated recyclables to the Barangay ISWM Committee for storage at the MRF. Any income from the sale of recyclables from the Barangay MRF shall be deposited to the Local SWM Fund. The barangay thru its ISWM Committee will monitor the stakeholders' compliance to this provision</li> <li>• Factory returnables such as paper, plastics, metals, glass bottles, rubber and other materials will be collected and traded to junkshops and other recyclers. Materials with less market value will still be collected and stored until enough volume for trading is obtained. Partnership with local junkshop operators will be forged. Through the War on Wastes (WOW) Program recycling seminars, demonstrations, trainings and contests will be spearheaded in the schools. Close</li> </ul>

	<p>coordination and partnership with the Department of Education will be set. Recycling initiatives will form part the Municipal Search for Cleanest and Greenest Barangay.</p> <ul style="list-style-type: none"> <li>• Training on composting of households, farmers and other stakeholders will be conducted. During the trainings, technologies and processes on composting will be elaborated. Do-it-yourself composting process applicable for households will be conducted.</li> <li>• Small and large-scale composting methods applicable to the LGU and stakeholders will be carefully studied. Household biodegradables should not be mixed with other waste types to avoid contamination. Bio-wastes shall be contained in the pits in very yard.</li> <li>• Vegetable scraps, fruit scraps and other food leftovers will be used as animal feeds (for hogs, dogs, cats, ducks, and chickens).</li> <li>• Different composting options such as vermicomposting, in-vessel composting (e.g. use of bioreactors), pile composting and other suitable methods will be conducted.</li> <li>• Use of biodegradables as mulch in farmlands is encouraged. Ploughing of soil together with the hays, rice hull and other bio-materials enriches the soil with essential nutrients. Produced composts will be utilized in vegetable gardens to reduce if not eliminate dependence on synthetic fertilizers.</li> <li>• Each school will establish their composting areas. There will be trainings/seminars on composting, vegetable organic farming and other related topics for the faculty, pupils/students and parents as well. Produced fertilizers are to be utilized in their nurseries, urban gardens, vegetable gardens and other green spaces. Surplus can be sold by the schools and this will serve as additional income source. Composting and organic gardens will be part of the evaluation on the Search for Cleanest and Greenest School.</li> <li>• Partnership with the Municipal Agriculture Office will also be established for a large-scale organic fertilizer production. The Municipal Agriculture office received composting equipment from Bureau of Soils and Watershed Management and will soon established its own organic fertilizer production facility. Compostable waste that will be collected from the public market, slaughter house and household will be turn over to them. This diversion strategy will be implemented at any time this year (2017). Biodegradable waste from rural barangays cannot be quantified since most households are also farmers and they have been trained in organic farming. After a crop season, they are using farm waste such as rice hay, weeds and corn cobs and stalks for organic fertilizer production in the process of natural composting and or vermicomposting for their own use.</li> <li>• Waste to Energy project is another option for the biodegradables provided a suitable technology and ample supply of bio-mat are supplied. The gas generated in the process will be utilized in supplying energy to households and other facilities.</li> </ul>
Santo Tomas	<ul style="list-style-type: none"> <li>• Enactment of ordinance to ensure the practice of segregation, recycling, and composting</li> <li>• Designation of areas within the barangay where segregation can be done</li> <li>• Establishment of low-cost MRF for every barangay where the collected solid wastes from the households will be segregated so to recover the recyclables and divert the compostables</li> <li>• The recovered recyclables will be recycled either by reusing, selling or converting it into eco-products</li> <li>• Schools and civil society organizations will be tapped to spearhead or to assist in promoting recycling and livelihood from wastes</li> <li>• The municipality shall invite speakers from reliable agency to conduct seminar and actual demonstration on how recyclable wastes will be turned into useful and marketable items</li> <li>• A composting facility will be developed at the disposal site so to accommodate and process biodegradable wastes that will be recovered from the collection areas</li> <li>• The composting facility will have an unloading and mixing section; shredding and sieving area; drying, packaging and storage area; and a laboratory for compost activators</li> <li>• Shredding the compostables with the aid of activated effective microorganisms (EM) will speed up the composting process</li> </ul>
Santal	<ul style="list-style-type: none"> <li>• There will be pilot areas that will initiate the adoption and then be replicated by the rest of the barangays including business establishments and other stakeholders</li> <li>• Each barangay will construct its own low-cost MRF uniformly designed. It is where they temporarily store their recyclables until they reuse, sold, and or/ converted to eco-products</li> <li>• The recovered recyclables will be recycled either by reusing, selling, or converting it into eco-products</li> <li>• Schools and Women's Organizations will be tapped to spearhead or to assist in promoting recycling and livelihood from wastes. Likewise, the municipality shall invite experts from reliable agency to conduct seminar and actual demonstration on how recyclable wastes are turned into useful and marketable items</li> <li>• Mandatory composting in every household</li> </ul>

	<ul style="list-style-type: none"> <li>Establishment of composting facility equipped with unloading and mixing section, shredding and sieving area, drying, packaging and storage area in the disposal site to accommodate and process biodegradable wastes from the collection areas.</li> </ul>
Sudipen	<ul style="list-style-type: none"> <li>MENRO as the lead agency and in coordination with the executive committees on MSWMB and MCGC shall conduct annual monitoring and evaluation to the 17 barangays.</li> <li>Quarterly monitoring report shall also be required from barangay focal persons on environment for an immediate assessment and the necessary action to be undertaken on the issues that may arise in the implementation SWM program</li> </ul>
Tubao	<ul style="list-style-type: none"> <li>Ordinance will be enacted by the Municipality to ensure segregation at source and be adopted municipal-wide</li> </ul>

*\*Excerpted from the approved 10-Year Solid Waste Management Plans of LGUs*

## 7.4 Transfer

A transfer station is a building or area for temporary processing of waste prior to final disposal, usually used when the disposal facility is distant or requires a special transport for loading. Most of the LGUs in the province of La Union have their own disposal facility, so the need for a transfer facility for them is not seen as an option in the next ten years. However, for the LGUs that would pursue clustering with other LGUs for their disposal facilities, a transfer facility located within each LGU will be necessary. The design, and plans for its operations, monitoring and implementation schedule shall be included in the individual SWM Plans of the particular LGU.

The Provincial Government of La Union does not have any plans yet on putting up transfer facilities.

## 7.5 Alternative Technologies for Residual Wastes

In terms of presence of alternative technology for residual wastes, most of the LGUs indicated that they have shredding machine, plastic pulverizer, and ecobrick pulverizer.

LGUs are encouraged to utilize alternative technologies for residual wastes to prolong the lifespan of their existing sanitary landfill facilities.

The Province is open to alternative technologies for the management of residual wastes, including but not limited to plastic waste recycling or waste-to-energy technologies. Decision-making should consider technology evaluation (Environmental Technology Verification from DOST), overall integrated resource recovery, and cost.

## **7.6. Disposal**

### **7.6.1. Solid Waste Disposal Capacity**

All of the component LGUs of La Union have their own sanitary landfill facilities. With this, close monitoring shall be conducted to ensure that the said facilities conform to the provisions of RA 9003 and its IRR regarding waste management facilities.

The Province shall explore on landfill methane recovery for power generation in the existing sanitary landfills in La Union. It is also recommended to engage into Public-Private Partnership for Solid Waste Management Projects such as, but not limited to, the establishment of Waste-to-Energy Facility and treatment, storage, and disposal facility and conduct benchmarking activity at the successful PPP SWM project in the country.

### **7.6.2 Existing Facilities**

In the Province of La Union, there are 20 existing operational sanitary landfill facilities. Of which, 19 SLFs belong to category 1 and one (1) is Category II which is the Sanitary Landfill Facility of the City of San Fernando. It is recommended for the component LGUs to utilize alternative technologies and partner with obliged companies thru

the EPR Act to boost waste diversion initiatives thereby prolonging the lifespan of their existing sanitary landfill facilities. The PGLU shall continue to provide assistance in the upgrading of the existing sanitary landfill facilities to ensure the optimum and sustainable waste disposal management provincewide.

The individual SWM Plans of the municipalities and city of La Union should conform to Rule XIV of DENR Administrative Order No. 01-34 (Implementing Rules and Regulations of RA 9003) regarding considerations for siting and operating sanitary landfills, and to DENR Administrative Order No. 10, s. 2006. The Province shall ensure 100% compliance of the sanitary landfill facilities as to the provisions of the Environmental Compliance Certificate and other permits such that of the Water Discharge Permit, Permit to Operate from DOH, Permit to Operate (for generator sets if applicable), Hazardous Waste Generator's ID, among others.

In the Province of La Union, there are already five (5) Septage Treatment Plants. These are located in Naguilian, Bauang, City of San Fernando, San Juan, and Bacnotan. Of which, one (1) is privately managed and the rest are LGU-managed.

**Table 7.6.2 Disposal Plan per City/Municipality**

Municipality/ City	Disposal Plan	Status of SCRP
PGLU	The Provincial Government of La Union shall continue its assistance to component LGUs in the establishment/upgrading of sanitary landfill facilities and septage treatment facilities in the Province	NA
Agoo	With existing sanitary landfill facility	NA
Aringay	With existing sanitary landfill facility	NA
Bacnotan	With existing sanitary landfill facility	NA
Bagulin	With ongoing establishment of sanitary landfill facility	NA
Balaoan	With existing sanitary landfill facility	NA
Bangar	With existing sanitary landfill facility	NA
Bauang	With existing sanitary landfill facility	NA
Burgos	With ongoing establishment of sanitary landfill facility	NA
Caba	With ongoing establishment of sanitary landfill facility	NA

Luna	With existing sanitary landfill facility	NA
Neguilian	With existing sanitary landfill facility	NA
Pugo	With existing sanitary landfill facility	NA
Rosario	With existing sanitary landfill facility	NA
City of San Fernando	With existing sanitary landfill facility	NA
San Gabriel	With existing sanitary landfill facility	NA
San Juan	With existing sanitary landfill facility	NA
Santo Tomas	With existing sanitary landfill facility	NA
Santol	With existing sanitary landfill facility	NA
Sudipen	With existing sanitary landfill facility	NA
Tubao	With existing sanitary landfill facility	NA

### 7.6.3. New Facilities

This plan targets to establish a Treatment, Storage, and Disposal (TSD) Facility. Prior to the establishment of a TSD Facility, the Province shall engage into a consultancy service for the preparation of a Feasibility Study for the establishment of TSD facility.

To fully address the concerns on worsening water quality status of the bathing beaches due to fecal and total coliform contamination primarily from domestic sources i.e., seepage from bottomless septic tanks, direct discharging of wastewater into the water bodies, open defecation into the water bodies, and the limited number of accredited/legal siphoning service providers in La Union, the PGLU through the PG-ENRO plans to establish an STP Facility in every circuit. Hence, the PGLU shall continue to enable and assist LGUs in the establishment of Septage Treatment Plants (STPs) in the Province. In CY 2024, the Province targets to establish a STP facility in Balaoan to cater the Northern Circuit, then another facility each in South and Southeastern Circuit in the following years.

This plan also targets the establishment of eco-MRFs out of ecobricks in schools and other institutions as one way of promoting and mainstreaming the circular economy principle.



#### 7.6.4. Categorized Disposal Facilities (Sanitary Landfill) Design

The Provincial Government of La Union does not manage any LGU-owned sanitary landfill.

### 7.7. Special Wastes

#### 7.7.1. Health Care Wastes

Shown below is the proposed framework for the facilitation of proper healthcare waste management in households and LGU-owned healthcare facilities.

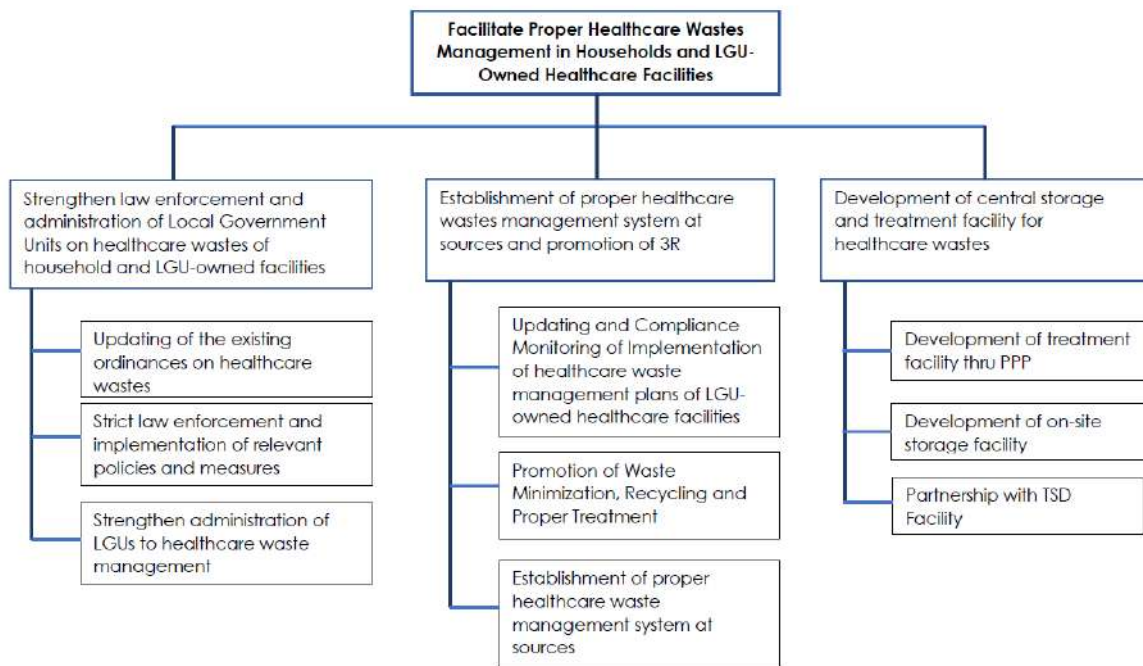


Figure 7.7.1. Proposed Framework for the Facilitation of Proper Healthcare Waste Management in Households and LGU-owned Healthcare Facilities

Proper healthcare waste management depends mainly on the administration and organization and require sufficient legislative and financial support, as well

as the active participation by the stakeholders. Strict monitoring and compliance to standard rules of procedure for the avoidance of injuries, infections, contamination, and potential health risks associated with the handling of wastes from its generation, collection, temporary storage, transport, and subsequent disposal is directed by the DOH healthcare manual. To facilitate law enforcement and strengthen administration of Local Government Units on healthcare wastes of household and LGU-owned facilities, shown below are the actions plans.

**Table 7.7.1.1 Action Plan for the Facilitation of Proper Healthcare Waste Management in Households & LGU-owned Healthcare Facilities**

Action Plan	Description
<b>Goal No. 1 Strengthen law enforcement and administration of Local Government Units on healthcare wastes of households and LGU-owned facilities</b>	
<i>Updating of the existing ordinances on healthcare wastes</i>	<ul style="list-style-type: none"> <li>○ Revisit and update the existing Provincial Sanitation Code</li> <li>○ Enactment of necessary ordinance on proper healthcare waste management of households particularly the COVID-19 related healthcare wastes</li> </ul>
<i>Strict law enforcement and implementation of relevant policies and measures</i>	<ul style="list-style-type: none"> <li>○ Forge partnership with DENR-EMB and DOH on the conduct of joint monitoring and inspection healthcare facilities including their compliance on the implementation of their healthcare waste management plans</li> <li>○ Develop healthcare waste management monitoring and inspection system</li> </ul>
<i>Strengthen administration of LGUs to healthcare waste management</i>	<ul style="list-style-type: none"> <li>○ Capacity building of environmental and health officers of Local Government Units on the enforcement of laws and regulations pertaining to healthcare waste management</li> </ul>
<b>Goal No. 2 Establishment of proper healthcare wastes management system at sources and promotion of 3R</b>	
<i>Updating and Compliance Monitoring of Implementation of healthcare waste management plans of LGU-owned healthcare facilities</i>	<ul style="list-style-type: none"> <li>○ Ensure that all LGU-owned healthcare facilities have their own healthcare waste management plans</li> </ul>
	<ul style="list-style-type: none"> <li>○ Update the healthcare waste management plans of LGU-owned healthcare facilities with provisions on proper healthcare waste management in emergencies particularly during pandemics (i.e., COVID-19 related healthcare</li> </ul>

	wastes)
	<ul style="list-style-type: none"> <li>○ Update all 10-year solid waste management plans with provisions on proper household healthcare waste management in emergencies or during pandemics (i.e., COVID-19 related healthcare wastes)</li> </ul>
<i>Promotion of Waste Minimization, Recycling and Proper Treatment</i>	<ul style="list-style-type: none"> <li>○ Request technical assistance and/or training from DOH and DENR on the recycling and proper treatment of healthcare wastes</li> <li>○ Implement the Green Procurement Program in all LGU-owned healthcare facilities</li> <li>○ Forge partnership with an accredited TSD facility for the proper treatment of healthcare wastes</li> </ul>
<i>Establishment of proper healthcare waste management system at sources</i>	<ul style="list-style-type: none"> <li>○ Promote the use of reusable/washable face masks in the general public to reduce the volume of used disposable masks through IECs</li> <li>○ Ensure that households healthcare wastes are properly managed through the conduct of random inspection of households</li> </ul>
<b>Goal No. 3 Development of central storage and treatment facility for healthcare wastes</b>	
<i>Development of on-site storage facility</i>	<ul style="list-style-type: none"> <li>○ The PGLU shall build a centralized storage facility to lessen the transport cost of healthcare wastes to the TSD Facility</li> </ul>
<i>Partnership with TSD Facility</i>	<ul style="list-style-type: none"> <li>○ Assist component LGUs to form partnership with a TSD Facility</li> </ul>
<i>Development of treatment facility thru PPP</i>	<ul style="list-style-type: none"> <li>○ Invite private sectors to invest on the construction and operation of healthcare waste treatment facility</li> </ul>

**Table 7.7.1.2 Plan for Treatment, Storage, and Disposal of Healthcare Wastes per Municipality/City**

Municipality/City	Plan for Treatment, Storage, and Disposal of Healthcare Wastes
Agoo	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
Aringay	Special waste shall be properly disposed in designated septic vaults or safety boxes. There should be a treatment for such especially the health care wastes. The initiative to treat hospital waste prior to final disposal will come from the LGU.
Bacnotan	<p>The municipal Health Office and the Bacnotan District Hospital are provided with safety boxes and operate their respective septic vault for the storage of used syringes and a separate vault for laboratory specimen. Thru the Municipal Health Office, the LGU will monitor the activities and compliance of health care facilities to applicable laws and regulations. Only general residual wastes will be collected and disposed by the municipality.</p> <p>Coordination with the Provincial SWM Board and manufacturers and other recyclers will be conducted for the disposal and transport of special wastes. Expanded Producers Responsibility (EPR) Program will be established thru partnership(s) in the management of special wastes as well as provide savings for the LGU in the treatment of these materials.</p>
Baguio	The Municipality shall construct facility for this purpose to keep people away from harm. The barangay shall construct special

	vault for the special and health care waste.
Balaoan	Training on Proper Handling, Transport and Management of Hazardous Materials shall be conducted in coordination with the DENR-BMB. Recovered busted lights will be temporarily stored at the municipal MRF. The disposal of this type of wastes will be coordinated with the province in coordination with their province-wide collection and transport.
Bangar	Health care wastes shall be managed in compliance to the Philippine Sanitation Code and standards set by the Department of Health (DOH). The Municipal Health Office was provided with Safety boxes and operate their respective septic vault for the storage of used syringes and a separate vault for laboratory specimen. Thru the Municipal Health Office, the LGU will monitor the activities and compliance of healthcare facilities to applicable laws and regulations. Only general residual wastes will be collected and disposed by the municipality. Barangay Health Workers (BHW) will be further trained on Healthcare Waste Management (HWM) down to the barangay level. In addition, the municipality thru the MSWM-TWG spearheaded by the Health Office shall monitor the Healthcare Waste Management Programs of hospitals and other related facilities.
Bauang	The LGU shall spearhead the preparation of the Municipal Health Care Waste Management Plan, starting with the commission for the conduct of a feasibility study for a Hospital Waste Treatment Facility in the Year 3 (2016). The Municipal Health Care Waste Management Plan will give the guidelines for the proper storage, collection, treatment and disposal of health care waste in the municipality.
Burgos	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
Caba	<p>At present, special wastes are disposed or dig in their own backyard. As included in this plan, the establishment of a SLF and a septic vault for special waste will be a part of the engineering plan of the SLF. IEC campaign will focus on the dangers of illegally dumping special wastes in order to warn encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.</p> <p>Since the only hospital is government-owned, the initiative to treat the hospital waste prior to final disposal will come from the Province. A hospital waste treatment facility will be put up that would possibly cater not only the Caba Medicare and Community Hospital but also other hospitals from the neighboring municipalities with corresponding fees.</p> <p>As an immediate action to address the problem on toxic and hazardous wastes, the municipality will collaborate with treater for the first five years of the plan implementation. A treatment facility will then be put up at the disposal site.</p>
Luna	Training on handling/collection, treatment, disposal/storage of domestic special/hazardous waste shall be provided by the Municipality. Technical assistance from the Department of Environment and Natural Resources will be sought. Partnership with an accredited THW collector and treater will be done to manage the disposal of special wastes.
Naguilian	<p>Health care wastes shall be managed in compliance to the Philippine Sanitation Code and standards set by the Department of Health (DOH). The Municipal Health Center and the Naguilian District Hospital are provided with safety boxes and operate their respective septic vault for the storage of used syringes and a separate vault for laboratory specimen. Thru the Municipal Health Center, the LGU will monitor the activities and compliance of healthcare facilities to applicable laws and regulations. Only general residual wastes will be collected and disposed by the municipality.</p> <p>Barangay Health Workers (BHW) will be further trained on Healthcare Waste Management (HWM) down to the barangay level. In addition, the municipality thru the MSWM-AT spearheaded by the Health Office shall monitor the healthcare waste management programs of hospitals and other related facilities.</p>
Pugo	<p>Health care wastes shall be managed in compliance to the Philippine Sanitation Code and standards set by the Department of Health (DOH). The Municipal Health Center and the Naguilian District Hospital are provided with safety boxes and operate their respective septic vault for the storage of used syringes and a separate vault for laboratory specimen. Thru the Municipal Health Center, the LGU will monitor the activities and compliance of healthcare facilities to applicable laws and regulations. Only general residual wastes will be collected and disposed by the municipality.</p> <p>Barangay Health Workers (BHW) will be further trained on Healthcare Waste Management (HWM) down to the barangay level. In addition, the municipality thru the MSWM-AT spearheaded by the Health Office shall monitor the healthcare waste management programs of hospitals and other related facilities.</p>
Rosario	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
City of San Fernando	The City plans to have a Medical Waste Treatment Facility through a Public-Private Partnership (PPP) to manage the hazardous wastes that are generated by the medical facilities within the city. The facility will have compartments for storage and treatment.

	of medical wastes. Treated and processed medical wastes can then be disposed in a separate cell within the ESF of the city.
San Gabriel	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
San Juan	The planned engineered sanitary landfill will have septic vaults for containment of the health care waste. The municipal government further plans to partner with La Union Medical Center since they are now inviting hospitals and rural health units to bring their waste to their hospital to be brought to a treatment facility in Laguna before final disposal.
Santo Tomas	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
Santol	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
Sudipen	The municipality shall construct a Special/ Hazardous waste treatment facility that intends to receive special/ hazardous wastes (e.g. broken bulbs, lamps, defective toys, spray canisters, discarded batteries) from households, commercial, industries and institutions. The barangay MRFs shall serve as temporary storage area for these types of wastes prior to collection and transport to the municipal final disposal facility. Separate schedule of hauling at least once a month in the 17 barangays will be implemented.
Tubao	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.

*\*Excerpted from the approved 10-Year Solid Waste Management Plans of LGUs*

### *Plan for the Proposed Establishment of Centralized Hazardous Wastes Storage Facility*

To assist the LGUs in their proper management of hazardous wastes, PGLU plans to establish a storage facility in each circuit to facilitate clustering of transport and treatment fee thus alleviating the expenses of each LGUs in managing these wastes. Shown below is the location of each storage facility. Distance-and accessibility -wise, the PGLU together with LGUs shall determine the most suitable site for the storage facility. A Memorandum of Agreement shall be executed between the TSD facility, PGLU, and LGUs for the co-management of the storage facility. LGUs shall be responsible for the payment of transport and treatment of their hazardous wastes. Currently, five (5) Materials Recovery Facilities have been established/upgraded in the district hospitals strategically located in each circuit to facilitate the clustering of storage of these wastes as shown in Figure 3.6.4.

Table 7.7.1.3 Healthcare Wastes Generated Projection by City/Municipality

Healthcare Waste Generation Projection (kg/day)												
LGUs		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT I												
Bangar	kg/d	4.503	4.516	4.526	4.539	4.551	4.564	4.576	4.589	4.602	4.614	4.627
Luna	kg/d	0.9909	0.9919	0.9922	0.9930	0.9938	0.9946	0.9954	0.9961	0.9969	0.9977	0.9985
Sudipen	kg/d	1.339	1.340	1.341	1.343	1.345	1.346	1.348	1.349	1.351	1.352	1.354
Balacan	kg/d	0	0	0	0	0	0	0	0	0	0	0
Santol	kg/d	0	0	0	0	0	0	0	0	0	0	0
Bacnotan	kg/d	24.993	25.078	25.148	25.229	25.311	25.394	25.476	25.559	25.642	25.725	25.809
San Gabriel	kg/d	0.090	0.091	0.092	0.093	0.094	0.095	0.096	0.097	0.098	0.100	0.101
San Juan	kg/d	0.359	0.362	0.364	0.366	0.368	0.370	0.373	0.375	0.377	0.380	0.382
City of San Fernando	kg/d	0	0	0	0	0	0	0	0	0	0	0
DISTRICT II												
Bagulin	kg/d	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Bauang	kg/d	5.4160	5.4511	5.4831	5.5177	5.5525	5.5876	5.6228	5.6583	5.6940	5.7300	5.7661
Naguilian	kg/d	21.095	21.454	21.807	22.172	22.543	22.920	23.304	23.694	24.090	24.493	24.903
Burgos	kg/d	0.755366	0.75636271	0.7568158	0.757679	0.758542	0.759407	0.760273	0.761139	0.762007	0.762876	0.763746
Caba	kg/d	8.5960615	8.61517804	8.6286721	8.646404	8.664172	8.681977	8.699819	8.717697	8.735612	8.753563	8.771552
Aringay	kg/d	25.724	25.868	25.996	26.137	26.279	26.422	26.565	26.710	26.855	27.000	27.147
Agoo	kg/d	1.334	1.340	1.346	1.352	1.358	1.364	1.370	1.376	1.382	1.389	1.395
Tubao	kg/d	5.992	6.035	6.074	6.117	6.159	6.202	6.245	6.289	6.333	6.377	6.421
Pugo	kg/d	0	0	0	0	0	0	0	0	0	0	0
Santo Tomas	kg/d	0	0	0	0	0	0	0	0	0	0	0
Rosario	kg/d	34.956136	35.1321136	35.287353	35.45903	35.63153	35.80488	35.97907	36.15411	36.33	36.50675	36.68435

## 7.7.2 Toxic and Hazardous Wastes

Shown below is the proposed framework for the establishment of proper hazardous wastes management process flow in la union.

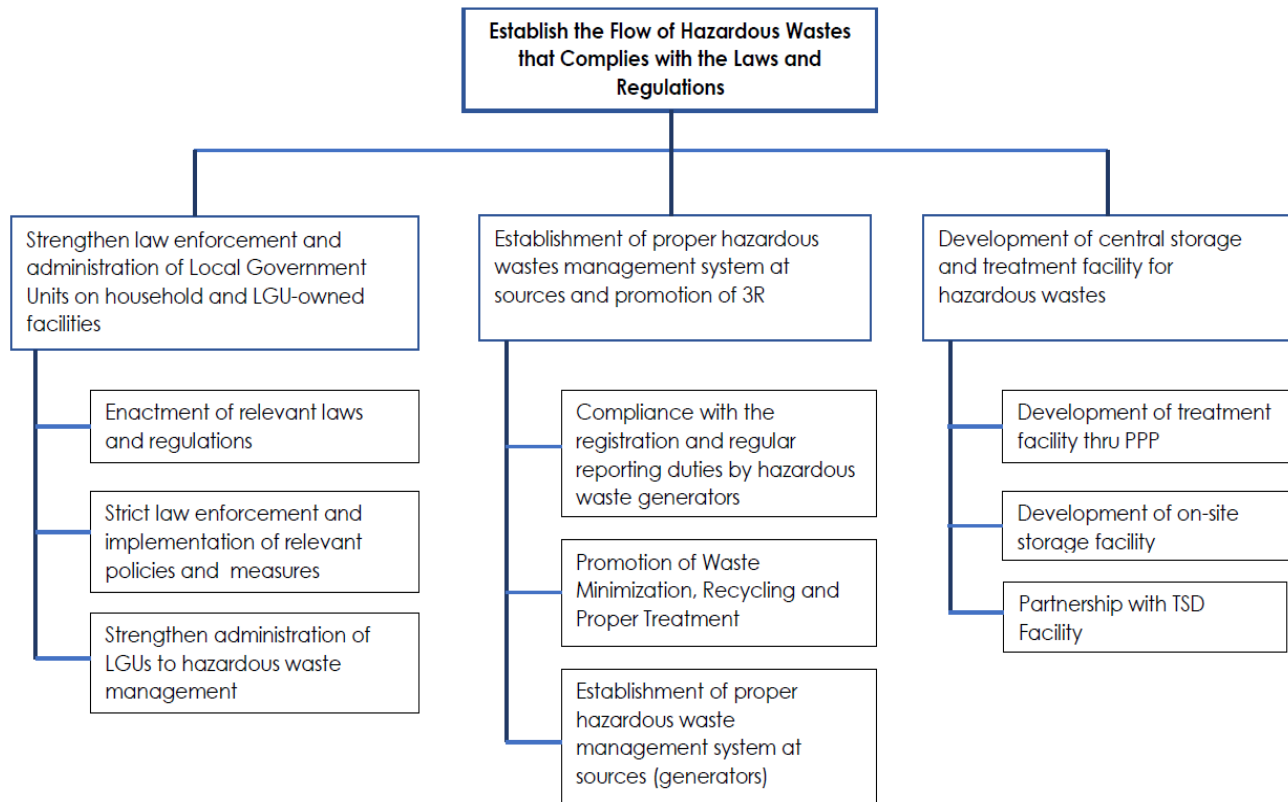


Figure 7.7.21. Proposed Framework for the Establishment of Proper Hazardous Wastes Management Process Flow in La Union

To achieve complete control of hazardous waste flow, first is to establish proper hazardous waste management system and second is to establish a full scale hazardous waste management administration and law enforcement mechanism. These two keypoints are closely interrelated with each other wherein strict law enforcement on hazardous waste management will not be possible without any sufficient hazardous waste treatment facilities and likewise, without any law enforcement on hazardous waste management, proper TSD facilities will never be developed. Thus, both shall be simultaneously addressed to establish proper hazardous waste management.

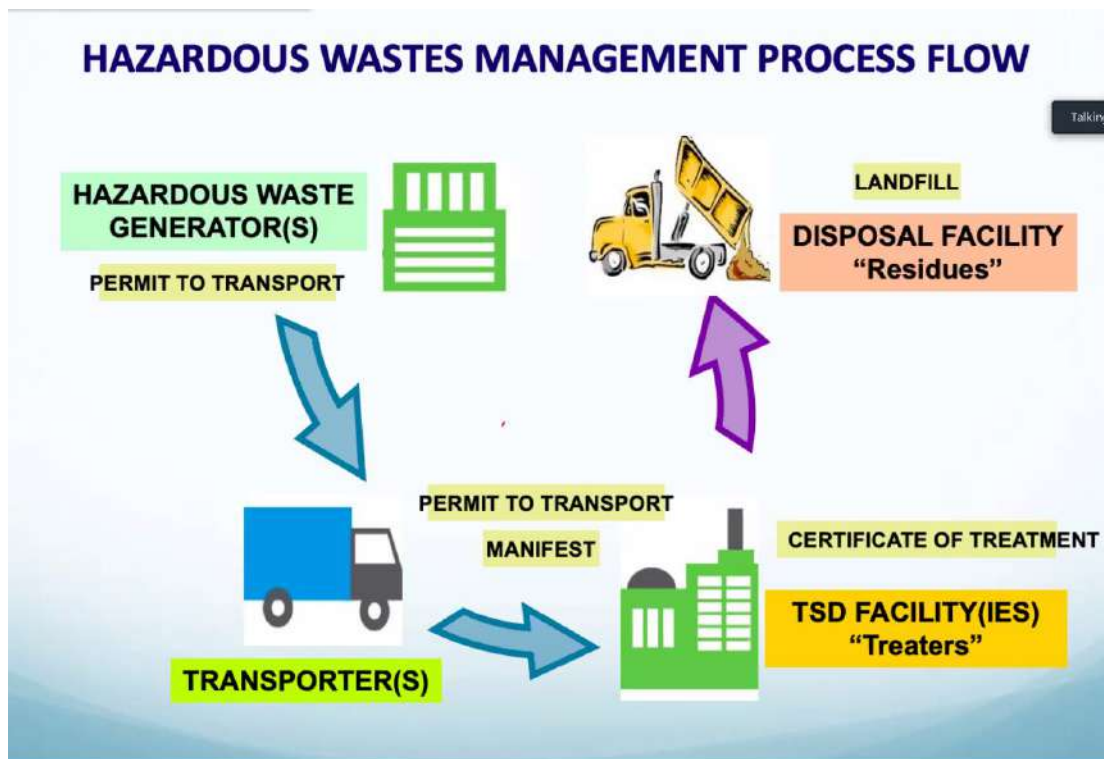


Figure 7.7.2.2 Hazardous Wastes Management Process Flow (Geronimo, 2021)

The ultimate goal of this plan is to establish the flow of hazardous wastes that complies with the laws and regulations. Thus, to achieve this goal, the plan shall focus on the following strategies for the realization of proper hazardous waste management in the Province:

- ✓ *Complete Law Enforcement and Full-fledged Establishment of Special Waste Administration by the Local Government Unit*
- ✓ *Establishment of Proper Management of Special Wastes at Sources*
- ✓ *Development of Treatment Facility needed for Proper Treatment and Disposal for Special Wastes*

One of the essential factors for a proper hazardous waste management are the enactment of sufficient local ordinances and their supporting rules and regulations as well as the establishment of strengthened office/department and human resource to enforce them. This plan set up phased targets on strengthening law enforcement.



Hazardous waste generators hold the primary responsibility for proper management of hazardous wastes. Hazardous waste generators has the obligation to properly store or treat hazardous waste on-site or off-site in compliance with the laws and regulations concerned. To accomplish the above-mentioned duties of the hazardous waste generator, the legal and regulatory system of hazardous waste management duly established by the regulating authority must be well understood and proper hazardous waste management at sources and promotion of 3Rs shall be established. Detailed requirements for hazardous wastes generators, transporters, and treaters are presented in the DENR Administrative Order No. 2013-22 or the Revised Procedures and Standards for the Management of Hazardous Wastes (Revising DAO 2004-36).

All component Local Government Units are encouraged to register as hazardous waste generator in compliance to the legal and technical requirements for hazardous waste management. LGUs shall establish hazardous waste management system and promote proper hazardous waste management focusing on 3Rs.

In the basic principle of hazardous waste management, the priority is to first reduce, secondly reuse, and lastly recycle. However, even maximizing these efforts, there still remains hazardous wastes to be properly treated and disposed. Thus, the development of proper hazardous wastes treatment and disposal system should be given top policy priority in the LGUs' initiatives.

To establish full-scale hazardous waste treatment facilities, the following are needed:

- ✓ *Landfill for special wastes*
- ✓ *Chemical treatment facility*
- ✓ *Solidification facility*

✓ *Thermal treatment facility*

These treatment facilities are deemed necessary however one cannot build and operate these facilities at the allowable treatment costs because of limited treatment demand according to the study of JICA 2001. Taking into account the whole preparation process before starting TSD facilities operation, including project planning, feasibility study, environmental impact assessment, ECC processing, and obtaining consensus from nearby residents, facility construction, permits, etc, it will take at least 4-5 years.

JICA (2001) recommends the development of TSD facilities by private-public partnership. A full-fledged government intervention in the development of TSD facilities has to be avoided in the case of hazardous waste sector since it is basically of private sector's businesses and not public ones in terms of well-known "Polluter-Pays-Principle." It is not the government or public but the generators who have the primary responsibility for proper treatment of hazardous wastes.

**Table 7.7.21 Action Plans for the Establishment of Proper Hazardous Wastes Management Process Flow in La Union**

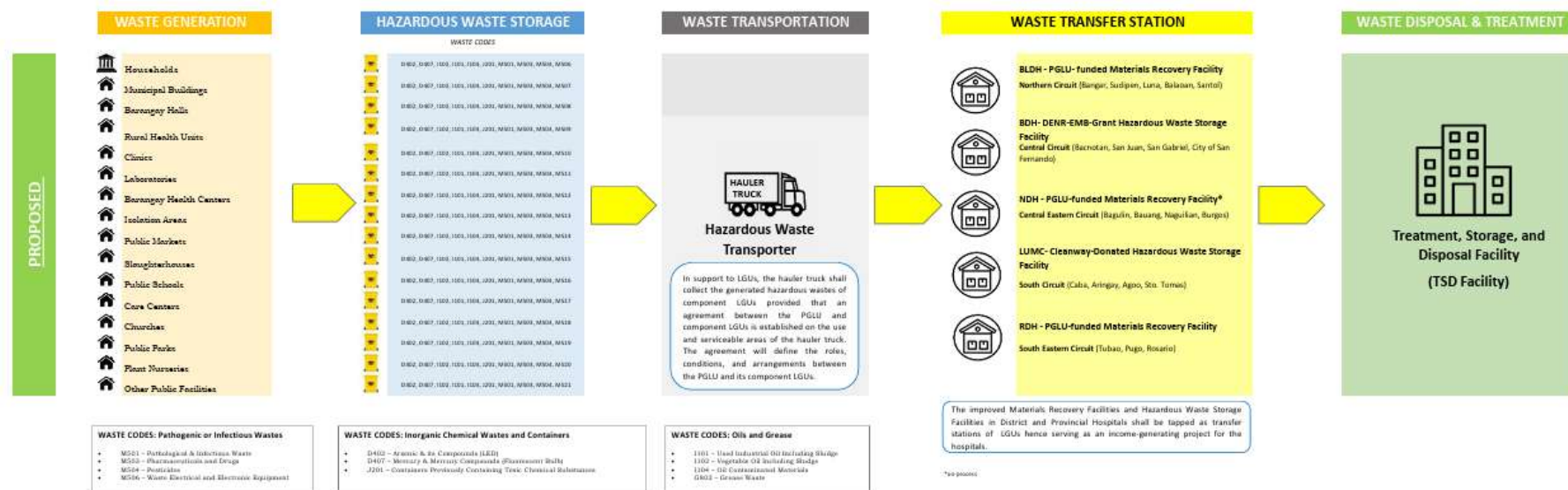
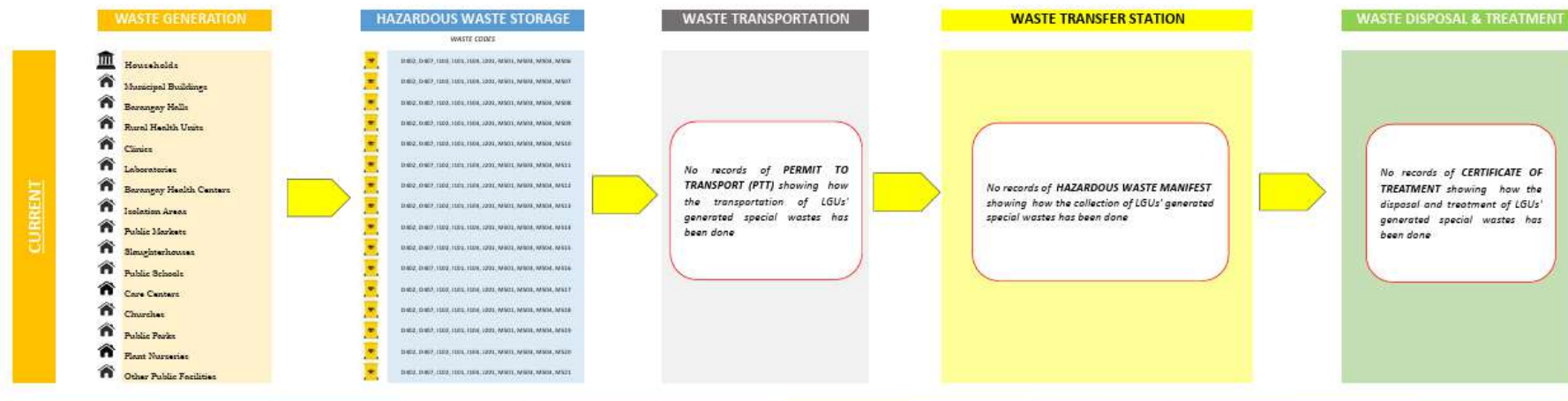
Action Plan	Description
<b>Goal No. 1 Complete Law Enforcement and Full-fledged Establishment of Special Waste Administration by the Local Government Unit</b>	
Enactment of relevant laws and regulations	<ul style="list-style-type: none"> <li>○ Enactment of local ordinances on proper hazardous waste management including but not limited to fines and penalties localization</li> <li>○ Develop necessary rules and regulations, standards, and manuals</li> <li>○ Enforcement of the established regulation, standards and manuals</li> </ul>
Strict law enforcement and implementation of relevant policies and measures	<ul style="list-style-type: none"> <li>○ Forge partnership with the regulating authority for the monitoring and inspection of hazardous waste management</li> <li>○ Develop hazardous waste management monitoring and inspection system</li> <li>○ Full-fledged hazardous waste management monitoring and inspection system</li> </ul>

Capacity building and awareness raising	<ul style="list-style-type: none"> <li>○ Strengthen the present office/department and capacity of available human resource through attendance to trainings, seminars and workshops</li> <li>○ Mobilize and equip Barangay Solid Waste Management Committees</li> <li>○ Through the provision of Materials Recovery Vehicle, improvement of Material Recovery Facilities, capacitate on proper recordkeeping, ensure proper waste segregation in households, and garbage collection fees</li> <li>○ Awareness raising on proper hazardous waste management highlighting 3Rs wherein waste minimization as top priority</li> <li>○ Establishment of economic incentives to engage wider participation of the community</li> </ul>
<b>Goal No. 2 Establishment of Proper Management of Special Wastes at Sources</b>	
Compliance with the registration and regular reporting duties by hazardous waste generators	<ul style="list-style-type: none"> <li>○ Enable all component LGUs to register as hazardous waste generator by securing a Hazardous Waste Generator Registration Certificate</li> <li>○ The Provincial Government of La Union shall process necessary registration and permits required in the establishment of hazardous waste storage facility</li> <li>○ 100% compliance to registration and reporting duties</li> </ul>
Promotion of Waste Minimization, Recycling and Proper Treatment	<ul style="list-style-type: none"> <li>○ Proper hazardous waste management system in place in each LGUs</li> </ul>
Establishment of Proper Hazardous Management System at Sources	<ul style="list-style-type: none"> <li>○ Enable all LGUs to appoint a pollution control officer who will oversee the proper management of hazardous wastes in the locality</li> <li>○ Apply for ISO14001 Environmental Management System</li> <li>○ Annual conduct of E-waste Collection Event</li> </ul>
<b>Goal No. 3 Development of Treatment Facility needed for Proper Treatment and Disposal for Special Wastes</b>	
Development of on-site storage facility	<ul style="list-style-type: none"> <li>○ Construction of storage facility in cluster of LGUs (one storage facility per circuit)</li> <li>○ 100% compliance on reporting obligations of the hazardous waste storage</li> </ul>
Partnership with TSD Facility	<ul style="list-style-type: none"> <li>○ Forge partnership with a TSD facility</li> <li>○ Facilitate Memorandum of Agreement (MOA) between PGLU, TSD Facility, and LGUs</li> </ul>

Development of treatment facility	<ul style="list-style-type: none"> <li>○ Promote private-public partnership in the development and operation of treatment facility</li> <li>○ Development of the facility</li> </ul>
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The Provincial Government of La Union (PGLU), as the steering/ enabling local government unit, shall provide the necessary support to its component LGUs in the management of hazardous wastes. Section 6.1.2 of DAO 2013-22 of RA 6969 stated that the maximum storage/ accumulation time limit of hazardous wastes is at one (1) year only, however, based on the joint monitoring of DENR-EMB Region and PG-ENRO, a considerable volume of hazardous wastes has been improperly handled and temporarily stored without any treatment for more than a year. More so, no hauling of such wastes have been carried out in most of the LGUs hence the prolonged storage of these wastes poses a potential threat to the environment. Given the current situation, a hauler truck shall be purchased to ease the burden on the transport of hazardous wastes provincewide. Shown below is the current and the proposed system for the special waste management in the Province.

**SPECIAL WASTE MANAGEMENT SYSTEM (Augmentation to LGUs)**



Note: The Provincial Government of La Union (PGLU), as the steering/ enabling local government unit, shall provide the necessary support to its component LGUs in the management of hazardous wastes as also signified in the approved 10-Year Solid Waste Management Plan of the Province. Section 6.1.2 of DAO 2013-22 of RA 8969 stated that the maximum storage/ accumulation time limit of hazardous wastes is at one (1) year only, however, based on the joint monitoring of DENR-EMB Region and PG-ENRO, a considerable volume of hazardous wastes has been improperly handled and temporarily stored without any treatment. More so, no hauling of such wastes have been carried out in most of the LGUs hence the prolonged storage of these wastes poses a potential threat to the environment. Given the current situation, this hauler truck aims to ease the burden on the transport of hazardous wastes provincewide.

Figure 7.7.23. Current and Proposed Special Waste Management System

Table 7.7.2.2 Plan for Treatment, Storage, and Disposal of Hazardous Wastes per Municipality/City

Municipality/ City	Plan for Treatment, Storage, and Disposal of Toxic and Hazardous Wastes
Agoo	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
Aringay	As an immediate action to address the problem on toxic and hazardous wastes, the municipality will collaborate with a treatment facility to be put up at the disposal site as soon as the plan will be implemented.
Bacnotan	Coordination with the Provincial SWM Board and manufacturers and other recyclers will be conducted for the disposal and transport of special wastes. Expanded Producers Responsibility (EPR) Program will be established thru partnership(s) in the management of special wastes as well as provide savings for the LGU in the treatment of these materials.
Bagulin	The Municipality shall construct facility for this purpose to keep people away from harm. The barangay shall construct special vault for the special and health care waste.
Balaoan	Training on Proper Handling, Transport and Management of Hazardous Materials shall be conducted in coordination with the DENR-EMB. Recovered busted lights will be temporarily stored at the municipal MRF. The disposal of this type of wastes will be coordinated with the province in coordination with their province-wide collection and transport.
Bangar	<p>Toxic and hazardous wastes will be managed in accordance to RA 9003 and RA 6969. Program to recover, segregate, store and treat the special wastes will be employed.</p> <p>Training on Proper Handling, Transport and Management of Hazardous Materials shall be conducted in coordination with the DENR-EMB. Recovered busted lights will be temporarily stored at the municipal MRF to the transport by an accredited firm.</p> <p>Coordination with Provincial SWM Board and manufacturers and other recyclers will be conducted for the disposal and transport of special wastes. Expanded Producers Responsibility (EPR) Program will be established thru partnership(s) in the management of special wastes. This scheme will help in the recovery and management of special wastes as well as provide savings for the LGU in the treatment of these materials.</p>
Bauang	The LGU will initiate the management, treatment, and disposal of THW. The municipality will link with THW recycling and treatment companies. Year 1 activities will start with research on THW treatment and management.
Burgos	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
Caba	<p>At present, special wastes are disposed or dig in their own backyard. As included in this plan, the establishment of a SLF and a septic vault for special waste will be a part of the engineering plan of the SLF. IEC campaign will focus on the dangers of illegally dumping special wastes in order to warn encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.</p> <p>As an immediate action to address the problem on toxic and hazardous wastes, the municipality will collaborate with treater for the first five years of the plan implementation. A treatment facility will then be put up at the disposal site.</p>
Luna	Training on handling/collection, treatment, disposal/storage of domestic special/hazardous waste shall be provided by the Municipality. Technical assistance from the Department of Environment and Natural Resources will be sought. Partnership with an accredited THW collector and treater will be done to manage the disposal of special wastes.
Naguilian	<p>Toxic and hazardous wastes will be managed in accordance to RA 9003 and RA 6969. Program to recover, segregate, store and treat the special wastes will be employed.</p> <p>Training on proper handling, transport, and management of hazardous materials shall be conducted in coordination with the DENR-EMB. Recovered busted lights will be temporarily stored at the municipal MRF to the transport by an accredited firm.</p> <p>Coordination with Provincial Solid Waste Management Board and manufacturers and other recyclers will be conducted for the disposal and transport of special wastes. Expanded Producers Responsibility Program will be established thru partnerships in the management of special wastes. This scheme will help in the recovery and management of special wastes as well as provide savings for the LGU in the treatment of these material.</p>
Pugo	<p>Toxic and hazardous wastes will be managed in accordance to RA 9003 and RA 6969. Program to recover, segregate, store and treat the special wastes will be employed.</p> <p>Training on proper handling, transport, and management of hazardous materials shall be conducted in coordination with the DENR-</p>

	EMB Recovered busted lights will be temporarily stored at the municipal MRF. The disposal of this type of wastes will be coordinated with the province in coordination with their province-wide collection and transport.
Rosario	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
City of San Fernando	<p>The City LGU has started with the collection and storage of toxic and hazardous wastes such as busted lamp waste and used oil. They send these accumulated lamp wastes and have them treated and appropriately disposed through an accredited lamp waste treater.</p> <p>In the future, the City LGU plans to expand the present storage facility for these types of waste and to have a treatment and processing facility through PPP.</p>
San Gabriel	<p>At present special wastes are disposed at the municipal dumpsite. These includes batteries, light bulbs, used oils, used tires, pesticides, paints, electrical equipment, and medical wastes among others.</p> <p>IEC on the dangers of illegally dumping of special wastes shall also be done and warn, encourage the people not to mix with regular waste because of the danger it poses to the public. Posters and other IEC materials will be distributed.</p>
San Juan	The planned engineered sanitary land fill will have septic vaults for containment of special waste.
Santo Tomas	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
Santol	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.
Sudipen	The municipality shall construct a Special/ Hazardous waste treatment facility that intends to receive special/ hazardous wastes (e.g. broken bulbs, lamps, defective toys, spray canisters, discarded batteries) from households, commercial, industries and institutions. The barangay MRFs shall serve as temporary storage area for these types of wastes prior to collection and transport to the municipal final disposal facility. Separate schedule of hauling at least once a month in the 17 barangays will be implemented.
Tubao	Special wastes are currently disposed of at the sanitary landfill for temporary storage. The LGU shall conduct IEC campaign focusing on the dangers of illegally disposing special wastes to warn or encourage the people not to mix special waste with regular waste. Posters and other IEC materials will be distributed.

*\*Excerpted from the approved 10-Year Solid Waste Management Plans of LGUs*

Table 7.7.2.3 Toxic and Hazardous Wastes Generated Projection by City/Municipality

Toxic and Hazardous Waste Generation Projection (kg/day)												
LGU's		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT I												
Bangar	kg/d	30.199	30.288	30.357	30.441	30.525	30.610	30.695	30.779	30.864	30.950	31.035
Luna	kg/d	1138.14	1139.22	1139.59	1140.496	1141.403	1142.31	1143.218	1144.127	1145.037	1145.947	1146.858
Sudipen	kg/d	95.061	95.185	95.255	95.365	95.476	95.587	95.698	95.809	95.920	96.031	96.142
Balaoan	kg/d	9.152	9.16599	9.174113	9.186682	9.199268	9.211871	9.224491	9.237128	9.249783	9.262456	9.275145
Santol	kg/d	5.21	5.223212	5.232821	5.245144	5.257497	5.269878	5.282289	5.294728	5.307197	5.319696	5.332224
Bacnotan	kg/d	487.57	489.2357	490.5925	492.1869	493.7865	495.3913	497.0014	498.6166	500.2371	501.8629	503.4939
San Gabriel	kg/d	50.5671	51.18775	51.78368	52.40689	53.03761	53.67592	54.32191	54.97567	55.6373	56.3069	56.98455
San Juan	kg/d	393.568	396.041	398.278	400.707	403.152	405.611	408.085	410.574	413.079	415.599	418.134
City of San Fernando	kg/d	1646.23	1656.559	1665.945	1676.107	1686.331	1696.618	1706.967	1717.38	1727.856	1738.396	1749
DISTRICT II												
Bagulin	kg/d	220.250	221.994	223.619	225.350	227.094	228.852	230.623	232.408	234.207	236.019	237.846
Bauang	kg/d	3402.56	3424.60227	3444.748	3466.484	3488.358	3510.369	3532.52	3554.81	3577.241	3599.813	3622.528
Naguilian	kg/d	506.502	515.124	523.587	532.349	541.258	550.316	559.526	568.889	578.410	588.089	597.931
Burgos	kg/d	0.4025	0.40303113	0.4032726	0.403732	0.404193	0.404653	0.405115	0.405576	0.406039	0.406502	0.406965
Caba	kg/d	339.149	339.903223	340.43562	341.1352	341.8362	342.5387	343.2426	343.948	344.6548	345.3631	346.0728
Aringay	kg/d	354.58	356.565933	358.33509	360.2809	362.2372	364.2041	366.1818	368.1701	370.1693	372.1793	374.2002
Agoo	kg/d	1339.25	1345.5703	1351.0981	1357.178	1363.285	1369.42	1375.583	1381.773	1387.991	1394.237	1400.511
Tubao	kg/d	70.237	70.739	71.200	71.696	72.195	72.698	73.205	73.714	74.228	74.745	75.265
Pugo	kg/d	33.4846	34.4616816	35.445392	36.45931	37.50223	38.57498	39.67841	40.81342	41.98088	43.18175	44.41696
Santo Tomas	kg/d	21.338	21.5730593	21.797835	22.03336	22.27143	22.51207	22.75532	23.00119	23.24972	23.50093	23.75486
Rosario	kg/d	815.10295	819.206374	822.82623	826.8293	830.8518	834.8939	838.9557	843.0372	847.1386	851.2599	855.4013



### 7.7.3. Disaster Wastes

With the unprecedented impacts of climate change such as the occurrence of more frequent and more extreme disaster events, more disaster wastes are expected to be generated and handled.

While waste disposal facilities and other support technologies have been in place in most of the component LGUs which are also being used to manage disaster wastes, it is recommended that LGUs' plan will be revisited and enhanced by integrating the area on disaster waste management. Disaster waste characterization, profiling, and projections shall be conducted and integrated in the plan. To fully institutionalize Disaster Waste Management in the Province, integration of disaster waste management activities in the DRRRM plan is highly recommended together with the creation of its organizational structure and functions and standard operating procedure for the post disaster waste management system. With regards to institutional arrangements in LGUs, the creation of ENRO positions and its office needs to be prioritized. This is for the reason that proper documentation, monitoring/recording, and database management in DWM is lacking hence, a new challenge to LGUs thus the need to create ENRO positions in LGUs. Due to lack of available data on disaster wastes, it is recommended to seek assistance from experts/ academe in the estimation/ forecasting of disaster wastes to be used in planning for DWM. There is no specific fund allotted for Solid Waste Management Programs and Activities, unlike the DRRRM Fund. Thus, it is recommended that a portion of the DRRRM Fund be also allotted to the activities related to DWM. The Barangay Solid Waste Management Committees (BSWMC), as the first hand source of data during disaster events as they are the ones who are in the ground and have experienced

the disaster events first hand must be capacitated, equipped, and mobilized on disaster waste management. Municipal and City LGUs shall also be capacitated on Disaster Waste Management.

#### **7.7.4 Marine Litter**

The Province of La Union shall continue its #KalikasanNaman Campaign focusing on prevention and reduction of marine litters/debris through the installation of plastic bottle recycling sculptures or eco-bins and trash traps. More eco-bins shall be established in developed and developing tourism sites and parks/plazas. Garbage rollers and surf rakes shall be utilized to remove minute marine litters/debris. Regular coastal clean-up activities shall also be conducted in the Province aligned with the Provincial Ordinance No. 347 – 2021 or An Ordinance Mandating All Coastal Barangays to Conduct Coastal Clean-Up and Engage Participation of the Community.

### **7.8 Information, Education, and Communication**

#### **7.8.1 Introduction**

With the premise that providing people with Information, Education and Communication (IEC) does not necessarily lead to desirable change in their behavior, the IEC component of the plan shall employ social and behavioral change communication strategy (SBCC) as the new "IEC" in influencing or changing attitudes and perceptions of the community towards an overall improvement of solid waste management.

While IEC includes only the development of communication materials and activities, SBCC involves the development and implementation of communication messages, communication activities and supportive

environment needed to promote and sustain behavior change. IEC only forms part of the social and behavior change communication (SBCC) strategies.

Aligned with the Sustainable Development Goal 12-8 “Promote Universal Understanding of Sustainable Lifestyles” this plan, through SBCC strategy, aims to ensure and instill awareness and knowledge on solid waste management to the community and all sectors of the society. Its goal is to ensure the people of La Union observe and practice environmental consciousness and stewardship, building a lifestyle in harmony with nature.

### 7.8.2 Core Messages

The Province through the Public Information Office with the support from PG-ENRO shall spearhead the conduct of massive information, education and communication campaigns using quad media (print, radio, television, and internet). With regards to the 2023 Plastic Code of La Union, IEC campaign shall focus on banning SUPs, advocating BYOB and BYOC Programs, #chooseREUSABLES, Bring Your own Reusables, reuse/refill system, and promoting alternative packaging materials. The IEC shall include the production and distribution of materials related and consistent with the provisions of this Ordinance.

Each municipal/city LGU shall create its own IEC teams composed of, but not limited to, MENRO, Information Officer, Public Market Inspector.

Schools shall conduct single-use plastic advocacy campaign during the start of the academic year as part of their orientation program and other environmental protection activities to be included in their extension work plan.

All establishments are encouraged to post signs and other informative materials encouraging customers to bring/use reusable bags. Relevant retailers are encouraged to use quad media advertisements to inform and encourage the community on the incentive mechanisms of the establishment.

The IEC plan focuses on promoting, advocating, and educating the general public on waste minimization, waste diversion, segregation, recycling, composting, community participation on infrastructure projects, research and development, monitoring and evaluation, celebration of environmental events and advocacies, participation to PGLU major events, capacity development, and updates on laws/compliances to environmental permits, registrations, and reporting duties.

### 7.8.3. Approach

Close coordination with and support from concerned agencies such as but not limited to DENR, DILG, DEPED, DOST, CHED, PENRO, DOH, DA, PIA, DTI, community organizations, and private sectors (NGOs, Junkshops) shall be sought for the implementation of the plan.

Research and development investments for environment-friendly alternative materials and closed-loop systems shall be promoted in the higher education institutions and LGUs. The academe which is part of the Solid Waste Management Board of the LGUs shall lead in the conduct of research and development as well as in the communication, education, and public awareness campaign.

Various communication strategies shall also be employed such that of conduct of trainings, seminars, meetings, provision of IEC materials and

infomercials, and various researches. Shown in Table 7.8 is the IEC Plan for solid waste management indicating the objective/purpose, target audience, message, method and implementation schedule.

Table 7.8. Province of La Union IEC Plan for Solid Waste Management

Objective	Activity	Target Audience	Message	Method	Time Frame	Success Indicator
Waste Minimization	Massive Information Campaign on the Provisions of the 2023 Plastic Code of La Union	<ul style="list-style-type: none"> <li>• LGUs</li> <li>• Barangays</li> <li>• Households</li> <li>• Market Vendors</li> <li>• Establishments</li> <li>• Academe</li> <li>• Institutions</li> </ul>	To cause widest dissemination of the provisions of the 2023 Plastic Code of La Union focusing on the following campaigns	<ul style="list-style-type: none"> <li>• Orientation in all of the 20 component LGUs</li> <li>• Use of Mascot</li> <li>• Posting of signages in strategic areas (i.e., public markets, public parks)</li> <li>• Radio interviews</li> <li>• Publication in local newspapers</li> <li>• Posting in electronic billboards</li> </ul>	January – December	Waste Reduction Target
	Conduct of Warning Violation with No Penalties regarding the 2023 Plastic Code of La Union		<ul style="list-style-type: none"> <li>○ Banning of Single-Use Plastics</li> <li>○ Impacts of Microplastic Pollution</li> <li>○ Sulong Bayong/ Bring Your Own Bayong” Campaign</li> <li>○ “Bring your Own Container” Campaign</li> <li>○ #chooseREUSABLES/ “Bring Your own Reusables”</li> <li>○ Practicing reuse/refill system</li> <li>○ Promoting alternative packaging materials</li> <li>○ No Open Burning</li> </ul>			Waste Reduction Target
	Sustainable Palengke	Market goers	To partner with LINK and component LGUs To promote the use of “bayong” among market	<ul style="list-style-type: none"> <li>• Bayong</li> <li>• Volunteers/Youths</li> </ul>	January – December	Waste Reduction Target

			goers provincewide			
Waste Diversion	Ecobricking	General Public	To engage the community in waste diversion program of the Province	<ul style="list-style-type: none"> <li>Partnership with barangay LGUs, schools/ institutions, and government agencies for the ecobricking project</li> </ul>	January-December	Waste Diversion Target
	Lata Mo, Bgas Ko Program			<ul style="list-style-type: none"> <li>Partnership with local junkshops operators</li> </ul>		Waste Diversion Target
	Installation of Plastic Recycling Vending Machine			<ul style="list-style-type: none"> <li>Partnership with obliged companies and establishments</li> </ul>		Waste Diversion Target
Segregation	Provision of IEC waste bins	Barangay LGUs	To facilitate waste segregation in barangays	<ul style="list-style-type: none"> <li>Partnership with private sectors/ companies (i.e., Soiltech)</li> </ul>	January-December	Percentage of LGUs and Barangays practicing Segregation at Source
	Sustainable Kusina	Households	To demonstrate proper waste segregation in the households	<ul style="list-style-type: none"> <li>Partnership with environmental organization</li> </ul>	January-December	Percentage of LGUs and Barangays practicing Segregation at Source
Recycling	Basuramazing	General Public	To promote upcycling in the community	<ul style="list-style-type: none"> <li>Tokens</li> <li>Cash Prize</li> </ul>	January	Percentage of LGUs and Barangays practicing

						Recycling
Composting	Provision of composting equipment such as bioshredders, composters, composting facility, etc	Barangay LGUs	To encourage more barangay LGUs to practice composting in their jurisdictions	<ul style="list-style-type: none"> <li>Partnership with DOST, DA, Senate Committee on Agriculture and Food and Committee on Environment and Natural Resources</li> <li>Bioshredders</li> <li>Composters</li> <li>composting facility and other support materials/ equipment</li> </ul>	January-December	Percentage of LGUs and Barangays practicing Composting
Establishment of Pollution Control Infrastructures	Collaboration with LGUs in the establishment/ upgrading of sanitary landfill facility	LGUs Concerned Agencies General Public	To inform the public on the proposed infrastructure projects and provide them an avenue where they can also express their opinions and suggestions on the proposed projects	<ul style="list-style-type: none"> <li>Consultations</li> </ul>	January-December	Percentage of Pollution Control Infrastructures completed
	Collaboration with LGUs and private entity in the establishment of wastewater treatment facility					
Research and Policy Development	Disaster Waste Characterization, Profiling and Projection	General Public	To conduct researches and studies on the emerging waste management concerns and update data on waste characteristics	<ul style="list-style-type: none"> <li>Research tools and methodologies</li> <li>Waste Analysis and Characterization Study</li> </ul>	January - December	Percentage of Research and Policy Development completed
	Waste Analysis and					Percentage of



	Characterization Study (WACS)		To assist component LGUs in the updating of their plans and WACS data			Research and Policy Development completed
	Compressive Strength of Eco-bricks as alternative Construction Material					Percentage of Research and Policy Development completed
	Microplastic Pollution					Percentage of Research and Policy Development completed
	Marine Litter					Percentage of Research and Policy Development completed
	Transboundary Waste Issues					Percentage of Research and Policy Development completed
	Intensify No Open Burning in all the barangays through the enactment of a policy					Percentage of Research and Policy Development completed
Monitoring and Evaluation	Review and Update of the Plan	Provincial Solid Waste Management Board (PSWMB) Members	To integrate updated WACS data from component LGUs	<ul style="list-style-type: none"> <li>Updating of the plan</li> <li>Meeting</li> </ul>	Annually	Percentage of Monitoring and Evaluation

			To assess and evaluate the status of implementation of the set targets in the plan			conducted
	Conduct of Quarterly PSWMB Meeting	PSWMB members	To assess and evaluate the status of implementation of the set targets in the plan	<ul style="list-style-type: none"> <li>Meetings</li> </ul>	Every 3 <sup>rd</sup> Wednesday of the 3 <sup>rd</sup> Month of Every Quarter	Percentage of meetings conducted
	Joint monitoring in the implementation of Solid Waste Management plans of LGU	LGUs Barangays Households Establishments Junkshop Operators	To monitor compliance on RA 9003, RA 6969, RA 9275 and other related laws	<ul style="list-style-type: none"> <li>Use of monitoring forms</li> </ul>	Annually	Percentage of monitoring areas conducted/covered
	Healthcare Waste Management Monitoring in Provincial and District Hospitals					Percentage of monitoring areas conducted/covered
	Toxic and hazardous waste monitoring					Percentage of monitoring areas conducted/covered
	Wastewater Management Monitoring and Investigation					Percentage of monitoring areas conducted/covered
	Waste Analysis and Characterization Study (WACS)	LGUs Households and Non-Households Sources of Wastes	To establish baseline data prior to the effectivity of the 2023 Plastic Code of La Union	<ul style="list-style-type: none"> <li>Coordination meetings</li> <li>Orientation of WACS cooperators</li> </ul>	As stated	Percentage of LGUs with updated WACS data

			To assess the status of implementation of the 2023 Plastic Code of La Union through the conduct of WACS in every 3 years	<ul style="list-style-type: none"><li>• Use of WACS forms</li></ul>		
Environmental Stewardship	National Zero Waste Month	LGUs General Public	To engage the community in promoting environmental protection	<ul style="list-style-type: none"><li>• Clean-up drives</li><li>• Awareness campaigns using various platforms and approaches</li></ul>	January	Percentage of participation
	Plastic Free July				July	Percentage of participation
	National Clean-Up Month		To instill in the community the habit of keeping the environment litter-free and promote regular clean-up drives in the community		September	Percentage of participation
	National Clean-Up Day				September	Percentage of participation
	International Coastal Clean-Up				September	Percentage of participation
			To raise awareness not just on proper management of wastes but also to instill environmental stewardship in the community – being more responsible of the environment and more conscious of the wastes generated and its impact to the environment and public health			
	E-Waste Collection Event	LGUs General Public	To promote proper management of E-Wastes	<ul style="list-style-type: none"><li>• Partnership with Transporter</li><li>• Partnership with Treater</li><li>• Partnership LGUs</li></ul>	November	Percentage of participation

				and Barangays		
	Brand Audit Coastal Clean-Up	LGU's General Public	To determine the brands most responsible for plastic pollution in the Province and hold them accountable of such through the EPR Law	<ul style="list-style-type: none"> <li>Clean-up drive</li> </ul>	January - December	Percentage of participation
	Clean Coasts Project	LGU's Barangays	To institutionalize Clean Coasts Project in La Union by sustaining and replicating its programs and activities in all of the coastal LGUs	<ul style="list-style-type: none"> <li>Implementation of the Clean Coasts Project Sustainability Plan</li> </ul>	January - December	Percentage of participation
Participation to PGLU Events	La Union Surfing Break	LGU's General Public	To sustain the eco-patrol activity every La Union Surfing Break	<ul style="list-style-type: none"> <li>Deployment of Eco-patrollers</li> </ul>	October- November	Percentage of participation
	La Union Founding Anniversary	LGU's General Public	To raise awareness on #KalikasanNaman and conduct environment-related activities	<ul style="list-style-type: none"> <li>Conduct of environment-related activities</li> </ul>	March	Percentage of participation
Capacity Development	Disaster Waste Management	LGU's	To capacitate LGUs on disaster waste management	<ul style="list-style-type: none"> <li>Attendance to trainings</li> </ul>	January - December	Percentage of LGUs and Barangays Capacitated
	Social and behavioral change communication strategy (SBCC)	LGU's	To explore Social and behavioral change communication strategy (SBCC)	<ul style="list-style-type: none"> <li>Attendance to trainings</li> </ul>	January - December	Percentage of LGUs and Barangays Capacitated
	Extended Producer Responsibility (EPR) Act	LGU's Private Sectors Establishments/ Companies	To be familiarize with the provisions of the EPR Law	<ul style="list-style-type: none"> <li>Attendance/ Facilitation of orientation on the EPR Law</li> </ul>	January - December	Percentage of LGUs and Barangays Capacitated

	National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)	LGUs Barangays	To be familiarize with the National Plan of Action for the Prevention, Reduction, and Management of Marine Debris/Litter (NPOA-ML)	<ul style="list-style-type: none"> <li>Attendance/ Facilitation of orientation on the NPOA-ML</li> </ul>	January - December	Percentage of LGUs and Barangays Capacitated
Updates on Laws/ Compliance to regular reporting duties, registration, and other environmental permits/ requirements	Securing of permits <ul style="list-style-type: none"> <li>- Hazardous Waste Generator's ID</li> <li>- Water Discharge Permit</li> <li>- Permit to Operate (DOH)</li> <li>- PCO Trainings and Accreditation</li> </ul> Preparation of Self-Monitoring Reports (SMR) and Self Compliance Monitoring and Auditing Report (SQMAR)	LGUs	To invite resource speakers from concerned agencies to give an orientation on the process of securing permits and PCO accreditation, and preparation of SMR and SQMAR	<ul style="list-style-type: none"> <li>Orientation</li> </ul>	January - December	Percentage of LGUs apprised on the Updates of Environmental Laws  Compliance Rate of LGUs in the implementation of their 10-Year SWM Plan and on various environmental laws and regulations

## 7.9. Marketing and Market Development

In terms of enterprise development, most of the LGUs reported that they have organized a livelihood program on compost product, recycled products and reusable bags. Few have noted that they produce concrete products mixed with shredded plastics.

In terms of marketing development, some of the LGUs showcase their eco-products during municipal trade fairs/ town fiestas or in other avenues.

Marketing of products made from the SWM programs, shall be done by each of the municipal/city and barangay LGUs. The Province shall also showcase these products during Provincial events or caravans in other localities. For the compost products, the target consumers are the farmers in the different LGUs. Concerned agencies shall be tapped such that of the DTI on their Green MSMEs Program.

### Implementation Strategy

#### 8.1. Framework

Anchored on the Sustainable Development Goals (SDGs), specifically on SDG No. 12-5 "Substantially Reduce Waste Generation," this plan aims to prioritize strategies on waste reduction through prevention, reduction, recycling, and reuse. This is also in line with the concept of circular economy – minimizing waste generation while maximizing recycling activities.

The implementation strategy for solid waste management in the Province of La Union follows the conceptual framework of RA 9003 as shown in Figure 8.1. It covers all elements of waste management – generation, storage, collection, processing and recovery and disposal.

This plan also employs participatory approach involving all stakeholders - local authorities (provincial, municipal/city, barangays) as well as national and regional agencies, NGOs and community organizations, service users or the waste generators, private sectors (both formal and informal) and other persons or organizations that has an interest, influence or role in relation to the solid waste management of the province.

The aspects of sustainability, such as technical, environmental, financial/economic, socio-cultural, institutional and those pertaining to policies are also considered and analyzed.



Department of Environment and Natural Resources

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## CONCEPTUAL FRAMEWORK OF RA 9003

“Ecological Solid Waste Management Act of 2000”

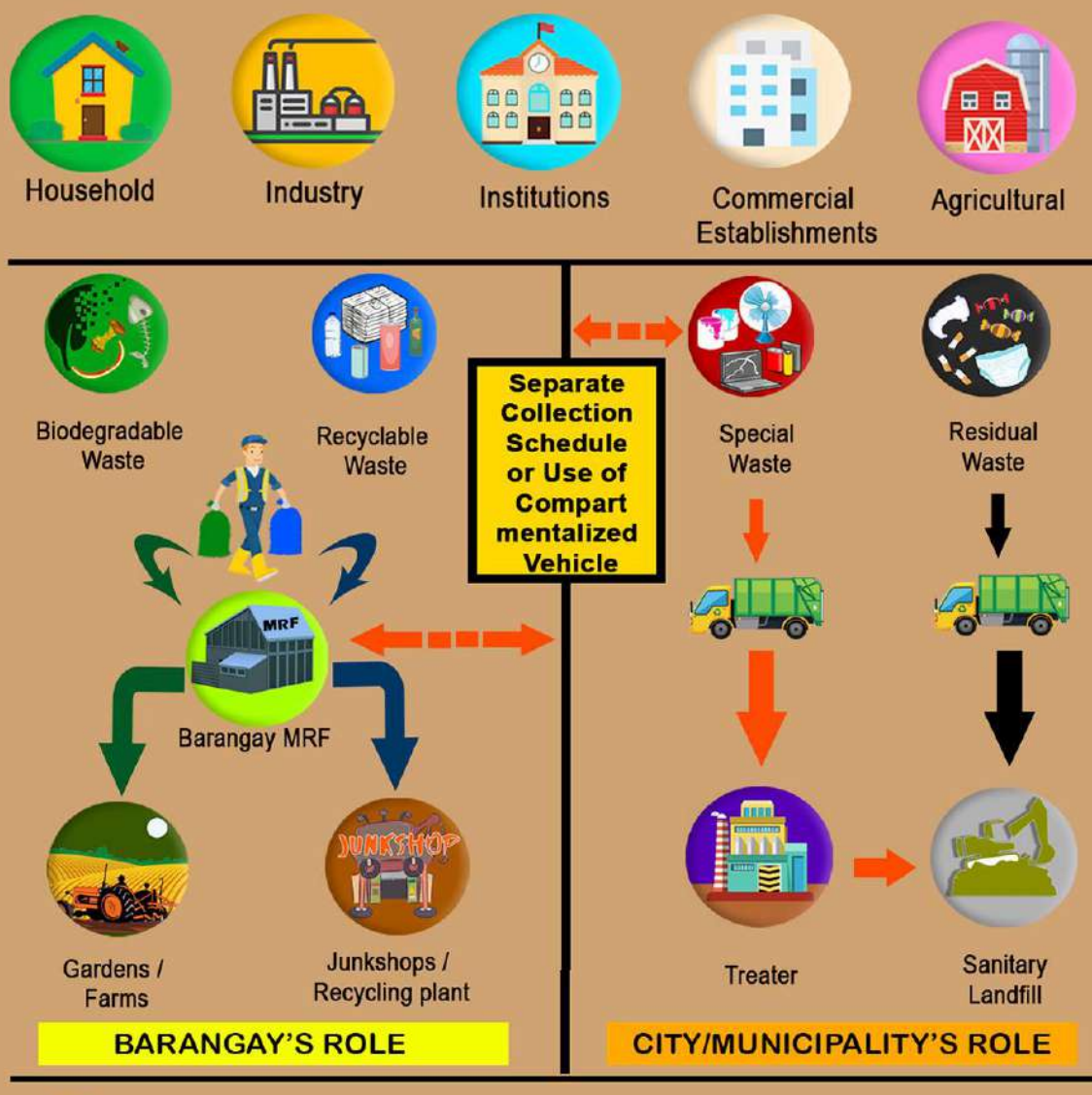


Figure 8.1.1. Conceptual Framework of RA 9003





Figure 8.1.2 Waste Management Hierarchy

As the country celebrates the National Zero Waste Month every month of January through the Presidential Proclamation No. 760 dated May 5, 2014, this plan shall embark on advocating the zero waste goal. As defined by US Environmental Protection Agency, zero waste refers to the “conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.” In order to achieve the zero waste goal, the implementation plan shall follow a hierarchy of options as illustrated the inverted triangle shown in Figure 8.1.2 wherein waste prevention/avoidance as the most preferred option aligned with the ultimate goal to reduce the amount of waste materials entering the waste stream. Behavioral change, then, plays an important role in exercising this option as lifestyle often favors convenience over conservation with minimal regard for long-term environmental impacts.

## 8.2 Diversion Projections

The Province's maximum average waste diversion potential is at 77.83% which is targeted on the 10<sup>th</sup> year of the plan implementation. Shown below are the amount of wastes to be diverted per year in order to reach the waste diversion target.

**Table 8.21 Projected Waste Diversion Requirements**

Year	Waste generation capita per day based on WACS (kg/day)	Projected population	Daily waste generation based on population (kg/day)	Target Waste Diversion (%)	Weight diverted & to be diverted (kg/day)	Target waste disposal (%)	Target weight to disposal (kg/day)	WACS (kg/day)							
								Biodegradables		Recyclables		Residual Waste for Disposal	Residual Waste with Potential		Special
									46.650%		27.358%	18.776%		2.635%	4.581%
<b>baseline 2023</b>	0.282	848,312	239,223.98	76.64%	183,349.06	23.36%	55,874.92	111,598.57	46.650%	71,750.49	29.99%	44,915.73	203.88	0.085%	10,959.19
<b>2024</b>	0.282	854,167	240,875.09	78.64%	189,432.03	21.36%	51,443.07	112,368.82	46.650%	77,063.21	31.99%	40,408.23	325.73	0.135%	11,034.83
<b>2025</b>	0.282	859,560	242,395.92	80.64%	195,475.97	19.36%	46,919.95	113,078.29	46.650%	81,827.50	33.76%	35,815.44	570.18	0.235%	11,104.51
<b>2026</b>	0.282	865,375	244,035.71	82.64%	201,679.06	17.36%	42,356.64	113,843.25	46.650%	86,529.67	35.46%	31,177.02	1,306.14	0.535%	11,179.63
<b>2027</b>	0.282	871,256	245,694.08	84.64%	207,963.48	15.36%	37,730.60	114,616.89	46.650%	91,294.49	37.16%	26,475.00	2,052.10	0.835%	11,255.60
<b>2028</b>	0.282	877,203	247,371.36	86.64%	214,330.61	13.36%	33,040.75	115,399.34	46.650%	96,123.04	38.86%	21,708.31	2,808.23	1.135%	11,332.44
<b>2029</b>	0.282	883,219	249,067.86	88.64%	220,781.87	11.36%	28,285.99	116,190.77	46.650%	101,016.42	40.56%	16,875.83	3,574.69	1.435%	11,410.16
<b>2030</b>	0.282	889,305	250,783.93	90.64%	227,318.73	9.36%	23,465.20	116,991.31	46.650%	105,975.74	42.26%	11,976.43	4,351.67	1.735%	11,488.77
<b>2031</b>	0.282	895,461	252,519.89	92.64%	233,942.66	7.36%	18,577.23	117,801.15	46.650%	111,002.16	43.96%	7,008.93	5,139.35	2.035%	11,568.30
<b>2032</b>	0.282	901,688	254,276.10	94.64%	240,655.19	5.36%	13,620.91	118,620.42	46.650%	116,096.84	45.66%	1,972.16	5,937.92	2.335%	11,648.75
<b>2033</b>	0.282	907,989	256,052.91	96.64%	247,457.88	3.36%	8,595.03	119,449.31	46.650%	121,261.00	47.36%	-3,135.12	6,747.57	2.635%	11,730.15

Table 8.2.2 Diversion Targets for the 10-Year Planning Period of Each City/Municipality

LGU	TYPES OF WASTE TO BE DIVERTED		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT I													
Bangar	Biodegradable	TWD (%)	61.80%	62.30%	62.80%	63.30%	63.80%	64.30%	64.80%	65.30%	65.80%	66.30%	66.80%
		TWD (kg/d)	9275.09	9302.21	9323.67	9349.45	9375.30	9401.22	9427.21	9453.28	9479.42	9505.63	9531.91
	Recyclable	TWD (%)	23.45%	23.95%	24.45%	24.95%	25.45%	25.95%	26.45%	26.95%	27.45%	27.95%	28.45%
		TWD (kg/d)	3518.89	3529.18	3537.32	3547.10	3556.91	3566.74	3576.60	3586.49	3596.41	3606.35	3616.33
	RWPDP	TWD (%)	0.58%	0.98%	1.38%	1.78%	2.18%	2.58%	2.98%	3.38%	3.78%	4.18%	4.58%
		TWD (kg/d)	87.37	87.63	87.83	88.07	88.32	88.56	88.81	89.05	89.30	89.54	89.79
	TOTAL DIVERTED	TWD (%)	85.83%	87.23%	88.63%	90.03%	91.43%	92.83%	94.23%	95.63%	97.03%	98.43%	99.83%
		TWD (kg/d)	12881.35	13129.75	13371.25	13620.03	13870.07	14121.40	14374.01	14627.91	14883.10	15139.59	15397.39
Luna	Biodegradable	TWD (%)	48.74%	49.34%	49.94%	50.54%	51.14%	51.74%	52.34%	52.94%	53.54%	54.14%	54.74%
		TWD (kg/d)	9659.91	9788.10	9910.34	10037.38	10135.55	10264.19	10386.59	10514.01	10641.62	10769.43	10897.43
	Recyclable	TWD (%)	28.53%	29.13%	29.73%	30.33%	30.93%	31.53%	32.13%	32.73%	33.33%	33.93%	34.53%
		TWD (kg/d)	5655.07	5779.45	5900.40	6024.24	6130.71	6255.55	6376.65	6500.88	6625.30	6749.91	6874.72
	RWPDP	TWD (%)	0.68%	1.28%	1.88%	2.48%	3.08%	3.68%	4.28%	4.88%	5.48%	6.08%	6.68%
		TWD (kg/d)	134.62	253.77	372.92	492.37	610.27	729.87	849.17	969.00	1089.03	1209.24	1329.64
	TOTAL DIVERTED	TWD (%)	77.95%	79.75%	81.55%	83.35%	85.15%	86.95%	88.75%	90.55%	92.35%	94.15%	95.95%
		TWD (kg/d)	15449.59	15821.32	16183.65	16553.99	16876.53	17249.61	17612.41	17983.89	18355.94	18728.57	19101.79
Sudipen	Biodegradable	TWD (%)	27.540%	28.140%	28.740%	29.340%	29.940%	30.540%	31.140%	31.740%	32.340%	32.940%	33.540%
		TWD (kg/d)	307.24	314.34	321.28	328.37	334.01	341.15	348.11	355.23	362.36	369.51	376.68
	Recyclable	TWD (%)	35.98%	36.58%	37.18%	37.78%	38.38%	38.98%	39.58%	40.18%	40.78%	41.38%	41.98%
		TWD (kg/d)	401.37	408.59	415.60	422.80	428.14	435.40	442.43	449.66	456.90	464.16	471.44
	RWPDP	TWD (%)	13.88%	14.48%	15.08%	15.68%	16.28%	16.88%	17.48%	18.08%	18.68%	19.28%	19.88%
		TWD (kg/d)	154.81	161.71	168.54	175.45	181.58	188.52	195.37	202.31	209.27	216.24	223.23
	TOTAL DIVERTED	TWD (%)	77.39%	79.19%	80.99%	82.79%	84.59%	86.39%	88.19%	89.99%	91.79%	93.59%	95.39%
		TWD (kg/d)	863.41	884.64	905.42	926.61	943.73	965.07	985.90	1007.19	1028.53	1049.91	1071.35
	TOTAL WASTE GENERATED		1115.60	1117.06	1117.88	1119.17	1115.60	1117.06	1117.88	1119.17	1120.47	1121.77	1123.07

Table 8.2.2 Diversion Targets for the 10-Year Planning Period of Each City/Municipality (continuation)

LGU	TYPES OF WASTE TO BE DIVERTED		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT I													
Balaoan	Biodegradable	TWD (%)	50.29%	51.09%	51.89%	52.69%	53.49%	54.29%	55.09%	55.89%	56.69%	57.49%	58.29%
		TWD (kg/d)	393.74	400.61	407.24	414.09	418.79	425.70	432.36	439.24	446.13	453.05	459.98
	Recyclable	TWD (%)	20.10%	20.90%	21.70%	22.50%	23.30%	24.10%	24.90%	25.70%	26.50%	27.30%	28.10%
		TWD (kg/d)	157.35	163.87	170.29	176.81	182.41	188.96	195.40	201.96	208.53	215.12	221.73
	RWD	TWD (%)	1.14%	1.94%	2.74%	3.54%	4.34%	5.14%	5.94%	6.74%	7.54%	8.34%	9.14%
		TWD (kg/d)	8.91	15.20	21.49	27.81	33.97	40.29	46.61	52.96	59.33	65.71	72.11
	TOTAL DIVERTED	TWD (%)	71.53%	73.93%	76.33%	78.73%	81.13%	83.53%	85.93%	88.33%	90.73%	93.13%	95.53%
		TWD (kg/d)	560.00	579.68	599.03	618.71	635.16	654.95	674.37	694.15	713.99	733.88	753.83
Santol	Biodegradable	TWD (%)	30.64%	30.94%	31.24%	31.54%	31.84%	32.14%	32.44%	32.74%	33.04%	33.34%	33.64%
		TWD (kg/d)	205.79	208.33	210.74	213.27	213.85	216.42	218.84	221.38	223.94	226.50	229.08
	Recyclable	TWD (%)	46.56%	46.86%	47.16%	47.46%	47.76%	48.06%	48.36%	48.66%	48.96%	49.26%	49.56%
		TWD (kg/d)	312.77	315.58	318.18	320.96	320.83	323.66	326.28	329.08	331.89	334.71	337.54
	RWD	TWD (%)	12.81%	13.11%	13.41%	13.71%	14.01%	14.31%	14.61%	14.91%	15.21%	15.51%	15.81%
		TWD (kg/d)	86.05	88.29	90.47	92.72	94.11	96.37	98.57	100.83	103.10	105.38	107.68
	TOTAL DIVERTED	TWD (%)	90.01%	90.91%	91.81%	92.71%	93.61%	94.51%	95.41%	96.31%	97.21%	98.11%	99.01%
		TWD (kg/d)	604.61	612.20	619.40	626.95	628.79	636.45	643.69	651.29	658.93	666.59	674.29
Bacnotan	Biodegradable	TWD (%)	37.93%	38.43%	38.93%	39.43%	39.93%	40.43%	40.93%	41.43%	41.93%	42.43%	42.93%
		TWD (kg/d)	3038.60	3089.17	3138.03	3188.66	3198.81	3249.92	3299.24	3350.39	3401.84	3453.59	3505.65
	Recyclable	TWD (%)	35.57%	36.07%	36.57%	37.07%	37.57%	38.07%	38.57%	39.07%	39.57%	40.07%	40.57%
		TWD (kg/d)	2849.41	2899.33	2947.68	2997.69	3009.62	3060.09	3108.88	3159.42	3210.25	3261.38	3312.80
	RWD	TWD (%)	10.33%	10.83%	11.33%	11.83%	12.33%	12.83%	13.33%	13.83%	14.33%	14.83%	15.33%
		TWD (kg/d)	827.31	870.33	913.04	956.44	987.52	1031.09	1074.25	1118.17	1162.37	1206.84	1251.59
	TOTAL DIVERTED	TWD (%)	83.83%	85.33%	86.83%	88.33%	89.83%	91.33%	92.83%	94.33%	95.83%	97.33%	98.83%
		TWD (kg/d)	6715.32	6858.83	6998.75	7142.79	7195.95	7341.10	7482.36	7627.98	7774.46	7921.81	8070.04

Table 8.2.2 Diversion Targets for the 10-Year Planning Period of Each City/Municipality (continuation)

LGU	TYPES OF WASTE TO BE DIVERTED		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT I													
San Gabriel	Biodegradable	TWD (%)	48.64%	49.64%	50.64%	51.64%	52.64%	53.64%	54.64%	55.64%	56.64%	57.64%	58.64%
		TWD (kg/d)	725.67	749.68	773.68	798.45	785.34	810.08	834.79	860.30	886.30	912.80	939.81
	Recyclable	TWD (%)	14.70%	15.70%	16.70%	17.70%	18.70%	19.70%	20.70%	21.70%	22.70%	23.70%	24.70%
		TWD (kg/d)	219.29	237.09	255.12	273.66	278.97	297.49	316.23	335.50	355.18	375.29	395.84
	RWPDP	TWD (%)	3.50%	4.50%	5.50%	6.50%	7.50%	8.50%	9.50%	10.50%	11.50%	12.50%	13.50%
		TWD (kg/d)	52.17	67.91	83.98	100.45	111.84	128.31	145.08	162.29	179.89	197.89	216.30
	TOTAL DIVERTED	TWD (%)	66.84%	69.84%	72.84%	75.84%	78.84%	81.84%	84.84%	87.84%	90.84%	93.84%	96.84%
		TWD (kg/d)	997.13	1054.67	1112.78	1172.55	1176.15	1235.89	1296.10	1358.09	1421.37	1485.98	1551.95
San Juan	Biodegradable	TWD (%)	50.71%	51.21%	51.71%	52.21%	52.71%	53.21%	53.71%	54.21%	54.71%	55.21%	55.71%
		TWD (kg/d)	5694.93	5787.22	5876.73	5969.75	6063.69	6158.55	6254.35	6351.08	6448.76	6547.40	6647.00
	Recyclable	TWD (%)	25.47%	25.97%	26.47%	26.97%	27.47%	27.97%	28.47%	28.97%	29.47%	29.97%	30.47%
		TWD (kg/d)	2860.88	2935.36	3008.77	3084.30	3160.63	3237.79	3315.77	3394.57	3474.22	3554.71	3636.06
	RWPDP	TWD (%)	4.60%	4.60%	5.10%	5.60%	6.10%	6.60%	7.10%	7.60%	8.10%	8.60%	9.10%
		TWD (kg/d)	516.32	519.57	579.33	640.04	701.47	763.62	826.50	890.13	954.50	1019.62	1085.50
	TOTAL DIVERTED	TWD (%)	80.78%	81.78%	83.28%	84.78%	86.28%	87.78%	89.28%	90.78%	92.28%	93.78%	95.28%
		TWD (kg/d)	9072.13	9242.15	9464.83	9694.09	9925.79	10159.96	10396.62	10635.79	10877.48	11121.74	11368.56
City of San Fernando	Biodegradable	TWD (%)	41.53%	42.53%	43.53%	44.53%	45.53%	46.53%	47.53%	48.53%	49.53%	50.53%	51.53%
		TWD (kg/d)	21993.00	22663.92	23328.27	24009.79	24698.75	25395.22	26099.28	26810.97	27530.38	28257.57	28992.60
	Recyclable	TWD (%)	23.75%	24.75%	25.75%	26.75%	27.75%	28.75%	29.75%	30.75%	31.75%	32.75%	33.75%
		TWD (kg/d)	12580.00	13191.86	13802.54	14425.95	15056.45	15694.11	16338.99	16991.15	17650.65	18317.57	18991.98
	RWPDP	TWD (%)	1.26%	2.26%	3.26%	4.26%	5.26%	6.26%	7.26%	8.26%	9.26%	10.26%	11.26%
		TWD (kg/d)	669.64	1206.77	1749.55	2299.43	2855.96	3419.20	3989.20	4566.02	5149.74	5740.40	6338.08
	TOTAL DIVERTED	TWD (%)	66.55%	69.55%	72.55%	75.55%	78.55%	81.55%	84.55%	87.55%	90.55%	93.55%	96.55%
		TWD (kg/d)	35242.64	37062.54	38880.36	40735.17	42611.17	44508.53	46427.46	48368.14	50330.77	52315.55	54322.66

Table 8.2.2 Diversion Targets for the 10-Year Planning Period of Each City/Municipality (continuation)

LGU	TYPES OF WASTE TO BE DIVERTED		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT II													
Bagulin	Biodegradable	TWD (%)	35.92%	36.42%	36.92%	37.42%	37.92%	38.42%	38.92%	39.42%	39.92%	40.42%	40.92%
		TWD (kg/d)	749.02	765.46	781.64	798.36	815.29	832.43	849.79	867.37	885.17	903.19	921.44
	Recyclable	TWD (%)	38.57%	39.07%	39.57%	40.07%	40.57%	41.07%	41.57%	42.07%	42.57%	43.07%	43.57%
		TWD (kg/d)	804.28	821.16	837.75	854.90	872.27	889.85	907.65	925.68	943.93	962.41	981.11
	RWPDP	TWD (%)	8.99%	9.49%	9.99%	10.49%	10.99%	11.49%	11.99%	12.49%	12.99%	13.49%	13.99%
		TWD (kg/d)	187.42	199.42	211.46	223.76	236.24	248.90	261.75	274.77	287.99	301.39	314.98
	TOTAL DIVERTED	TWD (%)	83.49%	84.99%	86.49%	87.99%	89.49%	90.99%	92.49%	93.99%	95.49%	96.99%	98.49%
		TWD (kg/d)	1740.72	1786.03	1830.85	1877.02	1923.80	1971.19	2019.19	2067.82	2117.08	2166.98	2217.53
Bauang	Biodegradable	TWD (%)	48.64%	49.34%	50.04%	50.74%	51.44%	52.14%	52.84%	53.54%	54.24%	54.94%	55.64%
		TWD (kg/d)	23948.488	24450.516	24943.276	25451.796	25965.741	26485.159	27010.098	27540.606	28076.735	28618.533	29166.05
	Recyclable	TWD (%)	25.61%	26.31%	27.01%	27.71%	28.41%	29.11%	29.81%	30.51%	31.21%	31.91%	32.61%
		TWD (kg/d)	12609.34	13037.911	13463.535	13899.619	14340.669	14786.733	15237.854	15694.08	16155.457	16622.032	17093.851
	RWPDP	TWD (%)	0.75%	1.45%	2.15%	2.85%	3.55%	4.25%	4.95%	5.65%	6.35%	7.05%	7.75%
		TWD (kg/d)	370.97	720.25931	1073.4231	1431.3248	1793.7005	2160.5925	2532.0431	2908.0955	3288.7928	3674.1788	4064.2973
	TOTAL DIVERTED	TWD (%)	75.00%	77.10%	79.20%	81.30%	83.40%	85.50%	87.60%	89.70%	91.80%	93.90%	96.00%
		TWD (kg/d)	36928.798	38208.686	39480.234	40782.74	42100.111	43432.484	44779.995	46142.782	47520.985	48914.743	50324.199
	TOTAL WASTE GENERATED		49236.2	49555.159	49846.674	50161.207	50477.724	50796.239	51116.763	51439.31	51763.892	52090.522	52419.213
Naguilian	Biodegradable	TWD (%)	41.10%	41.60%	42.10%	42.60%	43.10%	43.60%	44.10%	44.60%	45.10%	45.60%	46.10%
		TWD (kg/d)	3468.14	3570.09	3672.35	3778.15	3886.46	3997.34	4110.85	4227.03	4345.95	4467.66	4592.24
	Recyclable	TWD (%)	32.03%	32.53%	33.03%	33.53%	34.03%	34.53%	35.03%	35.53%	36.03%	36.53%	37.03%
		TWD (kg/d)	2702.76	2791.68	2881.15	2973.71	3068.56	3165.76	3265.34	3367.37	3471.91	3579.00	3688.70
	RWPDP	TWD (%)	9.51%	10.01%	10.51%	11.01%	11.51%	12.01%	12.51%	13.01%	13.51%	14.01%	14.51%
		TWD (kg/d)	802.12	858.69	916.41	976.09	1037.51	1100.71	1165.74	1232.63	1301.44	1372.21	1444.98
	TOTAL DIVERTED	TWD (%)	82.64%	84.14%	85.64%	87.14%	88.64%	90.14%	91.64%	93.14%	94.64%	96.14%	97.64%
		TWD (kg/d)	6973.02	7220.45	7469.91	7727.95	7992.54	8263.81	8541.93	8827.04	9119.30	9418.87	9725.91

Table 8.2.2 Diversion Targets for the 10-Year Planning Period of Each City/Municipality (continuation)

LGU	TYPES OF WASTE TO BE DIVERTED		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT II													
Burgos	Biodegradable	TWD (%)	52.99%	53.59%	54.19%	54.79%	55.39%	55.99%	56.59%	57.19%	57.79%	58.39%	58.99%
		TWD (kg/d)	38.86	39.35	39.82	40.30	40.79	41.28	41.77	42.26	42.75	43.25	43.74
	Recyclable	TWD (%)	21.50%	22.10%	22.70%	23.30%	23.90%	24.50%	25.10%	25.70%	26.30%	26.90%	27.50%
		TWD (kg/d)	15.77	16.23	16.68	17.14	17.60	18.07	18.53	18.99	19.46	19.93	20.39
	RWD	TWD (%)	1.00%	1.60%	2.20%	2.80%	3.40%	4.00%	4.60%	5.20%	5.80%	6.40%	7.00%
		TWD (kg/d)	0.73	1.17	1.62	2.06	2.50	2.95	3.39	3.84	4.29	4.74	5.19
	TOTAL DIVERTED	TWD (%)	75.49%	77.29%	79.09%	80.89%	82.69%	84.49%	86.29%	88.09%	89.89%	91.69%	93.49%
		TWD (kg/d)	55.36	56.76	58.11	59.50	60.90	62.29	63.69	65.10	66.50	67.91	69.32
Caba	Biodegradable	TWD (%)	30.69%	31.19%	31.69%	32.19%	32.69%	33.19%	33.69%	34.19%	34.69%	35.19%	35.69%
		TWD (kg/d)	1099.1348	1119.5274	1139.2573	1159.6119	1180.0452	1200.5577	1221.1494	1241.8208	1262.5719	1283.4031	1304.3145
	Recyclable	TWD (%)	42.18%	42.68%	43.18%	43.68%	44.18%	44.68%	45.18%	45.68%	46.18%	46.68%	47.18%
		TWD (kg/d)	1510.8795	1532.1878	1552.5641	1573.7679	1595.0524	1616.4177	1637.864	1659.3917	1681.0009	1702.692	1724.4651
	RWD	TWD (%)	6.46%	6.96%	7.46%	7.96%	8.46%	8.96%	9.46%	9.96%	10.46%	10.96%	11.46%
		TWD (kg/d)	231.5015	249.96462	268.33254	286.8973	305.53724	324.25257	343.04353	361.91035	380.85327	399.87251	418.96832
	TOTAL DIVERTED	TWD (%)	79.33%	80.83%	82.33%	83.83%	85.33%	86.83%	88.33%	89.83%	91.33%	92.83%	94.33%
		TWD (kg/d)	2841.5158	2901.6798	2960.1539	3020.2771	3080.6348	3141.2279	3202.057	3263.1228	3324.4261	3385.9676	3447.7479
Aringay	Biodegradable	TWD (%)	35.99%	36.39%	36.79%	37.19%	37.59%	37.99%	38.39%	38.79%	39.19%	39.59%	39.99%
		TWD (kg/d)	3467.6291	3525.8037	3582.243	3640.8514	3699.9907	3759.6649	3819.8781	3880.6344	3941.9378	4003.7926	4066.2028
	Recyclable	TWD (%)	45.23%	45.63%	46.03%	46.43%	46.83%	47.23%	47.63%	48.03%	48.43%	48.83%	49.23%
		TWD (kg/d)	4357.4426	4420.6009	4481.4798	4544.9711	4609.0198	4673.63	4738.806	4804.552	4870.8723	4937.7712	5005.253
	RWD	TWD (%)	7.68%	7.98%	8.28%	8.58%	8.88%	9.18%	9.48%	9.78%	10.08%	10.38%	10.68%
		TWD (kg/d)	739.52	772.72	805.77	839.51	873.59	908.02	942.80	977.93	1013.42	1049.26	1085.46
	TOTAL DIVERTED	TWD (%)	88.90%	90.00%	91.10%	92.20%	93.30%	94.40%	95.50%	96.60%	97.70%	98.80%	99.90%
		TWD (kg/d)	8564.59	8719.13	8869.49	9025.33	9182.60	9341.32	9501.49	9663.12	9826.23	9990.82	10156.91

Table 8.2.2 Diversion Targets for the 10-Year Planning Period of Each City/Municipality (continuation)

LGU	TYPES OF WASTE TO BE DIVERTED		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT II													
Agoo	Biodegradable	TWD (%)	52.23%	52.73%	53.23%	53.73%	54.23%	54.73%	55.23%	55.73%	56.23%	56.73%	57.23%
		TWD (kg/d)	19351.28	19628.742	19896.283	20173.56	20452.929	20734.405	21018	21303.727	21591.6	21881.632	22173.838
	Recyclable	TWD (%)	22.63%	23.13%	23.63%	24.13%	24.63%	25.13%	25.63%	26.13%	26.63%	27.13%	27.63%
		TWD (kg/d)	8386.44	8612.1561	8834.4388	9061.9376	9291.3051	9522.5533	9755.6946	9990.7414	10227.706	10466.601	10707.439
	RWPD	TWD (%)	0.86%	1.36%	1.86%	2.36%	2.86%	3.36%	3.86%	4.36%	4.86%	5.36%	5.86%
		TWD (kg/d)	319.0316	506.67531	695.6596	886.53392	1079.112	1273.4054	1469.4255	1667.1841	1866.6927	2067.9631	2271.0072
	TOTAL DIVERTED	TWD (%)	75.72%	77.22%	78.72%	80.22%	81.72%	83.22%	84.72%	86.22%	87.72%	89.22%	90.72%
		TWD (kg/d)	28056.752	28747.574	29426.381	30122.031	30823.347	31530.364	32243.12	32961.652	33685.999	34416.196	35152.284
Tubao	Biodegradable	TWD (%)	41.85%	42.35%	42.85%	43.35%	43.85%	44.35%	44.85%	45.35%	45.85%	46.35%	46.85%
		TWD (kg/d)	541.5765	551.96372	562.12214	572.64282	583.28279	594.04319	604.92518	615.92995	627.05866	638.31252	649.69273
	Recyclable	TWD (%)	34.38%	34.88%	35.38%	35.88%	36.38%	36.88%	37.38%	37.88%	38.38%	38.88%	39.38%
		TWD (kg/d)	444.9466	454.64334	464.16727	474.00569	483.95865	494.02726	504.21264	514.51594	524.93831	535.4809	546.14488
	RWPD	TWD (%)	8.50%	9.00%	9.50%	10.00%	10.50%	11.00%	11.50%	12.00%	12.50%	13.00%	13.50%
		TWD (kg/d)	110.0028	117.30616	124.63076	132.10432	139.67593	147.34661	155.11737	162.98922	170.9632	179.04036	187.22173
	TOTAL DIVERTED	TWD (%)	84.73%	86.23%	87.73%	89.23%	90.73%	92.23%	93.73%	95.23%	96.73%	98.23%	99.73%
		TWD (kg/d)	1096.5259	1123.9132	1150.9202	1178.7528	1206.9174	1235.4171	1264.2552	1293.4351	1322.9602	1352.8338	1383.0593
Pugo	Biodegradable	TWD (%)	54.47%	54.97%	55.47%	55.97%	56.47%	56.97%	57.47%	57.97%	58.47%	58.97%	59.47%
		TWD (kg/d)	715.9848	743.64081	771.82469	801.05835	831.33292	862.68404	895.14852	928.76441	963.57101	999.60894	1036.9202
	Recyclable	TWD (%)	19.30%	19.80%	20.30%	20.80%	21.30%	21.80%	22.30%	22.80%	23.30%	23.80%	24.30%
		TWD (kg/d)	253.72875	267.89612	282.49984	297.73636	313.61341	330.15516	347.38665	365.33381	384.02348	403.48345	423.7425
	RWPD	TWD (%)	6.94%	7.44%	7.94%	8.44%	8.94%	9.44%	9.94%	10.44%	10.94%	11.44%	11.94%
		TWD (kg/d)	91.1644	100.58813	110.41604	120.73011	131.54389	142.87755	154.75196	167.1888	180.21053	193.84043	208.10265
	TOTAL DIVERTED	TWD (%)	80.71%	82.21%	83.71%	85.21%	86.71%	88.21%	89.71%	91.21%	92.71%	94.21%	95.71%
		TWD (kg/d)	1060.878	1112.1251	1164.7406	1219.5248	1276.4902	1335.7167	1397.2871	1461.287	1527.805	1596.9328	1668.7653



Table 8.2.2 Diversion Targets for the 10-Year Planning Period of Each City/Municipality (continuation)

LGU	TYPES OF WASTE TO BE DIVERTED		2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
DISTRICT II													
Santo Tomas	Biodegradable	TWD (%)	37.30%	37.80%	38.30%	38.80%	39.30%	39.80%	40.30%	40.80%	41.30%	41.80%	42.30%
		TWD (kg/d)	447.10	458.09	468.98	480.24	491.68	503.32	515.15	527.18	539.40	551.83	564.47
	Recyclable	TWD (%)	29.84%	30.34%	30.84%	31.34%	31.84%	32.34%	32.84%	33.34%	33.84%	34.34%	34.84%
		TWD (kg/d)	357.66	367.65	377.61	387.88	398.32	408.95	419.76	430.76	441.94	453.32	464.89
	RWPD	TWD (%)	10.51%	11.01%	11.51%	12.01%	12.51%	13.01%	13.51%	14.01%	14.51%	15.01%	15.51%
		TWD (kg/d)	126.00	133.45	140.96	148.67	156.54	164.55	172.72	181.05	189.53	198.18	207.00
	TOTAL DIVERTED	TWD (%)	77.65%	79.15%	80.65%	82.15%	83.65%	85.15%	86.65%	88.15%	89.65%	91.15%	92.65%
		TWD (kg/d)	930.75875	959.19041	987.5523	1016.7891	1046.5424	1076.82	1107.6297	1138.9794	1170.8774	1203.3316	1236.3505
Rosario	Biodegradable	TWD (%)	43.19%	43.59%	43.99%	44.39%	44.79%	45.19%	45.59%	45.99%	46.39%	46.79%	47.19%
		TWD (kg/d)	6136.9249	6224.9451	6309.8292	6398.1835	6487.2481	6577.0279	6667.5277	6758.7524	6850.7069	6943.3962	7036.8251
	Recyclable	TWD (%)	38.31%	38.71%	39.11%	39.51%	39.91%	40.31%	40.71%	41.11%	41.51%	41.91%	42.31%
		TWD (kg/d)	5444.2196	5528.7524	5610.5603	5695.5127	5781.1588	5867.5034	5954.5514	6042.3075	6130.7765	6219.9633	6309.8727
	RWPD	TWD (%)	5.55%	5.95%	6.35%	6.75%	7.15%	7.55%	7.95%	8.35%	8.75%	9.15%	9.55%
		TWD (kg/d)	788.10166	849.19454	910.32472	972.4104	1035.0786	1098.3336	1162.1796	1226.6207	1291.6614	1357.3059	1423.5586
	TOTAL DIVERTED	TWD (%)	87.05%	88.25%	89.45%	90.65%	91.85%	93.05%	94.25%	95.45%	96.65%	97.85%	99.05%
		TWD (kg/d)	12369.246	12602.892	12830.714	13066.107	13303.486	13542.865	13784.259	14027.681	14273.145	14520.665	14770.256

### 8.3. Monitoring Program

By virtue of the Provincial Solid Waste Management Board (PSWMB) Resolution No. 01, Series of 2019 "Approving the Conduct of Joint Monitoring of the Provincial Government of La Union- Environment and Natural Resources Unit (PG-ENRO) and the Environmental Management Bureau (EMB) - Ecological Solid Waste Management Section, Region I on the Compliance of Local Government Units (LGUs) with RA 9003 (Ecological Solid Waste Management Act of 2000),"the provincial solid waste management monitoring system covers the following monitoring areas: (1) final waste disposal facilities (WDFs); (2) materials recovery facilities (MRFs); (3) waste generation and collection systems; and (4) programs, projects, and activities indicated in the respective approved plans of the component LGUs such as but not limited to creation of Municipal/City Environment and Natural Resources Officer, segregation at source, collection of wastes, operational management of barangay Materials Recovery Facilities (MRFs), establishment/maintenance of sanitary landfill facilities, special wastes management, among others. The said joint monitoring activity is conducted annually. This activity aims to ensure the compliance of the component LGUs of La Union to Republic Act 9003 or the Ecological Solid Waste Management Act of 2000. Spot inspection is conducted in public markets, schools, barangays and households. Compliance of the LGUs with the provisions of their Environmental Compliance Certificate (ECC) is also monitored. Findings of the said monitoring are discussed with the Local Chief Executives and concerned offices of city/municipality.

In 2019, all of the 10-year solid waste management plans of component LGUs of the Province of La Union has been approved by the National Solid Waste Management Commission (NSWMC) ExeCom. As mandated in the NSWMC Resolutions approving the plans of the LGUs, monitoring shall be conducted to determine the compliance of LGUs on the 10-year SWM plan thus a joint

monitoring of PGLU and DENR-EMB Region 1 shall be continued and held annually. Further to this, it was also mandated in the 10-Year SWM Plan of the Provincial Government of La Union (PGLU) approved on CY 2018 that a regular monitoring of compliance of component LGUs to RA 9003 shall be conducted. To strengthen the monitoring team, other agencies such that from the DILG and other concerned agencies shall be included to be part of the team.

Furthermore, as a requirement in Section 16 of RA 9003, review and updating of the 10-Year Solid Waste Management Plan shall be conducted every year. Conduct of Waste Analysis and Characterization Study (WACS) prior to the effectivity of the 2023 Plastic Code of La Union to establish baseline information and in every 3 years as a means of monitoring to assess the status of implementation and evaluate if the overall objectives are met. The PGLU through the PG-ENRO's Waste Management Section shall continue its assistance to the component LGUs in the updating of their respective waste characteristics data and plan.

**Table 8.3. Monitoring Programs of the Province**

Member of the Monitoring Team	Implementation Schedule	Responsibilities
PSWMB Members	Annually	To review and update of the plan
	Quarterly	To conduct of quarterly PSWMB meeting to assess and evaluate the status of implementation of the set targets in the plan
PG-ENRO Integrated Waste Management Section, DENR-EMBRI, DILG, LGUs, Barangays	Annually	To conduct joint monitoring in the implementation of Solid Waste Management plans of LGU and their compliance on RA 9003, RA 6969, RA 9275, and other related laws
PG-ENRO Integrated Waste Management Section	Annually	To conduct Healthcare Waste Management Monitoring in Provincial and District Hospitals
PG-ENRO Integrated Waste Management Section	Annually	To conduct Toxic and hazardous waste monitoring
PG-ENRO Integrated Waste Management Section	Annually	To conduct Wastewater Management Monitoring and Investigation
PG-ENRO Integrated Waste Management Section, component LGUs	Prior to the effectivity of the 2023 Plastic Code of La Union and in every 3 years	To conduct Waste Analysis and Characterization Study (WACS) to be able to establish baseline data prior to the effectivity of the 2023 Plastic Code of La Union and to assess the status of implementation of the 2023 Plastic Code of La Union through the conduct of WACS in every 3 years

## 8.4 Incentive Programs

The PGLU held various incentive programs among component city/municipalities and barangays as well as to the establishments and institutions to encourage extensive participation especially on solid waste management programs and activities. Below are the incentivized-scheme programs of PGLU with a component of waste management which shall be continued and enhanced in the following years. Through the incentivized program of this plan, all sectors – the LGUs, the barangays, the institutions, the establishments, and the non-government organizations shall be incentivized / awarded in recognition of their invaluable support and outstanding practices and compliances in solid waste management,

### A. Search for the Cleanest, Safest, and Greenest LGU

The Search for the Cleanest, Safest, and Greenest Local Government Units is an incentivized scheme-based program that identifies, recognizes, and rewards those component LGUs with outstanding implementation of environmental management programs. This Search was originally launched by the Regional Development Council Region 1 in 2006 and has been institutionalized in the Province of La Union through the Executive Order No. 12 s. 2018 *“Creating and Organizing the Provincial Search Committee (PSC) for the Search for Cleanest, Safest, and Greenest LGUs in the Province of La Union.”* This was later amended through the Executive Order No. 05 series of 2019 *“Updating the Provincial Search Committee (PSC) for the Search for Cleanest, Safest, and Greenest LGUs in the Province of La Union”* and was then enacted through the Provincial Ordinance No. 267 - 2020 *“Institutionalizing the Search for Cleanest, Safest, and Greenest Local Government Unit in the Province of La Union.”*

The Search consists of the three (3) awards, namely, the Winner LGUs in Category A (1<sup>st</sup> - 3<sup>rd</sup> Class Municipalities) and Category B (4<sup>th</sup> - 5<sup>th</sup> Class Municipalities), Awardee on Municipal Bodies of Water for Freshwater and Coastal Water, and Awardee on Best *Magsidalus iti Arubayan* (MIA) Barangay Implementer for Urban and Rural Barangays. The winners are awarded through a project-based worth of prizes to fund environmental management projects particularly solid waste management projects. The Search aims to mobilize all sectors of the society in transforming and helping their communities into clean, safe, and green areas, promote a venue for people's participation in community development efforts and to institutionalize a system of providing recognition to the cleanest local government units throughout the country.



Figure 8.4.1. Search for the Cleanest, Safest, and Greenest LGUs

## SoLUsyon sa PoLUsyon

Search for the Cleanest, Safest, and Greenest Municipal Bodies of Water



Figure 8.4.2. Search for the Cleanest, Safest, and Greenest Municipal Bodies of Water

## SoLUsyon sa PoLUsyon

Search for the Best Barangay Implementer of Magsidalusiti Arubayan

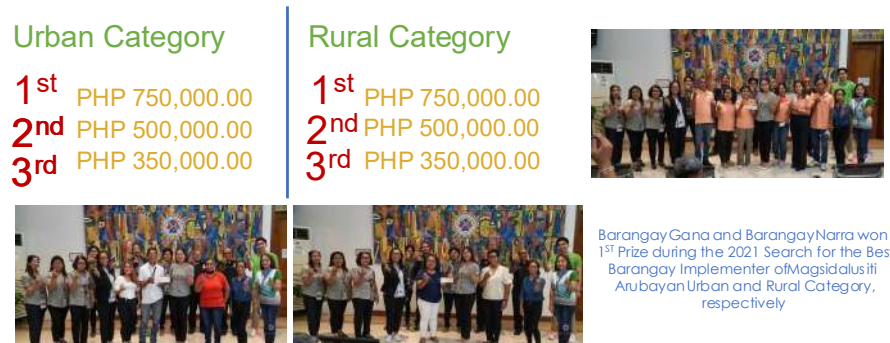


Figure 8.4.3. Search for the Best Barangay Implementer of Magsidalusiti Arubayan

### B. Green Tourism Enterprises: The Bougainvillea Seal of Compliance

The Green Tourism Enterprises Program is a voluntary certification program initiated by the PGLU to recognize tourism establishments with strict compliance and enforcement of health and safety protocols, environmental practices, and innovative business solutions. It aims to recognize the continuous efforts of the Tourism Establishments in the Province to enforce and

comply with the Minimum Health Standards set forth by the national and local government units and instrumentalities in order to gradually regain trust and confidence among tourists. Further, with the efforts of the PGLU to promote safe and environment-friendly tourism, these two areas will be the major criteria for the Green Enterprises Program.

The Bougainvillea Seal of Compliance puts primacy to health and safety, environment, and innovation as fundamental practices in tourism. The seal shall help regain and sustain trust and travel confidence among tourists to visit La Union as a safe and environment-friendly destination amidst the current global crisis. The Bougainvillea, being the provincial flower, represents an amalgamation of environment, tourism, and identity; hence, a fitting name for the seal. The Bougainvillea Seal of Compliance shall be valid for one year only. To monitor continuous regulatory compliance and utmost hospitality standards, a yearly inspection should be conducted or as often as may be necessary.

To recognize the efforts and support of tourism stakeholders in enforcing and complying with the health standards and environment-friendly practices, the Provincial Government of La Union (PGLU) awarded the Bougainvillea Seal of Compliance to winning tourism enterprises in La Union through the Green Tourism Enterprises program (GTEP).

The provincial flower bougainvillea symbolizes the amalgamation of tourism, environment, and identity, the compliance seal affirms that establishments observe minimum health standards set forth by the national and local government in order to gradually regain trust and confidence among tourists.

### C. Green Seal Award: Search for the Most Eco-friendly PGLU Offices

With the aim to strengthen environmental initiatives of all the departments in the Provincial Government of La Union (PGLU) in line with the ISO-Environmental Management System and 7S, a new project was launched named as "Search for the Most Eco-Friendly PGLU Office and Unit" through Provincial Government-Environment and Natural Resources Office (PG-ENRO) and Office of the Provincial Administrator (OPA) which encourage government employees in maintaining the cleanliness and orderliness of their workspace and promotion of environmental awareness and protection that will definitely make them more productive and become stewards of the environment.

The objectives of this Search aims (1) to recognize their best practices in making the PGLU an eco-friendly and a safe place to work in. The winners will receive PGLU Green Seal Award and a cash prize that will serve as a plaque of appreciation to their hard work that will eventually inspire other offices to also adopt the best practices and to encourage all employees to join together and heed the call for #LaUnionProbinsyanihan - a vital factor to achieve the vision of the province which is to position La Union as the Heart of Agri-Tourism in Northern Luzon by 2025; (2) to develop employees and service personnel into more responsible individuals and to encourage them to take part in the #KalikasanNaman Campaign of the Provincial Government of La Union; (3) comply with the provisions of Republic Act 9003 in terms of proper waste segregation and disposal; (4) comply with the requirements of ISO-Environmental Management System; (5) to be involved in the #KalikasanNaman campaign of the PGLU; and (6) to help achieve a more sustainable environment as the province walks closer in becoming the heart of Agri-Tourism in Northern Luzon by 2025.



### Institutional Aspects

#### 9.1. Roles

The Provincial Solid Waste Management Board (PSWMB) shall continue its roles and responsibilities as stated in RA 9003. The Board shall oversee and ensure the timely and successful implementation of solid waste management plans and activities in the province as stipulated in the plan in close coordination and partnership with the component Local Government Units (LGUs), partner National Government Agencies (NGAs), Non-Governmental Organizations (NGOs), academe, institutions, private entities and the citizenry.

Through participatory approach engaging wider engagement from the component LGUs, barangays, private stakeholders and institutions, they shall continue to be active partners during planning sessions and consultations, public hearings, implementation of projects, programs, and activities as well as during the monitoring, evaluation, and periodic review of plans and projects as their feedbacks and recommendations are necessary in making solutions and creating relevant programs and activities. They, too, shall be empowered by continuous capacity building and trainings.

With the approval of the 2023 Plastic Code of La Union, enforcement and monitoring of the code remains as the vital part as it requires manpower to do and ensure the success of the Code. Hence, Section 12 of the Code mandates the creation of Environmental Education and Enforcement Unit composed of one SG 18, one SG 15 and one SG 11

under the PG-ENRO to conduct deputation training among volunteers in all barangays to be deputized as eco-rangers that will form the task force. There will be hiring and deputation of eco-rangers in each LGU to conduct daily inspection and monitoring of all areas stated in Section 3 to 5 of the Code to ensure the compliance of the establishments and institutions with the provisions of the ordinance. Each eco-ranger shall also conduct Information, Education and Communications (IECs) in communities, schools, and other institutions and is required to submit a monthly accomplishment report to the Provincial Government - Environment and Natural Resources Office (PG-ENRO). An eco ranger, hereby deputized to implement the provision of this ordinance, shall utilize the POVR of the PGLU following the provisions under the POVR Ordinance.

The Provincial Government of La Union, as the enabling government unit, shall provide the necessary assistance such as but not limited to assistance in the establishment of various environmental infrastructures, provision of solid waste management equipment and other alternative technologies, technical assistance and capacity building to its component City/ Municipal LGUs, directly responsible in the management/collection of residual and special wastes. On the other hand, the Barangay LGUs shall also be empowered and strengthened through the conduct of capacity building trainings and IECs at the community to household level to ensure that solid waste management programs and projects are well-implemented at source. The Barangay LGUs who are responsible in the segregation and management/collection of biodegradable and recyclable wastes that essentially contributes in attaining the waste diversion targets of the Province shall maintained and be equipped with the necessary

technologies and facilities such as but not limited to Materials Recovery facilities, shredders, and other alternative technologies for them to be able to effectively execute their roles and responsibilities in the solid waste management system.

## 9.2 Strategy for Cooperation

This plan shall employs holistic approach or strategy, engaging all stakeholders, from local authorities (provincial, municipal/city/barangays), as well as the national and regional agencies, non-government organizations, community organizations, service users or the waste generators, environmental advocates, private sectors (both formal and informal) in all the elements of waste system; covering all aspects of solid waste management such as on institutional, technical, financial, social, legal and environmental aspects.

To engage wider participation from the component LGUs, barangays, private stakeholders and institutions, they shall continue to be active partners during planning sessions and consultations, public hearings, implementation of projects, programs, and activities as well as during the monitoring, evaluation, and periodic review of plans and projects as their feedbacks and recommendations are necessary in making solutions and creating relevant programs and activities. They, too, shall be empowered by continuous capacity building and trainings. As the community plays the vital role in an effective solid waste management system, the strategy of this plan highlights stakeholder participation or community mobilization which serves as integral part of the solid waste management system.

### 9.3 Legal

In terms of legal aspects addressing the gaps in the implementation of solid waste management programs, the following are the proposed legislations, to wit;

- a. *An Ordinance on the Mandatory Creation of Environment and Natural Resources Office (ENRO) and Position of Environment and Natural Resources Officer in the Local Government Unit, Hiring of Personnel, Appropriating Funds thereto and Other Purposes*

Section 8.2 of the Provincial Ordinance No. 352-2021 or the Provincial Environmental Management and Protection Code of the Province of La Union states the creation of LGU Environment and Natural Resources Office. Furthermore, the 10-Year Solid Waste Management Plans of Local Government Units of La Union mandates the creation of ENRO or equivalent position.

- b. *An Ordinance Establishing the System for Proper Management, Storage, Collection, Disposal, and Monitoring of Hazardous Wastes including the Establishment of Treatment, Storage, and Disposal Facility in La Union, Appropriating Funds therefor, and Providing Fines and Penalties for Violation Thereof*

Households contributes, nowadays in the increase of healthcare wastes as a result of the COVID-19 pandemic in addition to other wastes that are presently disposed. Poor management of these wastes and other toxic and hazardous wastes causes environmental degradation which in turn causes adverse impact to the economy

of the locality. With this, it is urgent to take further steps and prioritize efforts on the management of hazardous wastes such as the establishment of system for the proper storage, collection, disposal and monitoring of hazardous wastes including the establishment of treatment, storage, disposal facility.

- c. *An Ordinance on the Mandatory Establishment of Wastewater Collection and Treatment Facility in all Accommodation and Food Establishments in La Union and Providing Fines and Penalties for Violation Thereof*

The Department of the Interior and Local Government (DILG) issued the Memorandum Circular No. 2019-62 or the "Policy and Guidelines on Sewage Treatment and Sewage Management System" on April 22, 2019 which directs and advises all LGUs to establish a sewerage and septage management system through the enactment of Sewage Treatment and Septage Management Ordinance (SSMO) and ensure that all residential (including private subdivisions), commercial, industrial, institutional, and governmental establishments within its territorial jurisdiction have proper sewage treatment and septage management system.

- d. *An Ordinance Providing Hazard Pay to Environment and Natural Resources Personnel of Local Government Units for the Protection of Health and Safety and Appropriating Funds therefor*

With the high risks of exposure to health hazards due to the nature of work, personnel in the environment and natural resources office shall be granted with hazard pay for the protection of health and safety

of the workers and in recognition of their contribution and invaluable service to the organization.

- e. *An Ordinance Enjoining all component Local Government Units of La Union in the Celebration of various Environmental Events and Advocacies*

In pursuit of elevating environmental awareness campaign reaching wider community engagement, the Provincial Government of La Union through the Environment and Natural Resources Office (PG-ENRO) actively supports and celebrates various environmental events and advocacies together with concerned NGAs, component LGUs, and community leaders of different sectors. These environmental celebrations include the following - National Zero Waste Month celebrated on January; World Wetlands Day and International Day of Forests on February; World Water Day and Earth Hour on March; Earth Day on April; Month of the Ocean and International Biodiversity Day on May; Environment Month and Arbor Day on June; International Coastal Clean Up on September; Environmental Awareness Month, Clean Air Month, Climate Change Consciousness Week, National Bicycle Day on November and International Mountain Day on December.

- f. *An Ordinance Strengthening the Enforcement of the Provisions of RA 9003 on Open Burning of Municipal Solid Wastes including Agricultural Wastes*

Burning leaves and waste materials is harmful to one's health. Leaves and waste materials when burned releases several poisons in the environment. Anchored on the National Solid Waste Management

Commission Resolution No. 1468, series of 2021 approved on November 24, 2021 to strengthen the enforcement of the provisions of RA 9003 on open burning of municipal solid wastes including agricultural wastes, it is of utmost importance to also enact a provincial ordinance prohibiting or banning backyard burning of leaves and waste materials and further strengthening its implementation and enforcement in all the barangays. Burning of leaves and waste materials is prohibited under the Section 48, paragraph 3 of RA 9003 and the violators of this provision will be penalized accordingly.

**Table 9.2 List of Ordinances of City/Municipality**

Municipality/ City	List of Ordinances/Legal Requirements to be Enacted	Plans to Impose Penal Provision
Province of La Union	<p>An Ordinance on the Mandatory Creation of Environment and Natural Resources Office (ENRO) and Position of Environment and Natural Resources Officer in the Local Government Unit, Hiring of Personnel, Appropriating Funds thereto and Other Purposes</p> <p>An Ordinance Establishing the System for Proper Management, Storage, Collection, Disposal, and Monitoring of Hazardous Wastes including the Establishment of Treatment, Storage, and Disposal Facility in La Union, Appropriating Funds therefor, and Providing Fines and Penalties for Violation Thereof</p> <p>An Ordinance on the Mandatory Establishment of Wastewater Collection and Treatment Facility in all Accommodation and Food Establishments in La Union and Providing Fines and Penalties for Violation Thereof</p> <p>An Ordinance Providing Hazard Pay to Environment and Natural Resources Personnel of Local Government Units for the Protection of Health and Safety and</p>	Penalties shall be imposed.

	<p>Appropriating Funds therefor</p> <p>An Ordinance Enjoining all component Local Government Units of La Union in the Celebration of various Environmental Events and Advocacies</p> <p>An Ordinance Strengthening the Enforcement of the Provisions of RA 9003 on Open Burning of Municipal Solid Wastes including Agricultural Wastes</p>	
Agoo	Creation of MENRO	Penalties are currently being imposed.
Aringay	Creation of MENRO	
Bacnotan	Creation of MENRO	
Bagulin	Creation of MENRO	Plans to impose penal provisions will be incorporated in an ordinance to be adopted by the Sangguniang Bayan.
Balaoan	Creation of MENRO	
Bangar	The Municipal Mayor will issue an Executive Order (EO) deputizing members of Municipal Solid Waste Management-Technical Working Group, selected and qualified SWM Officers from Civil Society Organizations (CSOs), barangays and other community members to effect the apprehension of violators.	Expansion of coverage in the apprehension of the prohibited acts under RA 9003 and the Environment Code will be in effect within the jurisdiction of the municipality.
Bauang	Revisit municipal ordinances	
Burgos	Creation of MENRO	
Caba	Creation of MENRO	
Luna	Creation of MENRO/ SWM Officer Creation of municipal ordinance to enforce penal provision of RA 9003	
Naguilian	Creation of MENRO	
Pugo	Creation of MENRO	
Rosario	Creation of MENRO	
City of San Fernando	Revisit municipal ordinances	Penalties are currently being imposed.
San Gabriel	Creation of MENRO	
San Juan	Establishment of a Municipal Environment and Natural Resources Office (MENRO) Revisit SWM Policies Passage of a Municipal Solid Waste Management Ordinance and a Code Resolution of Barangay Integrated Solid Waste Management Committee	
Santo Tomas	Creation of MENRO	
Santol	Creation of MENRO	
Sudipen	Creation of MENRO	
Tubao	Creation of MENRO	

*\*Excerpted from the approved 10-Year Solid Waste Management Plans of LGUs*



### Social and Environmental Aspects

#### 10.1. Social Aspects

The social acceptability on the proposed solid waste management system is vital to effectively implement solid waste management programs of the Province. The implementation strategy for solid waste management in the Province of La Union highlights stakeholder participation from local authorities (provincial, municipal/city, barangays) as well as national and regional agencies, NGOs and community organizations, service users or the waste generators, private sectors (both formal and informal) and other persons or organizations that has an interest, influence or role in relation to the solid waste management of the province. In this regard, community mobilization and stakeholder participation is an integral part of the system.

Community mobilization in the aspect of solid waste management is important since the community plays the vital role in the implementation process. This shall result to increase environmental awareness and protection, good local and environmental governance, social accountability, and responsiveness among all waste generators/stakeholders. The social impacts include having disciplined stakeholders, improved health condition, cleanliness and orderliness of surroundings, and less expense for residents, commercial and industrial establishments, and eventually of the LGUs concerned.

Waste collection and management are essential public services for the protection of public health and the environment, hence, to ensure

sustainable waste services, it is of utmost importance to put value among garbage collectors / workers involved in waste-related services. As waste services are among the labour-intensive and dangerous profession worldwide given the daily and high risks of exposure to health hazards (i.e. accidental cuts, biological and chemical waste contamination, poisoning due to chemical substances, bites from animals and insects, ergonomic and musculoskeletal injuries, accidents due to traffic and falls from the collection truck, stress due to workload and violence by service users and street crime), it is high time to pass an ordinance providing hazard pay to environment and natural resources personnel of local government units for the protection of health and safety and at the same time in recognition of their contribution and invaluable service to the organization to improve workers' lives and working conditions while ensuring quality services to users and communities.

The following plans shall be considered and put in place. Social acceptability of putting up of SWM facilities (MRF, composting area, transfer stations, disposal facilities) includes the following considerations, to wit:,

- SWM facilities should be properly located in outlying areas to minimize its effects to neighboring residences or communities; properly fenced to keep people and animals away; and in general should consider the sensitivities of the community's residents, both people and animals alike.
- SWM facilities should be properly managed, adhering to the minimum technical considerations (as provided for in RA 9003) for their design and features, and should have sufficient maintenance

and monitoring activities to protect the health and security of nearby communities.

- Provide employment or livelihood to the residents of the host communities (barangay, city/municipality, or province).
- For the wastepickers/eco-aides working or allowed to work in the SWM facilities:
  - PhilHealth coverage for informal waste sector (prioritize, include in LGU programs)
  - Wastepickers can be organized into an association; the association will screen who can be their members through their by-laws; the association can provide livelihood and skills to their members. The association can be given the opportunity to work in the barangay or municipal MRFs since they already have the skills for waste management. The wastepickers can also be trained to do the collection and processing of biodegradables in the barangay/municipal/city MRFs.
  - The wastepickers' association/cooperative can enter into a joint venture agreement with the LGU with a fair profit sharing agreement
  - For LGUs considering cluster arrangements for their disposal facility, the wastepickers' association/cooperative can be tapped as manpower
  - Provide skills training related to entrepreneurial or livelihood activities
  - Include the wastepickers in manpower training programs of the LGUs

## 10.2 Environmental Aspects

All the proposed programs and activities for solid waste management at the provincial and city/municipal levels should conform to all relevant

environment aspects pertaining to land, air and water. Notwithstanding the economic and technological developments and needs of the province and its constituents, the environment and ecological balance should not be compromised, as embodied in the Vision of the Province for solid waste management.

Thus, regular monitoring of the implementation of this SWM Plan and review of the effects and impacts of its implementation shall be regularly done at the provincial and local government levels to ensure that measures and safeguards against pollution and for the preservation of the natural ecosystem are in place in all aspects and elements of the SWM program.

### Financial Aspects

#### 11.1. Investment Cost

The following table summarizes the investment costs for the ten (10) years of the implementation of the plan. For CY 2024, the total budget allotted for the implementation of solid waste management programs and projects amounted to Php 50,500,000.00 from the 20% Development Fund of the Province.

Table 11.1.1 presents the ten (10) - year projected investment cost in various solid waste management related programs and projects which includes those under the Environmental Management System for ISO, Assistance to LGUs in the Establishment of Wastewater Treatment Facility, Development of Special Waste Management System for Household and LGU-owned Healthcare Facilities, Establishment of Eco-MRF in barangays and schools, Assistance to LGUs in the Upgrading of Existing Sanitary Landfill Facilities, Establishment of MRFs in institutions, and Installation of Eco-bin Projects in various tourism sites.

Table 11.1.1 Ten (10)-Year Projected Investment Cost

Integrated Waste Management Program	Projected Cost (Php) / Time Frame										Total Investment (Php)	Source of Fund
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033		
<b>Environmental Management System for ISO</b>												
<i>Procurement of Hauling Vehicle for Hazardous Waste (PGLU)</i>	1,500,000.00										<b>1,500,000.00</b>	20% Development Fund
<i>Establishment of Material Recovery Facility for Hazardous Wastes generated within PGLU premises</i>		1,500,000.00									<b>1,500,000.00</b>	20% Development Fund
<i>Installation of Wastewater Treatment Facility for PGLU facilities</i>		10,000,000.00									<b>10,000,000.00</b>	20% Development Fund
<b>STRATEGIC ACTIVITIES</b>												
<b>Assistance to LGUs in the establishment of Wastewater Treatment Facility (sewerage, septage, etc.)</b>	35,000,000.00	50,000,000.00	50,000,000.00	50,000,000.00	50,000,000.00	50,000,000.00	50,000,000.00	50,000,000.00	50,000,000.00	50,000,000.00	<b>485,000,000.00</b>	20% Development Fund
<b>Development of waste Management System for household and LGU-owned Healthcare Facilities</b>		20,000,000.00									<b>20,000,000.00</b>	
<i>Installation of Waste Treatment Technology (i.e., Purification, Gassification, etc)</i>			10,000,000.00								<b>10,000,000.00</b>	20% Development Fund
<i>Purchase of Hauler Truck</i>		5,000,000.00									<b>5,000,000.00</b>	20% Development Fund
<i>Establishment of Treatment Facility</i>				25,000,000.00							<b>25,000,000.00</b>	20% Development Fund
<b>Establishment of Eco-MRF (Barangays &amp; Schools)</b>		1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	<b>9,000,000.00</b>	20% Development Fund
<b>Assistance to LGUs in the upgrading of existing sanitary landfill facilities</b>	11,000,000.00	33,000,000.00	33,000,000.00	33,000,000.00	33,000,000.00	33,000,000.00	33,000,000.00	33,000,000.00	33,000,000.00	33,000,000.00	<b>308,000,000.00</b>	20% Development Fund

Establishment of Material Recovery Facility	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	3,000,000.00	30,000,000.00	20% Development Fund
Kalikasan Naman Intervention (Ecobin Project)		1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	9,000,000.00	20% Development Fund
<b>TOTAL (Php)</b>	<b>50,500,000.00</b>	<b>124,500,000.00</b>	<b>98,000,000.00</b>	<b>113,000,000.00</b>	<b>88,000,000.00</b>	<b>88,000,000.00</b>	<b>88,000,000.00</b>	<b>88,000,000.00</b>	<b>88,000,000.00</b>	<b>88,000,000.00</b>	<b>914,000,000.00</b>	

**Table 11.1.2 Ten (10)-Year Projected Investment Cost per City/Municipality**

Municipality/ City	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Agoo	9,388,049.00	6,965,328.18	6,950,000.00	8,762,200.00	5,100,000.00	5,100,000.00	5,100,000.00	5,100,000.00	5,100,000.00	5,100,000.00
Aringay	5,347,565	130,000	1,010,000	3,610,000	110,000	1,010,000	1,010,000	1,010,000	1,010,000	1,010,000
Bacnotan	17,021,000	5,123,000	976,000	3,870,000	25,446,000	3,870,000	3,870,000	3,870,000	3,870,000	3,870,000
Bagulin	706,000	88,600	42,430,560	6,196,680	113,148	706,000	88,600	42,430,560	6,196,680	113,148
Balaoan	4,745,000	3,990,000	105,000	108,000	128,000	128,000	128,000	128,000	128,000	128,000
Bangar	15,200,000	12,000,000	1,500,000	1,500,000	4,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
Bauang	150,000	2,000,000	250,000	4,000,000	50,000	150,000	2,000,000	250,000	4,000,000	50,000
Burgos	2,600,000.00	-	200,000.00	3,500,000.00	50,000.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00
Caba	2,000,000	1,300,000	2,000,000	3,200,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
Luna	1,211,000	658,600	4,220,560	6,216,680	128,148	1,211,000	658,600	4,220,560	6,216,680	128,148
Naguilian	857,000	2,364,000	720,000	802,000	17,436,000	857,000	2,364,000	720,000	802,000	17,436,000
Pugo	7,182,000	13,807.00	14,428,000	10,347,000	5,333,000	5,333,000	5,333,000	5,333,000	5,333,000	5,333,000
Rosario	2,340,000	3,340,000	2,040,000	400,000	4,100,000	2,040,000	2,040,000	2,040,000	2,040,000	2,040,000
City of San Fernando	71,804,293.40	71,804,293.40	71,804,293.40	71,804,293.40	71,804,293.40	71,804,293.40	71,804,293.40	71,804,293.40	71,804,293.40	71,804,293.40
San Gabriel	50,000.00	9,000,000.00	1,350,000.00	650,000.00	350,000.00	350,000.00	350,000.00	350,000.00	350,000.00	350,000.00
San Juan	4,550,000	14,600,000	4,000,000	6,050,000	4,050,000	4,050,000	4,050,000	4,050,000	4,050,000	4,050,000
Santo Tomas	1,200,000	1,100,000	3,600,000	2,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000	3,100,000
Santol	3,870,000	3,050,000	3,800,000	3,050,000	3,050,000	3,050,000	3,050,000	3,050,000	3,050,000	3,050,000
Sudipen	4,435,000.00	500,000.00	350,000.00	1,500,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00	1,000,000.00
Tubao	10,000	2,200,000	770,000	30,000	1,030,000	1,030,000	1,030,000	1,030,000	1,030,000	1,030,000

*\*Based on the available data*

## 11.2 Annual Cost

The breakdown of annual cost for ten years is shown below.

Table 11.21. Ten (10)-Year Projected Annual Cost of the Province

Integrated Waste Management Program	Projected Cost (Php) / Time Frame										Total Annual Cost (Php)	Source of Fund
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033		
Solid Waste Management Program												
Provincial Solid Waste Management Board (PSWMB and TWG Meetings)	98,010.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00	200,000.00	1,898,010.00	General Fund
Joint monitoring in the implementation of Solid Waste Management plans of LGU	12,340.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	912,340.00	General Fund
Collaboration with LGUs in the establishment/ upgrading of sanitary landfill facility	4,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	274,000.00	General Fund
Special Waste Management												
Healthcare Waste Management Monitoring in Provincial and District Hospitals	11,260.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	461,260.00	General Fund
Toxic and hazardous waste monitoring	11,260.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	461,260.00	General Fund
Hazardous Waste Storage Facility Accreditation		20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	180,000.00	General Fund



Collaboration with LGU in the establishment of waste central storage and treatment facility		30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	270,000.00	General Fund
<b>Liquid Waste Management Program</b>													
Wastewater Management Monitoring and Investigation	5,452.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	275,452.00	General Fund
Collaboration with LGUs and private entity in the establishment of wastewater treatment facility	3,200.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	30,000.00	273,200.00	General Fund
Installation of Water Pollution Abatement (Trash traps)		800,000.00	800,000.00	800,000.00	800,000.00	800,000.00	800,000.00	800,000.00	800,000.00	800,000.00	800,000.00	7,200,000.00	General Fund
<b>Formulation and Updating of Waste Management Plans</b>													
Updating of the 10 -Year SWM Plan (Assistance to LGUs in the updating of WACS data and plan)	82,000.00		400,000.00			400,000.00				400,000.00	400,000.00	82,000.00	General Fund
Conduct of research on various issues/areas on waste management	49,900.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	2,749,900.00	General Fund
Public-Private Partnership on the Establishment of TSD Facility		200,000.00										200,000.00	General Fund
<b>Awareness campaign on waste management</b>													

Conduct awareness campaign on waste management (healthcare wastes, toxic and hazardous wastes, plastic recycling and recovery)	7,260.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	<b>907,260.00</b>	General Fund
E-Waste Collection Annual Event (Partnership with IRI & Junkshop)	218,822.50	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	<b>4,718,822.50</b>	General Fund
Project ECHO: Determination of Ecobrick bottle's compressive strength		1,350,000.00	1,350,000.00	1,350,000.00	1,350,000.00	1,350,000.00	1,350,000.00	1,350,000.00	1,350,000.00	1,350,000.00	1,350,000.00	<b>12,150,000.00</b>	General Fund
		50,000.00										<b>50,000.00</b>	
Brand Audit Coastal Clean-Up	45,375.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	<b>495,375.00</b>	General Fund
Implementation of the Plastic Ordinance	207,120.00	8,600,000.00	8,600,000.00	8,600,000.00	8,600,000.00	8,600,000.00	8,600,000.00	8,600,000.00	8,600,000.00	8,600,000.00	8,600,000.00	<b>77,607,120.00</b>	Special Purpose Appropriations
Bayong Project (Partnership with LGU & LINK Sustainable Palengke)	200,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	<b>4,700,000.00</b>	General Fund
PCO and Managing Heads training to LGUs		250,000.00			250,000.00			250,000.00		250,000.00		<b>1,000,000.00</b>	General Fund
institutionalization of clean coast project	4,800.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	<b>904,800.00</b>	General Fund

Installation of Buyback center (plastic bottle recycle vendo machine)		50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	450,000.00	General Fund
<b>Disaster Waste Management</b>													
Monitoring & assistance during and aftermath of disasters		50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	50,000.00	450,000.00	General Fund
<b>Environmental Events and Advocacies</b>													
National Zero Waste Month	1,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	1,351,000.00	General Fund
International Coastal Clean Up	30,360.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	150,000.00	1,380,360.00	General Fund
<b>Cleanest Safest and Greenest Program (SPA)</b>													
Kick-off Meeting & Evaluation with Provincial Search Committee (Honoraria, logistics, etc.)	385,655.50	400,000.00	400,000.00	400,000.00	400,000.00	400,000.00	400,000.00	400,000.00	400,000.00	400,000.00	400,000.00	3,985,655.50	General Fund
CSG Deliberation/Best practice sharing	295,500.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	300,000.00	2,995,500.00	General Fund
Awarding of Winners (SPA)	15,200,000.00	19,450,000.00	19,450,000.00	19,450,000.00	19,450,000.00	19,450,000.00	19,450,000.00	19,450,000.00	19,450,000.00	19,450,000.00	19,450,000.00	190,250,000.00	Special Purpose Appropriations
Search for the Most Eco-Friendly PGLU Office (in partnership with OPAdmin) (ISO)	108,712.00	230,000.00	230,000.00	230,000.00	230,000.00	230,000.00	230,000.00	230,000.00	230,000.00	230,000.00	230,000.00	2,178,712.00	General Fund
<b>Environmental Management System for ISO</b>													

Waste Management Committee												
Monitoring of waste generation		500,000.00									500,000.00	General Fund
Application for Permit to Transport	1,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	20,000.00	181,000.00	General Fund
PGLU Hazardous Waste Storage Facility Accreditation		50,000.00									50,000.00	General Fund
Hauling, Transport, and Treatment of PGLU's special wastes		250,000.00	250,000.00	250,000.00	250,000.00	250,000.00	250,000.00	250,000.00	250,000.00	250,000.00	2,250,000.00	General Fund
<b>STRATEGIC ACTIVITIES</b>												
Incentives/Hazard Pay for Environmental Workers (Garbage Collectors/Sweepers/Utility Workers)		500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	4,500,000.00	General Fund
Capacity Development Program	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	1,000,000.00	General Fund
<b>TOTAL (Php)</b>	<b>17,083,027.00</b>	<b>35,540,000.00</b>	<b>34,490,000.00</b>	<b>34,490,000.00</b>	<b>34,740,000.00</b>	<b>34,490,000.00</b>	<b>34,490,000.00</b>	<b>34,740,000.00</b>	<b>34,490,000.00</b>	<b>34,740,000.00</b>	<b>329,293,027.00</b>	

Table 11.22 Ten (10)-Year Projected Annual Cost per City/Municipality

Municipality/ City	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Agoo	7,175,590.00	7,475,590.00	14,725,590.00	8,475,590.00	8,575,590.00	8,675,590.00	8,775,590.00	8,875,590.00	8,975,590.00	9,075,590.00
Aringay	3,137,550	3,137,550	4,037,550	6,637,550	3,137,550	3,137,550	3,137,550	3,137,550	3,137,550	3,137,550
Bacnotan	2,838,188	7,266,188	3,014,188	3,055,588	3,193,228	3,330,868	3,468,508	3,606,148	3,743,788	3,881,428
Bagulin	1,196,000	1,256,000	3,322,000	7,391,000	1,472,000	1,688,000	1,904,000	2,120,000	2,336,000	2,552,000
Balaoan	7,188,188	6,666,188	2,894,188	2,942,588	3,070,228	3,118,628	3,197,868	3,246,268	3,325,508	3,373,908
Bangar	7,800,000	7,800,000	7,800,000	7,800,000	7,800,000	7,800,000	7,800,000	7,800,000	7,800,000	7,800,000
Bauang	7,314,112	8,068,112	8,021,112	8,436,112	8,076,112	8,076,112	8,076,112	8,076,112	8,076,112	8,076,112
Burgos	903,000.00	578,000.00	803,000.00	20,728,000.00	1,053,000.00	1,053,000.00	1,053,000.00	1,053,000.00	1,053,000.00	1,053,000.00
Caba	2,993,896	3,523,992	4,173,992	4,768,089	5,028,089	5,028,089	5,028,089	5,028,089	5,028,089	5,028,089
Luna	2, 937, 000	2, 937, 000	6, 919, 000	2, 919, 000	2, 919, 000	2, 937, 000	2, 937, 001	2, 937, 002	2, 937, 003	2, 937, 004
Naguilian	3,724,633.88	5,752,633.88	3,900,633.88	3,942,033.88	19,079,673.88	3,942,033.88	3,942,033.88	3,942,033.88	3,942,033.88	3,942,033.88
Pugo	10,825,000	810,000	6,850,000	5,480,000	10,520,000.00	5,480,000	5,480,000	5,480,000	5,480,000	5,480,000
Rosario	3,540,000	3,614,000	3,694,000	3,782,000	3,877,000	3,972,000	4,067,000	4,162,000	4,257,000	4,352,000
City of San Fernando	80,866,493	78,622,493	69,163,493	70,917,493	69,141,493	69,141,493	69,141,493	69,141,493	69,141,493	69,141,493
San Gabriel	1,962,144.00	1,262,244.00	1,512,244.00	1,587,244.00	1,862,244.00	1,862,244.00	2,137,244.00	2,137,244.00	2,412,244.00	2,412,244.00
San Juan	2,595,360.24	3,450,365.52	3,450,365.52	3,454,031.44	3,974,036.72	3,974,036.72	3,974,036.72	3,974,036.72	3,974,036.72	3,974,036.72
Santo Tomas	2,025,000	2,057,500	2,093,250	2,132,575	2,175,832	2,219,089	2,262,346	2,305,603	2,348,860	2,392,117
Santol	1,160,000.00	1,650,000.00	1,991,876	1,991,876	2,370,322	2,370,322	2,712,198	2,712,198	3,090,644	3,090,644
Sudipen	1,681,000.00	1,576,000.00	1,661,000.00	1,556,000.00	1,641,000.00	1,726,000.00	1,811,000.00	1,896,000.00	1,981,000.00	1,981,000.00
Tubao	1,480,000	3,960,000	2,340,000	1,570,000	2,580,000	2,580,000	3,590,000	3,590,000	4,600,000	4,600,000

\*Based on the available data

### 11.3. Funding Options

The budget for the implementation of solid waste management programs and projects will be primarily sourced from the Internal Revenue Allocation (IRA) and specifically from the 20% Development Fund, General Fund, and Special Purpose Appropriations as shown in the tables above. Other funding sources are financial assistance from National Government Agencies such that of the Local Government Support Fund – Financial Assistance to Local Government Units (LGSF-FALGU), People's Survival Fund (PSF), and National Solid Waste Management Fund

Funding options such as through Private-Public Partnerships (PPPs) shall also be explored and engaged with especially on capital intensive projects such as Waste-To-Energy Project and Treatment, Storage, and Disposal Facility Project. Collaboration with private companies/ obliged enterprises shall also be tapped in support to achieving the waste diversion target of the Province while also scaling - up these companies' Extended Producers Responsibility (EPR) Programs.

Another available funding option for the province is the acquisition of loans for large funding requirement such as the Green Climate Fund of Landbank. Donations, contributions and grants from government agencies, private entities, civic and non-government organizations, especially for technical assistance or education activities of the province are also considered as funding options of the Province. Proceeds from the fines and penalties in the implementation of various environmental ordinances are also sources of funds for the implementation of solid waste management programs and activities.

Table 11.3. Funding Options per City/Municipality

Municipality/ City	Funding Options
Agoo	<ul style="list-style-type: none"> <li>- LGU-Agoo General Fund</li> <li>- 20% Development Fund</li> <li>- Proceeds from the fines and penalties in the implementation of Environmental Management (Solid Waste Management)</li> </ul>
Aringay	<ul style="list-style-type: none"> <li>- Municipality's 20% Community Development Fund / Annual Investment Plan (annual allotment of more or less ₱1,100,000.00 for the maintenance of dump trucks and equipment and of the Municipal Dumpsite charged at the Maintenance and Other Operating Expenses (MOOE) under the office of the Mayor)</li> <li>- Garbage Collection Fee (annual collection of approximately ₱200,000.00 - ₱300,000.00 from garbage collection)</li> <li>- Income generated from concrete by-product (at least ₱ 2,000,000.00 yearly)</li> <li>- Penalty / Fine</li> </ul>
Bacnotan	<ul style="list-style-type: none"> <li>- People's Survival Fund under RA 9729</li> <li>- Barangay Clean and Green Fund</li> <li>- Public – Private Partnership (PPP)</li> <li>- Green Fund (loan) from banks</li> <li>- Access to Clean Development Mechanism (CDM)</li> <li>- National SWMFund</li> <li>- Grants and Donations</li> <li>- Fees (garbage collection, tipping fee)</li> <li>- Fines</li> <li>- RA 7171 (municipal share)</li> <li>- Technical Assistance from NGAs, (DENR, DA, DTI, DOST, etc.), academe (HEIs), NGOs</li> <li>- The municipality will seek financial assistance from the Provincial Government of La Union as well as the Office of the Congressman of the First District</li> </ul>
Bagulin	<ul style="list-style-type: none"> <li>- Municipal Development Fund</li> <li>- Financial assistance from National Government Agencies (DENR, DILG, DOST and DA) and the Provincial Government of La Union (PGLU)</li> <li>- Garbage collection</li> </ul>
Balaoan	<ul style="list-style-type: none"> <li>- 20% development fund of the Municipal Internal Revenue Allotment (IRA)</li> <li>- Barangay Clean and Green Fund</li> <li>- Local Fund</li> <li>- Public-Private Partnerships (PPP)</li> <li>- Ra 7171 Tobacco Excise Tax share</li> <li>- National SWMFund</li> <li>- Grants and Donations</li> <li>- Fees (garbage collection &amp; dumping fees)</li> <li>- Fines</li> <li>- Financial assistance from NGAs, (DENR, DA, DTI, DOST etc.), academe (HEIs), NGOs</li> </ul>
Bangar	<ul style="list-style-type: none"> <li>- Municipal General Fund (GF)</li> <li>- 20% Development Fund</li> <li>- People's Survival Fund under RA 9729</li> <li>- Barangay Clean and Green Fund</li> <li>- Public-Private Partnerships (PPP)</li> <li>- Green Fund (loan) from banks</li> </ul>

	<ul style="list-style-type: none"> <li>- Access to Clean Development Mechanism (CDM)</li> <li>- National SWMFund</li> <li>- Grants and Donations</li> <li>- Fees (garbage collection, tipping fee)</li> <li>- Fines</li> <li>- RA 7171 (municipal share)</li> <li>- Financial Assistance from NGAs (DENR, DA, DTI, DOST etc.), academe (HEs), NGOs</li> <li>- Financial assistance from the Provincial Government of La Union and Office of the Congressman of the First District</li> <li>- ABOND Partylist</li> <li>- Donations, grants and other joint projects with the business and industries and business sector in the form of equipment; trainings and capacity-building activities; sponsorship of trainings/seminars; provision of waste bins, signage; and others</li> </ul>
Bauang	<ul style="list-style-type: none"> <li>- Internal Revenue Allotment (IRA)</li> <li>- 20% Development Fund</li> <li>- Private Sectors</li> <li>- Acquisition of loans for large funds requirement</li> <li>- Donation, contribution and grants may be solicited from government agencies, private entities, civic and non-government organizations for technical assistance and education activities</li> </ul>
Burgos	<ul style="list-style-type: none"> <li>- Local Government Unit Annual Budget charged under the MOOE of the MPDO</li> <li>- Public Private Partnership (PPP)</li> <li>- Outsourcing</li> <li>- Collection fees (Garbage)</li> <li>- Penalty/Fines</li> </ul>
Caba	<ul style="list-style-type: none"> <li>- Local Government Unit Annual Budget charged under the 20% Development Fund of the Municipality</li> <li>- Public-Private Partnership (PPP)</li> <li>- Outsourcing</li> <li>- Collection of Fees (approximately generating Php 50,000.00)</li> <li>- Penalty/Fine</li> </ul>
Luna	<ul style="list-style-type: none"> <li>- Municipal Development Fund</li> <li>- Financial assistance from National Government Agencies (DENR, DILG, DOST and DA) as well as from the Provincial Government of La Union Garbage collection</li> </ul>
Naguilian	<ul style="list-style-type: none"> <li>- General Fund</li> <li>- 20% Development Fund</li> <li>- Barangay Clean and Green Fund</li> <li>- Public Private Partnerships (PPP)</li> <li>- National SWMFund</li> <li>- Grants and Donations</li> <li>- Fees (garbage collection &amp; dumping fees)</li> <li>- Fines</li> <li>- Financial Assistance from NGAs (DENR, DA, DTI, DOST etc.), academe (HEs), NGOs, PGLU, Office of the Second District Representative – Countryside Development Fund (CDF)</li> </ul>
Pugo	<ul style="list-style-type: none"> <li>- 20% Development Fund of the Municipal Internal Revenue Allotment (IRA)</li> <li>- Public Private Partnership (PPP)</li> <li>- Available loans to any government and private agencies</li> </ul>
Rosario	<ul style="list-style-type: none"> <li>- Local Government Unit Annual Budget charged under the Maintenance and Other Operating Expenses (MOOE) of</li> </ul>



	<p>the Municipal Environment and Natural Resources Office (MENRO).</p> <ul style="list-style-type: none"> <li>- Public-Private Partnership (PPP) (i.e. <i>Pepsi, LDP</i>) and other business establishments operating within the municipal periphery</li> <li>- Outsourcing</li> <li>- Collection of Fees (approximately Php1.2M from the private entities)</li> <li>- Penalty/Fine</li> </ul>
City of San Fernando	<ul style="list-style-type: none"> <li>- 20 % Development Fund</li> <li>- City's General Fund</li> <li>- Environmental fees</li> <li>- Sanitary Landfill Management Fee c/o City LGU</li> <li>- SWM Maintenance Fee by Barangay LGU</li> <li>- ESU Tipping fees</li> <li>- THW fee</li> <li>- Sale of recyclable materials (including compost or planting medium)</li> <li>- Fines and penalties</li> </ul>
San Gabriel	<ul style="list-style-type: none"> <li>- Local Government Unit Annual Budget from the Community Development Fund (20%) and to the Maintenance and Other Operating Expenses (MOOE);</li> <li>- Public-Private Partnership (PPP)</li> <li>- Outsourcing</li> <li>- Collection of Fees</li> <li>- Penalty/Fine</li> </ul>
San Juan	<ul style="list-style-type: none"> <li>- Municipal Development Fund</li> <li>- SWM Fund</li> <li>- Counter-parting or cost sharing scheme between and among the local government, barangays and other partners</li> <li>- Financial assistance from government agencies (Department of Interior and Local Government (DILG), Department of Trade and Industry (DTI), Technical Education and Skills Development Authority (TESDA), Department of Science and Technology (DOST), and Department of Agriculture (DA)) thru the Bottom-up Budgeting (BUB) and Shared Service Facilities (SSF)</li> <li>- Financial support from business establishments through their donations, community activity, extension works or corporate social responsibility (CSR) activities</li> <li>- Donations from private individuals</li> <li>- Loans from financial institutions such as Landbank of the Philippines (LBP) and Development Bank of the Philippines (DBP), Bank of the Philippine Islands (BPI) and other financial institutions that are providing assistance for carbon reduction projects and other green projects</li> <li>- Collection of environmental and sanitary fee from business establishments and households</li> </ul>
Santo Tomas	<ul style="list-style-type: none"> <li>- Local Government Unit Annual Budget charged under the 20% Municipal Development Fund (MDF) and Maintenance and Other Operating Expenses (MOOE).</li> <li>- Public-Private Partnership (PPP) (i.e. <i>San Miguel Corporation Shipping and Lighterage</i>)</li> <li>- Outsourcing</li> <li>- Collection of Fees (approximately Php 36,800.00 from the business establishments)</li> <li>- Penalty/Fine</li> </ul>
Santol	<ul style="list-style-type: none"> <li>- Local Government Unit Annual Budget charged under the MOOE of the MPDO</li> <li>- Public Private Partnership (PPP)</li> <li>- Outsourcing</li> <li>- Collection fees (Garbage)</li> <li>- Penalty/Fines</li> </ul>

Sudipen	<ul style="list-style-type: none"> <li>- Garbage fees to households and commercial establishments based on the "Comprehensive Solid Waste Management Ordinance No. 48, series of 2003, Section 21a &amp; b to wit: " <i>Commercial and industrial establishments shall be charged an annual fee payable monthly, and residential units shall be charged an annual garbage fee payable monthly</i>" and the Municipal Ordinance No. 112, s. 2014 otherwise known as the Market Code, Section 2A11 of the Market Code of the LGU, that all stalls will be charged a garbage fee per annum depending upon the nature of business</li> </ul>
Tubao	<ul style="list-style-type: none"> <li>- Local Government Unit Annual Budget charged under the MOOE of the MPDO</li> <li>- Public Private Partnership (PPP)</li> <li>- Outsourcing</li> <li>- Collection fees (Garbage)</li> <li>- Penalty/Fines</li> </ul>

## 11.4. Cost Evaluation and Comparison

The ten-year costing for annual and investment cost is shown below.

Table 11.4.1 Ten (10)-Year Cost Comparison

Integrated Waste Management Program	Projected Cost (Php) / Time Frame										Total Cost (Php)
	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	
Investment Cost	50,500,000.00	124,500,000.00	98,000,000.00	113,000,000.00	88,000,000.00	88,000,000.00	88,000,000.00	88,000,000.00	88,000,000.00	88,000,000.00	914,000,000.00
Annual Cost	17,083,027.00	35,540,000.00	34,490,000.00	34,490,000.00	34,740,000.00	34,490,000.00	34,490,000.00	34,740,000.00	34,490,000.00	34,740,000.00	329,293,027.00
PS	2,397,359.63	2,554,506.55	2,721,954.46	2,900,378.57	3,090,498.39	3,293,080.56	3,508,941.99	3,738,953.14	3,984,041.51	4,245,195.44	32,434,910.24
MOOE	1,291,320.00	1,331,320.00	1,371,320.00	1,411,320.00	1,451,320.00	1,491,320.00	1,531,320.00	1,571,320.00	1,611,320.00	1,651,320.00	14,713,200.00
<b>TOTAL</b>	<b>71,271,706.63</b>	<b>163,925,826.55</b>	<b>136,583,274.46</b>	<b>151,801,698.57</b>	<b>127,281,818.39</b>	<b>127,274,400.56</b>	<b>127,530,261.99</b>	<b>128,050,273.14</b>	<b>128,085,361.51</b>	<b>128,636,515.44</b>	<b>1,290,441,137.24</b>

Table 11.4.2 Projected PS, MOOE, and Capital Outlay per LGU

Municipality/City		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10
Agoo	PS	2,075,590.00	2,075,590.00	2,075,590.00	2,075,590.00	2,075,590.00	2,075,590.00	2,075,590.00	2,075,590.00	2,075,590.00	2,075,590.00
	MOOE	4,100,000.00	4,200,000.00	4,300,000.00	4,400,000.00	4,500,000.00	4,600,000.00	4,700,000.00	4,800,000.00	4,900,000.00	5,000,000.00
	CO	1,000,000.00	1,200,000.00	8,350,000.00	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00	2,000,000.00
Aringay	PS	2,332,800	2,332,800	2,332,800	2,332,800	2,332,800	2,332,800	2,332,800	2,332,800	2,332,800	2,332,800
	MOOE	794,750	794,750	794,750	794,750	794,750	794,750	794,750	794,750	794,750	794,750
	CO	900,000	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000	3,500,000
Bacnotan	PS	1,686,188	1,686,188	1,686,188	1,686,188	1,686,188	1,686,188	1,686,188	1,686,188	1,686,188	1,686,188
	MOOE	1,328,000	1,328,000	1,328,000	1,328,000	1,328,000	1,328,000	1,328,000	1,328,000	1,328,000	1,328,000
	CO	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000	4,400,000
Bagulin	PS	516,000	516,000	516,000	516,000	516,000	516,000	516,000	516,000	516,000	516,000
	MOOE	680,000	740,000	806,000	875,000	956,000	956,000	956,000	956,000	956,000	956,000
	CO	2,000,000	6,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000	8,000,000

Balaoan	PS	1,378,472	1,378,472	1,942,472	1,942,472	1,942,472	1,942,472	1,942,472	1,942,472	1,942,472	1,942,472
	MOOE	2,402,000	980,000	1,108,000	1,156,400	1,284,040	1,284,040	1,284,040	1,284,040	1,284,040	1,284,040
	CO	1,300,000	6,000,000	7,300,000	7,300,000	7,300,000	7,300,000	7,300,000	7,300,000	7,300,000	7,300,000
Bangar	PS	3,250,000	3,250,000	3,250,000	3,250,000	3,250,000	3,250,000	3,250,000	3,250,000	3,250,000	3,250,000
	MOOE	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
	CO	15,200,000	12,000,000	1,500,000	1,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000	4,500,000
Bauang	PS	3,706,112	3,706,112	3,706,112	3,706,112	3,706,112	3,706,112	3,706,112	3,706,112	3,706,112	3,706,112
	MOOE	1,976,000	2,330,000	2,630,000	2,685,000	2,685,000	2,685,000	2,685,000	2,685,000	2,685,000	2,685,000
	CO	0	0	0	0	0	0	0	0	0	0
Burgos	PS	378,000.00	378,000.00	378,000.00	378,000.00	378,000.00	378,000.00	378,000.00	378,000.00	378,000.00	378,000.00
	MOOE	100,000.00	100,000.00	150,000.00	150,000.00	200,000.00	200,000.00	250,000.00	250,000.00	300,000.00	300,000.00
	CO	4,100,000.00	3,100,000.00	3,100,000.00	3,100,000.00	3,100,000.00	3,100,000.00	3,100,000.00	3,100,000.00	3,100,000.00	3,100,000.00
Caba	PS	1,118,896	1,213,992	1,213,992	1,308,089	1,308,089	1,308,089	1,308,089	1,308,089	1,308,089	1,308,089
	MOOE	250,000	400,000	500,000	600,000	800,000	900,000	1,000,000	1,100,000	1,200,000	1,300,000
	CO	0	0	0	0	0	0	0	0	0	0
Luna	PS	1,764,000	1,764,000	1,764,000	1,764,000	1,764,000	1,764,000	1,764,000	1,764,000	1,764,000	1,764,000
	MOOE	1,152,000	1,180,000.00	1,328,000.00	1,369,400.00	1,507,040.00	1,507,040.00	1,507,040.00	1,507,040.00	1,507,040.00	1,507,040.00
	CO	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000	1,100,000
Naguilian	PS	2,272,633.88	2,272,633.88	2,272,633.88	2,272,633.88	2,272,633.88	2,272,633.88	2,272,633.88	2,272,633.88	2,272,633.88	2,272,633.88
	MOOE	1,452,000.00	1,452,000.00	1,452,000.00	1,452,000.00	1,452,000.00	1,452,000.00	1,452,000.00	1,452,000.00	1,452,000.00	1,452,000.00
	CO	2,000,000	15,000,000	17,000,000	17,000,000	17,000,000	17,000,000	17,000,000	17,000,000	17,000,000	17,000,000
Pugo	PS	963,288	963,288	963,288	963,288	963,288	963,288	963,288	963,288	963,288	963,288
	MOOE	554,000	951,000.00	937,000	1,046,000	1,078,000	1,078,000	1,078,000	1,078,000	1,078,000	1,078,000
	CO	10,825,000	810,000.00	6,850,000	5,480,000	10,520,000	10,520,000	10,520,000	10,520,000	10,520,000	10,520,000
Rosario	PS	540,000	594,000	653,000	719,000	791,000	791,000	791,000	791,000	791,000	791,000
	MOOE	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
	CO	0	0	0	0	0	0	0	0	0	0
City of San Fernando	PS	3,896,732.66	4,518,411.12	4,713,255.01	4,713,255.01	4,713,255.01	4,713,255.01	4,713,255.01	4,713,255.01	4,713,255.01	4,713,255.01
	MOOE	576,000.00	0.00	10,500.00	10,500.00	10,500.00	10,500.00	10,500.00	10,500.00	10,500.00	10,500.00

	CO	311,246.00	258,107.00	1,344,490.00	294,709.00	294,709.00	294,709.00	294,709.00	294,709.00	294,709.00	294,709.00
San Gabriel	PS	437,244.00	437,244.00	437,244.00	437,244.00	437,244.00	437,244.00	437,244.00	437,244.00	437,244.00	437,244.00
	MOE	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00	100,000.00
	CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
San Juan	PS	1,999,627	2,554,105	2,554,105	2,554,105	2,554,105	2,554,105	2,554,105	2,554,105	2,554,105	2,554,105
	MOE	1,375,000	1,675,000	1,675,000	1,675,000	2,000,000.00	2,000,000.01	2,000,000.02	2,000,000.03	2,000,000.04	2,000,000.05
	CO	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
Santo Tomas	PS	350,000	1,150,000	1,150,000	1,150,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000	1,200,000
	MOE	100,000	150,000	200,000	250,000	300,000	350,000	400,000	450,000	500,000	550,000
	CO	0	0	0	0	0	0	0	0	0	0
Santol	PS	1,020,000	1,020,000	1,261,876	1,261,876	1,565,322	1,565,322	1,565,322	1,565,322	1,565,322	1,565,322
	MOE	1,610,000	1,650,000	1,991,876	1,991,876	2,370,322	2,370,322	2,370,322	2,370,322	2,370,322	2,370,322
	CO	3,870,000	3,050,000	3,800,000	3,050,000	3,050,000	3,050,000	3,050,000	3,050,000	3,050,000	3,050,000
Sudipen	PS	1,020,000.00	1,020,000.00	1,020,000.00	1,020,000.00	1,020,000.00	1,020,000.00	1,020,000.00	1,020,000.00	1,020,000.00	1,020,000.00
	MOE	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00	10,000.00
	CO	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tubao	PS	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00	500,000.00
	MOE	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000	400,000
	CO	0	0	0	0	0	0	0	0	0	0

## 11.5. Summary

Shown in Table, the total investment for ten (10) years amounted to Php 914,000,000.00 and the estimated annual cost is at Php 329 Million. In total, the Province will be spending a projected cost of Php 1.2 Billion for the implementation of the Plan in ten (10) years.

### Plan Implementation

#### 121. Phases and Responsibilities

The following are the phases to be undertaken in the implementation of the SWM Plan. These will be implemented by the PGLU through the PSWMB and the PG-ENRO.

Table 121. Phases of Implementation

Phases of Implementation	Description
Phase 1- Ensure Manpower Requirement for the Implementation of Solid Waste Management Programs	<ul style="list-style-type: none"> <li>➤ Creation and filling-up of positions of Municipal Environment and Natural Resources Officer (SG 24) in all of the municipalities</li> <li>➤ Hiring of personnel and Filling-up of plantilla positions in-charge of the Integrated Waste Management Program of the PGLU</li> <li>➤ Creation of the Environmental Education and Enforcement Unit of the PG-ENRO</li> <li>➤ Creation of the Task Force for the enforcement and monitoring of the Plastic Code of La Union</li> <li>➤ Provision of hazard pay to environment and natural resources workers, whose scope of work involves exposure to various hazards</li> </ul>
Phase 2 – Updating of the Ten (10)-Year Provincial SWM Plan and Updating of the 10-Year SWM Plans of Component LGUs	<ul style="list-style-type: none"> <li>➤ Assistance to component LGUs in the conduct of Waste Analysis and Characterization Study (WACS) and updating of their respective 10-Year Solid Waste Management Plans to be further integrated and complemented in the annual review and updating of the provincial solid waste management plan</li> <li>➤ Approval of the Updated Plan by DENR-EMB and NSWMC</li> <li>➤ Review and update the 10-Year Solid Waste Management Plan every year as mandated in Section 16 of RA 9003</li> </ul>
Phase 3 – Enactment/ Adoption of Waste Management Related Ordinances	<ul style="list-style-type: none"> <li>➤ Adoption of the 2023 Plastic Code of La Union in all of the component LGUs</li> <li>➤ Conduct of benchmarking activities in LGUs with best practices of waste management</li> <li>➤ Enactment/ Adoption of up-to-date waste management related ordinances</li> </ul>
Phase 4 – Promote Province-wide IEC Campaign and Capacity Building on SWM	<ul style="list-style-type: none"> <li>➤ Production of IEC materials</li> <li>➤ Capacity building at the barangay/community level and institutions</li> </ul>

	<ul style="list-style-type: none"> <li>➤ Conduct research on specific waste management concerns (microplastic pollution, alternatives for plastic bags, disaster wastes, marine litters, and transboundary waste issues)</li> <li>➤ Integration of waste and other environmental management concepts in PGLU major events such that of the Mutia ti La Union, La Union Surfing Break, La Union Founding Anniversary, Youth Summit, among others</li> </ul>
Phase 5 – Ensure Compliance to Environmental Laws, Ordinances, and Plans through the Monitoring and Evaluation Strategies	<ul style="list-style-type: none"> <li>➤ Strengthen the monitoring team to include other agencies such that of from the DILG and other concerned agencies</li> <li>➤ Conduct joint monitoring with the DENR-EMB Region 1, component LGU, and PG-ENRO on the various areas of integrated waste management</li> <li>➤ Motivate and engage all sectors of the society to partake in various solid waste management programs through incentives</li> <li>➤ Enforce strict implementation of provincial ordinances on environment through the imposition of penalties</li> <li>➤ Ensure 100% waste collection coverage in all of the component LGUs</li> <li>➤ Ensure 100% compliance of LGUs to regular reporting duties, registration, and other environmental permits/requirements</li> <li>➤ Introduce creative programs and technologies to facilitate better plastic recovery (i.e., plastic bottle recycling sculpture or ecobins and the plastic bottle recycle vendo machine)</li> <li>➤ Initiate the reduction and prevention of marine litter/debris through the installation of trash traps, beach cleaning using garbage rollers and surf rakes to help in removing marine litters/debris</li> <li>➤ Conduct of Waste Analysis and Characterization Study (WACS) prior to the effectivity of the 2023 Plastic Code of La Union to establish baseline information and in every 3 years to assess the status of implementation and evaluate if the overall objectives are met</li> </ul>
Phase 6 – Rehabilitation and Upgrading of Existing Sanitary Landfill Facilities and other Environmental Infrastructures	<ul style="list-style-type: none"> <li>➤ Assist in the upgrading of existing sanitary landfill facilities and other environmental infrastructures</li> <li>➤ Technical assistance/operational support as may be requested from PGLU</li> </ul>
Phase 7 –Building Partnership for a better plastic recovery and recycling, development of Waste-to-Energy Project and Special Waste Management System for Household and LGU-owned Healthcare Facilities	<ul style="list-style-type: none"> <li>➤ Partner with obliged companies, concerned agencies, junkshops, and other private sectors to enhance plastic recovery, recycling, and processing of wastes in the Province</li> <li>➤ Conduct of Feasibility Study for the Establishment of Treatment, Storage, and Disposal Facility in La Union through Public-Private Partnership</li> <li>➤ Establishment of Waste-to-Energy Project by a Potential Proponent</li> </ul>

## 122 Milestones

The following are the milestones or important activities that the SWM Plan intends to be completed by the end of the indicated calendar year for the next 10 years.

**Table 12.2. SWMTen (10)-Year Milestones**

Year	Activities / Milestones
CY 2024	<ul style="list-style-type: none"> <li>☑ Filled-up plantilla positions in-charge of the Integrated Waste Management Program of the PGLU</li> <li>☑ Completed Waste Analysis and Characterization in all component LGUs following the DOST Guideline</li> <li>☑ Approval of the Updated 10-Year Solid Waste Management Plan of the Province</li> <li>☑ Massive IEC campaign on the Plastic Code of La Union conducted</li> <li>☑ Feasibility Study on the Establishment of TSD Facility in La Union completed</li> </ul>
CY 2025	<ul style="list-style-type: none"> <li>☑ 100% of the component LGUs have filled-up, established and positioned a permanent City/Municipal Environment and Natural Resources Office and Officer, respectively</li> <li>☑ Creation of the Environmental Education and Enforcement Unit of the PG-ENRO</li> <li>☑ Creation of the Task Force for the enforcement and monitoring of the Plastic Code of La Union</li> <li>☑ Eco-MRFs established in barangay and school</li> <li>☑ Plastic bottle recycling sculpture or ecobins installed in tourism areas and public areas</li> <li>☑ Pilot project on plastic bottle recycle vendo machine installed</li> <li>☑ Trash traps installed in waterways</li> </ul>
CY 2026	<ul style="list-style-type: none"> <li>☑ Adoption of the 2023 Plastic Code of La Union in all of the component LGUs</li> </ul>
CY 2027	<ul style="list-style-type: none"> <li>☑ 100% waste collection coverage in all of the component LGUs</li> <li>☑ 100% compliance of LGUs to regular reporting duties, registration, and other environmental permits/requirements</li> <li>☑ 100% implementation of No Open Burning in all of the barangays</li> </ul>
CY 2028	<ul style="list-style-type: none"> <li>☑ 100% of the component LGUs with updated plan</li> </ul>
CY 2029	<ul style="list-style-type: none"> <li>☑ 100% of the component LGUs with approved plan</li> </ul>



CY 2030	<input checked="" type="checkbox"/> Waste diversion activities in-placed through the established partnership project with obliged companies aligned with the EPR Law
CY 2031	<input checked="" type="checkbox"/> Established a Public-Private Partnership for the development of Special Waste Management System for Household and LGU-owned Healthcare Facilities
CY 2032	<input checked="" type="checkbox"/> Established a Public-Private Partnership for the development of Waste-to-Energy Project in La Union
CY 2033	<input checked="" type="checkbox"/> Conduct of Waste Analysis and Characterization Study

## 12.3. Implementation Schedule

The 10-year implementation schedule of solid waste activities and projects is shown below.

Table 12.3. Ten (10)-Year Implementation Schedule of the Integrated Waste Management Program

Integrated Waste Management Program	Office/Agency/ Person Responsible	Implementation Schedule									
		2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
<b>Solid Waste Management Program</b>											
Provincial Solid Waste Management Board (PSWMB and TWG Meetings)	PSWMB, PG-ENRO										
Joint monitoring in the implementation of Solid Waste Management plans of LGU	PG-ENRO, LGU, DENR-EMB										
Collaboration with LGUs in the establishment/ upgrading of sanitary landfill facility	PG-ENRO, LGU										
<b>Special Waste Management</b>											
Healthcare Waste Management Monitoring in Provincial and District Hospitals	PG-ENRO, PHO, DHs										
Toxic and hazardous waste monitoring	PG-ENRO, DENR-EMB										
Hazardous Waste Storage Facility Accreditation	PG-ENRO										

Collaboration with LGU in the establishment of waste central storage and treatment facility	PG-ENRO, LGU										
<b>Liquid Waste Management Program</b>											
Wastewater Management Monitoring and Investigation	PG-ENRO, LGU, DENR-EMB										
Collaboration with LGUs and private entity in the establishment of wastewater treatment facility	PG-ENRO, LGU										
Installation of Water Pollution Abatement (trash traps)											
<b>Formulation and Updating of Waste Management Plans</b>											
Updating of the 10 -Year SWM Plan	PG-ENRO, LGU										
Conduct of research on various issues/areas on waste management (salary & purchase of desktop & printer)	PG-ENRO										
<b>Public-Private Partnership on the Establishment of TSD Facility</b>	PPP										

<b>Awareness campaign on waste management</b>											
Conduct awareness campaign on waste management (healthcare wastes, toxic and hazardous wastes, plastic recycling and recovery)	PG-ENRO, LGU										
E-Waste Collection Annual Event (Partnership with IRI & Junkshop)	PG-ENRO, LGU, DENR-EMB										
Project ECHO: Determination of Ecobrick bottle's compressive strength	PG-ENRO, LGU PG-ENRO										
Brand Audit Coastal Clean-Up	PG-ENRO, LGU										
Implementation of the Plastic Ordinance	PG-ENRO, LGU										
Bayong Project (Partnership with LGU & LINK Sustainable Palengke)	PG-ENRO, Partner NGO and LGU										
PCO and Managing Heads training to LGUs	PG-ENRO										
institutionalization of clean coast project	PG-ENRO, LGU										
Installation of Buyback center (plastic bottle recycle vendo machine)	PG-ENRO										
<b>Disaster Waste Management</b>											

Monitoring & assistance during and aftermath of disasters	PG-ENRO, LGU										
<b>Environmental Events and Advocacies</b>											
National Zero Waste Month	PG-ENRO, LGU										
International Coastal Clean Up	PG-ENRO, LGU										
<b>Cleanest Safest and Greenest Program (SPA)</b>											
Kick-off Meeting & Evaluation with Provincial Search Committee (Honoraria, logistics, etc.)	PSC, PG-ENRO										
CSG Deliberation/Best practice sharing	PSC, PG-ENRO										
Awarding of Winners (SPA)	PSC, PG-ENRO										
<b>Search for the Most Eco-Friendly PGLU Office (in partnership with OPAdmin) (ISO)</b>	PG-ENRO, PGLU Offices										
<b>Environmental Management System for ISO</b>											
Waste Management Committee	Waste Management Chairperson and Members										
Monitoring of waste generation	PGSO, Waste Management Chairperson and Members										

Application for Permit to Transport	Waste Management & Chemical Control and Management Chairpersons										
Procurement of Hauling Vehicle for Hazardous Waste	Pollution Control Officer, Waste Management & Chemical Control and Management Chairpersons										
Establishment of Material Recovery Facility for Hazardous Wastes generated within PGLU premises	PGSO, Waste Management & Chemical Control and Management Chairpersons										
PGLU Hazardous Waste Storage Facility Accreditation	Pollution Control Officer, Waste Management & Chemical Control and Management Chairpersons										
Hauling, Transport, and Treatment of PGLU's special wastes	Waste Management & Chemical Control and Management Chairpersons										

Installation of Wastewater Treatment Facility for PGLU facilities	PEO, Water Conservation and Management Chairperson										
<b>STRATEGIC ACTIVITIES</b>											
<b>Assistance to LGUs in the establishment of Wastewater Treatment Facility (sewerage, septage, etc.)</b>	PG-ENRO, PEO, LGU										
<b>Development of waste Management System for household and LGU-owned Healthcare Facilities</b>	PG-ENRO, LGU										
Installation of Waste Treatment Technology (i.e., Purification, Gassification, etc)											
Purchase of Hauler Truck											
Establishment of Treatment Facility											
<b>Establishment of Eco-MRF (Barangays &amp; Schools)</b>	PG-ENRO, LGU										
<b>Incentives/Hazard Pay for Environmental Workers (Garbage Collectors.Sweepers/Utility Workers)</b>	PG-ENRO										
<b>Assistance to LGUs in the upgrading of existing sanitary landfill facilities</b>	PG-ENRO, PEO, LGU										

<b>Establishment of Material Recovery Facility</b>		PG-ENRO, DH, LGU										
<b>Kalikasan Intervention Project)</b>	<b>Naman (Ecobin</b>	PG-ENRO, LGU										
<b>Capacity Development Program</b>	<b>Development</b>	PG-ENRO, Training Service Providers										

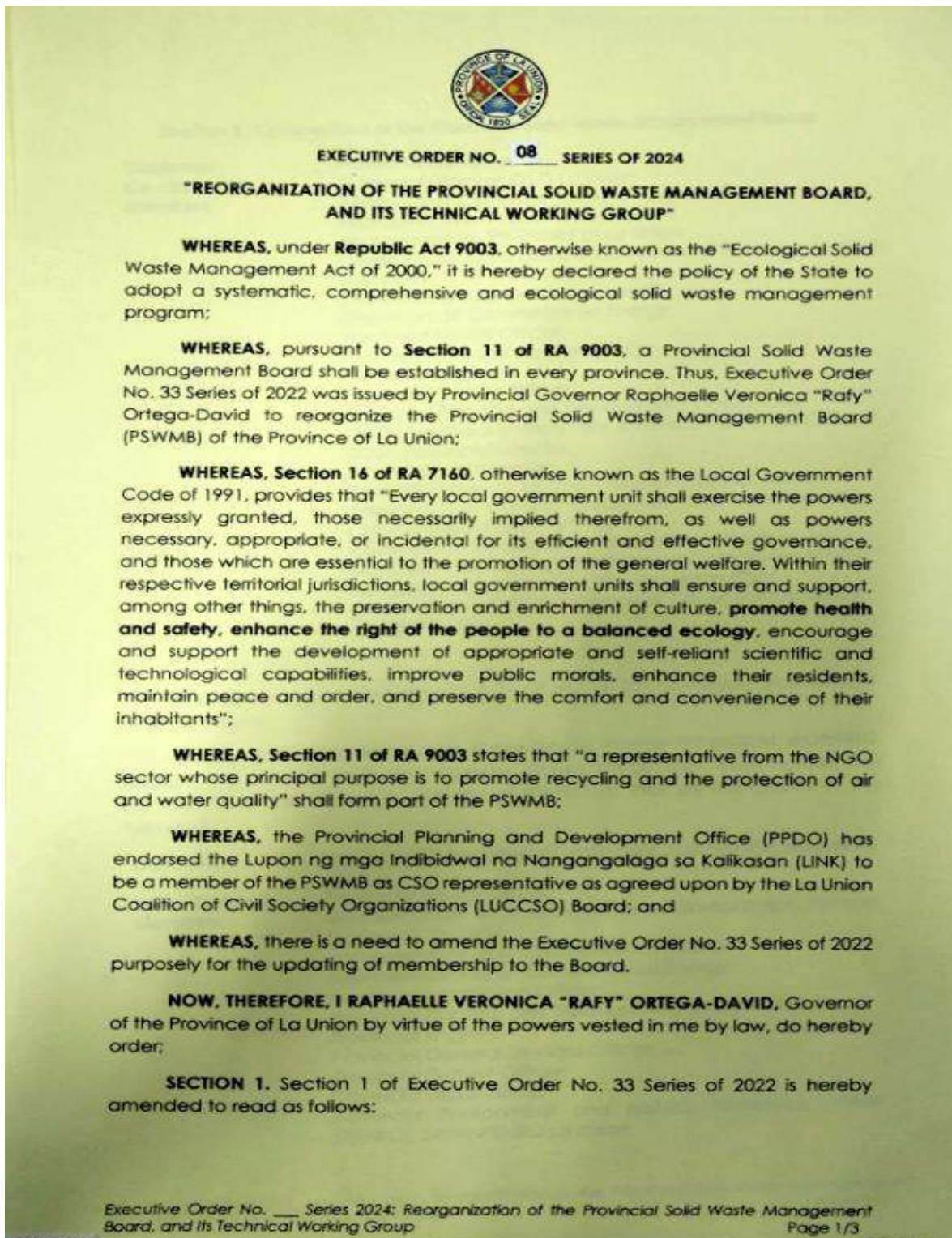


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- National Statistics Office
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- PENRO
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- DENR RO1
- Provincial Planning and Development Office
- PG-ENRO and DENR-EMB Joint Monitoring Report, CY 2023
- Final Report on the Development of Provincial Special Wastes Management System for Households and LGU-Owned Facilities, CY 2021

## ANEXA

### Executive Order No. 8, Series of 2024 Reorganization of the Provincial Solid Waste Management Board, Defining Its Composition, Powers and Functions and for Other Purposes



### Section 1. Composition of the Provincial Solid Waste Management Board

<b>Chairman</b>	: Provincial Governor
<b>Co-chairman</b>	: Provincial Director, DILG-La Union
<b>Members</b>	: All Mayors of Component City & Municipalities Representative, 1 <sup>st</sup> District of La Union Representative, 2 <sup>nd</sup> District of La Union Chairman, SP Committee on Environment & Human Ecology & Security Chairman, SP Committee on Health Chairman, SP Committee on Energy Provincial Health Officer Provincial General Services Officer Provincial Engineer Provincial Budget Officer Provincial Planning and Development Coordinator DENR, Provincial Environment & Natural Resources Officer DOST, Provincial Director DTI, Provincial Director Provincial Director, La Union Police Provincial Office President, Don Mariano Marcos Memorial State University CHED, Regional Director Chairman of the Board, La Union Vibrant Women, Inc Manager, Helix Mining Development Corporation (HMDC) <u>Manager, Helix Philippines, Inc – La Union Plant</u> President, Junkshop Association of City of San Fernando <u>President, LINK</u>

**SECTION 2.** Section 3 of Executive Order No. 08, 2017 is hereby amended to read as follows:

**Section 3. COMPOSITION AND ROLES OF THE PSWMB TECHNICAL WORKING GROUP-** The PSWMB Technical Working Group (TWG) who shall handle the administrative and technical activities of the Board shall be composed of the following:

<b>Chairman</b>	: <u>Provincial Government-Environment and Natural Resources Officer</u>
<b>Vice-Chairman</b>	: Provincial Health Officer
<b>Members</b>	: Representative of SP Committee on Environment, Human Ecology & Security Representative of SP Committee on Health Representative of SP Committee on Energy Provincial Information Officer Provincial Planning and Development Coordinator Provincial Engineer Provincial General Services Officer Provincial Budget Officer Provincial Legal Officer Provincial Environment and Natural Resources Officer (PENRO), DENR-PENRO La Union



Regional Director, DENR-EMB Region 1  
Provincial Director, DOST La Union  
President, League of Local Planning and Development  
Coordinators of La Union

**Other agencies on-call basis**

The Secretariat shall be headed by the Provincial Government – Environment and Natural Resources Office (PG-ENRO).

**SECTION 3. REPEALING CLAUSE** – All executive orders and other issuances which are inconsistent with this Executive Order are hereby repealed or modified accordingly.

**SECTION 4. EFFECTIVITY** – This Executive Order shall take effect immediately.

**DONE** in the City of San Fernando, La Union this 05 FEB 2024.

  
**RAPHAELLE VERONICA "RAFY" ORTEGA-DAVID**  
Provincial Governor

cc: **PRESIDENT FERDINAND R. MARCOS, JR.**  
Malacañang Palace

**DIR. JONATHAN PAUL M. LEUSEN, JR., CESO III**  
Regional Director, DILG

All Members

**MA. ANTONIA YULO-LOYZAGA**  
DENR Secretary

**DIR. REGGIE R. COLISAO, CESO V**  
Provincial Director, DILG

## ANNEX B

### NSWMC Resolution No. 1380 series of 2020 Adopting the Guidelines on the Waste Analysis and Characterization Study and its Related Manual



Office of the President  
**NATIONAL SOLID WASTE MANAGEMENT COMMISSION**  
Department of Environment and Natural Resources  
2nd Flr. HRDS Bldg., DENR compound, Visayas Avenue, Diliman, Quezon City, 1100  
Tel. Nos. (632) 920-2252 / 920-2279



#### NSWMC Resolution No.1380, Series of 2020

##### ADOPTING THE GUIDELINES ON THE WASTE ANALYSIS AND CHARACTERIZATION STUDY AND ITS RELATED MANUAL

**WHEREAS**, Section 10 of Republic Act 9003 otherwise known as the "Ecological Solid Waste Management Act of 2000, mandates the Local Government Units (LGUs) to be primarily responsible for the implementation and enforcement of the provisions of the Act within their respective jurisdictions;

**WHEREAS**, Section 16 of the Act requires provinces, cities, and municipalities through their Solid Waste Management Boards (SWMBs) to prepare their respective 10-year Solid Waste Management (SWM) Plans consistent with the National Solid Waste Management Framework and in accordance with the provisions of the Act and the policies set by the National Solid Waste Management Commission (NSWMC);

**WHEREAS**, Section 17 of the Act also stipulates the components of the Local Solid Waste Management Plans to include Waste Characterization Study (WACS) where the information by volume, percentage in weight or its volumetric equivalent, and material type from the representative of the solid waste generated and disposed of from residential, commercial, industrial and other sources;

**WHEREAS**, Section 19 of the Act provides that the Department of Environment and Natural Resources (DENR) in coordination with the LGUs, shall be responsible for the establishment of guidelines for the accurate characterization of wastes;

**WHEREAS**, the Department of Environment and Natural Resources (DENR) acts as the chairman of the National Solid Waste Management Commission (NSWMC) composed of fourteen (14) National Government Agencies (NGAs) and three (3) members from the private sectors;

**WHEREAS**, NSWMC Resolution No. 85, series of 2014, created a Multi-Agency Sub-Group (MASG) to develop the guidelines on the Waste Analysis and Characterization Study (WACS) and Computation of Waste Diversion;

**WHEREAS**, the Executive Committee accepted and adopted the guidelines and endorses the same to the En Banc for adoption;

**NOW THEREFORE, BE IT RESOLVED AS IT IS RESOLVED**, that the Guidelines on Waste Analysis and Characterization Study (WACS) and its Related Manual be adopted.

**FURTHER RESOLVED** that the prescribed color coding of waste bins/bags according to its classification shall be as follows: Green for Biodegradables, Blue for Recyclables, Red for Household Special Waste and Black for Residual Waste.

The Guidelines on WACS shall serve as the prescribed guide for all government initiated conduct of WACS and shall be the standard and basis of all 10-Year Solid Waste Management Plans submitted to the Commission for approval effective January 2021.

This resolution takes effect upon approval.

**APPROVED** on this 30<sup>th</sup> day of September 2020.

**BENNY D. ANTIPORDA**  
Undersecretary for Solid Waste Management and  
Local Government Units Concerns  
Alternate to the Chairman, NSWMC

*Waste No More! Waste No Time!*

## ANNEX C

### NSWMC Resolution No. 1655 series of 2024 Adopting the Annexes to the Annotated Outline for the Renewal of 10-Year Solid Waste Management Plans of Local Government Units



Office of the President  
**NATIONAL SOLID WASTE MANAGEMENT COMMISSION**  
Department of Environment and Natural Resources  
2<sup>nd</sup> Flr. HRDS Bldg., DENR compound, Visayas Avenue, Diliman, Quezon City, 1100  
Tel Nos. (632) 8539-4378 local 125



NSWMC Resolution No. 1655, Series of 2024

#### RESOLUTION ADOPTING THE ANNEXES TO THE ANNOTATED OUTLINE FOR THE RENEWAL OF 10-YEAR SOLID WASTE MANAGEMENT PLANS OF LOCAL GOVERNMENT UNITS

**WHEREAS**, Section 10 of the Republic Act (RA) No. 9003, also known as the Ecological Solid Waste Management Act of 2000 provides that Local Government Units (LGUs) shall be primarily responsible for the implementation and enforcement of the provisions of the Act within their respective jurisdiction;

**WHEREAS**, Section 16 of RA 9003 requires provinces, cities, and municipalities through their local solid waste management boards, to prepare their respective 10-year solid waste management (SWM) plans consistent with the National Solid Waste Management Framework and in accordance with the provisions of the Act and the policies set by the National Solid Waste Management Commission (NSWMC);

**WHEREAS**, Section 16 of the RA9003 also provides that all LGU SWM Plans shall be subject to the approval of the NSWMC;

**WHEREAS**, the NSWMC Executive Committee during its meeting held on February 22, 2024, recommended adopting the Annexes of the Annotated Outline for the renewal of 10-year Solid Waste Management Plans of Local Government Units (LGUs);

**NOW THEREFORE, BE IT RESOLVED, AS IT IS HEREBY RESOLVED**, to adopt the following Annexes to the annotated outline:

Annexes	Description
1. Marine Litter	<ul style="list-style-type: none"><li>• LGUS Programs on Addressing Marine Litters</li><li>• Role of LGUS in the National Program of Action on Marine Litter (NPOA-ML)</li></ul>
2. Extended Producers Responsibility Program (EPR) (RA 11898- Section 44-A, Subsection b.6.)	<ul style="list-style-type: none"><li>• LGUs' partnership with communities, and the informal waste sector within the the-year period.</li></ul>
3. Informal Waste Sector (IWS)	<ul style="list-style-type: none"><li>• Description of plans, programs</li></ul>

*Waste No More! Waste No Time!*



## ANNEX D

### NSWMC Resolution No. 1056-B, series of 2024 Resolution Approving Ten-Year Solid Waste Management Plan of Province of La Union



Office of the President  
**NATIONAL SOLID WASTE MANAGEMENT COMMISSION**  
**Department of Environment and Natural Resources**  
2<sup>nd</sup> Flr. HRDS Bldg., DENR compound, Visayas Avenue, Diliman, Quezon City, 1100  
Tel Nos. (632) 920-2252 / 920-2279



#### NSWMC Resolution No. 1056-B, Series of 2024

#### RESOLUTION APPROVING TEN-YEAR SOLID WASTE MANAGEMENT PLAN OF PROVINCE OF LA UNION

**WHEREAS**, the National Solid Waste Management Commission ("the Commission") is composed of eight (8) members from the government sector and five (5) members from the private sector in accordance with the provision of the Republic Act No. 11898, otherwise known as An Act Institutionalizing the Extended Producer Responsibility on Plastic Packaging Waste, Amending for this Purpose Republic Act No. 9003 otherwise known as the Ecological Solid Waste Management Act of 2000 ("the Act");

**WHEREAS**, Section 10 of RA 9003 provides that Local Government Units (LGUs) shall be primarily responsible for the implementation and enforcement of the provisions of the Act within their respective jurisdictions;

**WHEREAS**, Section 16 of RA 9003 requires provinces, cities, and municipalities through their local Solid Waste Management Boards, to prepare their respective 10-year Solid Waste Management Plans (SWMP) consistent with the National Solid Waste Management Framework and in accordance with the provisions of the Act and the policies set by the National Solid Waste Management Commission;

**WHEREAS**, Section 16, of RA 9003 also provides that all LGU SWM Plans shall be subject to the approval of the NSWMC;

**WHEREAS**, NSWMC Resolution 39, series of 2009 entitled Resolution Amending NSWMC Resolution No. 8 entitled "Guidelines on the Review and Approval of the 10-year SWM Plans of LGUs" was approved on October 09, 2009, by then DENR Secretary Hon. Jose L. Atienza;

**WHEREAS**, after (a) thorough review and evaluation by the NSWMC Secretariat, the NSWMC-ExeCom, in a meeting on March 21, 2024, has agreed to endorse for the approval of the NSWMC En Banc, the **10-year SWM Plan (2024-2033) of the Province of La Union**;


**NOW, THEREFORE, BE IT RESOLVED, AS IT IS HEREBY RESOLVED**, that the 10-year SWM plan of the said LGU be approved and be made available to the public upon request.

**FURTHER**, it is hereby resolved that LGU La Union be required to submit the final version of the plan, with a Sangguniang Panlalawigan Resolution and an annual progress report on the strategies implemented, as well as the accomplishments, to the National Solid Waste Management Commission, through its Secretariat. In the event a new set of officers is elected, a proper turn-over shall be undertaken by the LGU to the newly-elected officials who shall notify the Commission on the progress of the turn-over.

**FURTHERMORE**, the NSWMC may revoke the approval of the plan if, upon monitoring, non-compliance with the law and the 10-year plan is evident.

This resolution takes effect upon approval.

**APPROVED** on the 26<sup>th</sup> day of March 2024, Quezon City.

  
**ATTY. JUAN MIGUEL T. CUNA, CESO I**  
Undersecretary for Field Operations Luzon, Visayas and  
Supervising Undersecretary for MGB – Luzon and Visayas  
and Environmental Management Bureau – Luzon and Visayas

*Waste No More! Waste No Time!*

## ANNEX E

### Sangguniang Panlalawigan Resolution No. 164-2024 Adopting the Updated 10-Year Solid Waste Management Plan for CY 2024-2033 of the Province of La Union

Republic of the Philippines  
**PROVINCE OF LA UNION**  
City of San Fernando

**TANGGAPAN NG SANGGUNIANG PANLALAWIGAN**

EXCERPT FROM THE JOURNAL OF THE 84<sup>th</sup> REGULAR SESSION OF THE 23<sup>rd</sup> SANGGUNIANG  
PANLALAWIGAN OF LA UNION HELD AT THE SPEAKER PRO-TEMPORE FRANCISCO I. ORTEGA  
PROVINCIAL LEGISLATIVE BUILDING AND SESSION HALL, PROVINCIAL CAPITOL,  
CITY OF SAN FERNANDO, PROVINCE OF LA UNION ON FEBRUARY 06, 2024

**Hon. Maria Rosario Eufrosina P. Nisce**..... Acting Vice-Governor  
Sangguniang Panlalawigan Member

PRESENT:

Hon. Geraldine Joy R. Ortega.....	Member
Hon. Gerard G. Ostrea.....	Member
Hon. Jennifer C. Mosuela-Fernandez.....	Member
Hon. Aaron Kyle M. Pinzon.....	Member
Hon. Maria Annabelle S. De Guzman.....	Member
Hon. Henry B. Balbin.....	Member
Hon. Cynthia Angelica M. Bacunay.....	Member
Hon. Ruperto A. Rillera, Jr.....	Member
Hon. Victor I. Rivera.....	Member
Hon. Pablo C. Ortega.....	Member
Hon. Ramon Guio A. Ortega, Jr.....	Member
Hon. Harold Dave E. Sibuma.....	Member

ABSENT:

N O N E

**RESOLUTION NO. 164-2024**

**ADOPTING THE UPDATED 10-YEAR SOLID WASTE MANAGEMENT PLAN FOR CY 2024-2033  
OF THE PROVINCE OF LA UNION**

*Author: Hon. Pablo C. Ortega*

WHEREAS, presented before this August Body is the letter of Honorable Raphaelle Veronica "Rafy" Ortega-David, dated January 16, 2024, respectfully requesting for the adoption of the Updated 10-Year Solid Waste Management Plan CY 2024-2033 of the Province of La Union;

WHEREAS, the 10-Year Solid Waste Management Plan is a comprehensive plan for the continuity of solid waste management programs, projects, and activities in the province in accordance with the National Solid Waste Management Framework and pursuant to the provisions of Republic Act No. 9003 or the Ecological Solid Waste Management Act of 2000, and Provincial Ordinance No. 352-2021, entitled: "2021 Revised Environmental Protection and Management Code of La Union;"

WHEREAS, this plan also aims to strengthen the implementation of the 2023 Plastic Code of La Union and other strategies geared towards source reduction, waste minimization, increasing collection coverage, building partnerships for recovery and recycling, provision of solid waste management support equipment, introduction to innovative and relevant programs and technologies, upgrading of existing waste disposal facilities, and social and behavioral change communication strategies, all of which are aimed to secure the inhabitants of La Union toward a balanced and healthy environment, while achieving its optimum progress;

WHEREAS, in consideration thereof and upon presentation of the same during the joint committee hearing led by the SP Committee on Environment and Human Ecology and Security, the Sangguniang Panlalawigan finds the same to be and are aligned to the relevant policies in order, hence, it is deemed necessary to adopt the Updated 10-Year Solid Waste Management Plan of the Province of La Union;



NOW, THEREFORE, on motion of Hon. Pablo C. Ortega, unanimously seconded;

THE SANGGUNIAN PANLALAWIGAN IN SESSION DULY ASSEMBLED:

RESOLVED, as it is hereby resolved, to adopt the Updated 10-Year Solid Waste Management Plan for CY 2024-2033 of the Province of La Union;

RESOLVED FURTHER, that the signed copy of the plan shall form part of this resolution;

RESOLVED FURTHERMORE, that a copy of this resolution be furnished to Honorable Governor Raphaelle Veronica "Rafy" Ortega-David, for information and guidance.

APPROVED.

\*\*\*\*\*


I HEREBY CERTIFY to the correctness of the foregoing resolution.

  
JANE T. FLORES, Ph. D.

Acting Secretary to the Sangguniang Panlalawigan

ATTESTED:

  
MARIA ROSARIO EUFROSINA P. NISCE

  
Acting Vice-Governor  
Temporary Presiding Officer  
Sangguniang Panlalawigan Member

Provincial Ordinance No. 426-2023 Enacting the Single-Use Plastics (SUPs) and Other Reusable and Disposable Materials Code of the Province of La Union

Republic of the Philippines  
PROVINCE OF LA UNION  
City of San Fernando

**TANGGAPAN NG SANGGUNIANG PANLALAWIGAN**

EXCERPT FROM THE JOURNAL OF THE 53<sup>rd</sup> REGULAR SESSION OF THE 23<sup>rd</sup> SANGGUNIANG PANLALAWIGAN OF LA UNION HELD AT THE SPEAKER PRO-TEMPORE FRANCISCO I. ORTEGA PROVINCIAL LEGISLATIVE BUILDING AND SESSION HALL, PROVINCIAL CAPITOL, CITY OF SAN FERNANDO, PROVINCE OF LA UNION ON JULY 04, 2023

**Hon. Mario Eduardo C. Ortega** ..... Vice-Governor / Presiding Officer

**PRESENT:**

<b>Hon. Maria Rosario Eufrosina P. Nisce</b> .....	Member
<b>Hon. Gerard G. Ostrea</b> .....	Member
<b>Hon. Jennifer C. Mosuela-Fernandez</b> .....	Member
<b>Hon. Aaron Kyle M. Pinzon</b> .....	Member
<b>Hon. Maria Annabelle S. De Guzman</b> .....	Member
<b>Hon. Henry B. Balbin</b> .....	Member
<b>Hon. Cynthia Angelica M. Bacurnay</b> .....	Member
<b>Hon. Ruperto A. Rillera, Jr.</b> .....	Member
<b>Hon. Victor I. Rivera</b> .....	Member
<b>Hon. Pablo C. Ortega</b> .....	Member
<b>Hon. Geraldine R. Ortega</b> .....	Member
<b>Hon. Alyssa Kristine B. Sibuma</b> .....	Member

**ABSENT:**

**Hon. Geraldine Joy R. Ortega** ..... Member (VL)

**PROVINCIAL ORDINANCE NO. 426-2023**

**ENACTING THE SINGLE-USE PLASTICS (SUPs) AND OTHER REUSABLE AND DISPOSABLE MATERIALS CODE OF THE PROVINCE OF LA UNION**

<i>Author:</i>	<i>Hon. Pablo C. Ortega</i>
<i>Co-Authors:</i>	<i>Hon. Maria Rosario Eufrosina P. Nisce</i>
	<i>Hon. Geraldine Joy R. Ortega</i>
	<i>Hon. Gerard G. Ostrea</i>
	<i>Hon. Jennifer C. Mosuela-Fernandez</i>
	<i>Hon. Aaron Kyle M. Pinzon</i>
	<i>Hon. Maria Annabelle S. De Guzman</i>
	<i>Hon. Henry B. Balbin</i>
	<i>Hon. Cynthia Angelica M. Bacurnay</i>
	<i>Hon. Ruperto A. Rillera, Jr.</i>
	<i>Hon. Victor I. Rivera</i>
	<i>Hon. Geraldine R. Ortega</i>
	<i>Hon. Alyssa Kristine B. Sibuma</i>

**EXPLANATORY NOTE**

Article II, Section 16 of the 1987 Philippine Constitution provides that "the State shall protect and advance the right of the people to a balanced and healthful ecology in accord with the rhythm and harmony of nature." Moreover, Section 3 (i) of R.A. 7160 provides that, "Local Government Units shall share with the National Government the responsibility in the management and maintenance of ecological balance within their territorial jurisdiction subject to the provisions of this Code and national policies."

In the province of La Union, the single-use, carry-out plastic bags, sando bags and/or plastic labo as well as styrofoam or styrophor are rampantly used to carry, transport or package goods and are usually given to consumers for free in stores which all the more contribute to the "throw-away" attitude of its users. Based on the Waste Analysis and Characterization Study (WACS) conducted in selected towns in the province, non-biodegradable plastic bags as well as styrofoam/styrophor contribute largely to the volume of city/municipal wastes being disposed daily and take a long time to degrade in soil and contribute to air, water and soil pollution. The component of plastics is a non-biodegradable material and if such is irresponsibly used and/or disposed, it exacerbates air, water, and land pollution, clogging of canals, creeks, rivers and other waterways during rainy seasons. Consequently, its improper disposal can potentially cause floods and harm water and marine resources that results in the deterioration of water quality and eventually constitute a serious threat to public health and the integrity of the ecosystem.

The burning of plastic bags, sando bags and/or plastic labo as well as styrofoam or styrophor in open dumps coupled with the rampant "throw-away" behavior of the population are exacerbating air, water, and land pollution, clogging of canals, creeks, rivers and other waterways specially during rainy seasons causing floods and harming our water and marine resources that results in the deterioration of water quality and eventually constituting a serious threat to public health and the integrity of the ecosystem.

In the marine environment, plastics are broken down into tiny pieces called microplastics which threaten marine biodiversity. By virtue of Republic Act No. 7160 specifically in Section 468 (a) (1) (vi), the Sangguniang Panlalawigan is empowered to protect the environment and impose appropriate penalties for activities which endanger the environment resulting in pollution, acceleration of eutrophication of rivers and lakes, or of ecological imbalance.

Due to awareness on the negative effects of single-use plastics in the environment, many Filipinos showed willingness to buy products in recyclable or refillable containers rather than sachets and they have even expressed willingness to change their behavior and use recyclables and refillables in lieu of single-use plastics packaging.

Various results from a nationwide survey showed that the majority of Filipinos are aware of the problem concerning plastics and in fact support the idea of regulating single-use plastics which strongly suggests a window of opportunity to pass key legislation on plastics and majority of the respondents opted for banning single-use plastics to address the problem of single-use plastics. There is a significant growing number of cities and municipalities in the Philippines which have passed ordinances that ban shopping bags and other single-use plastics and evidences have shown that plastic ban coupled with proper enforcement is effective.

Anent to this, the National Solid Waste Management Commission (NSWMC) issued Resolution No. 1363, series of 2020, directing the banning of the use of unnecessary single-use plastics (SUPs) by National Government Agencies (NGAs), Local Government Units (LGUs) Offices and all other Government Controlled Offices as means of solid waste avoidance and minimization strategy.

As the country transitioned to the "new normal" due to the COVID-19 threat, it is foreseen that solid wastes from packaging materials will increase due to the surge in delivery of food and other essential supplies thus existing waste management facilities may be overwhelmed by huge volume of wastes from households.





In order to safeguard and conserve our environment, there is a need to discontinue the use of non-biodegradable plastic bags and polystyrene products, and consequently shift to sustainable reusable materials. In order to discourage and reduce the use of these types of plastic bags in the province, it is deemed necessary to prohibit such use and introduce alternative materials that are more environment friendly.

Consequently, the ban of plastics may result in the increased demand and usage of disposable paper products, thus, this prompted the need to regulate these paper-based products to prevent the anticipated negative impact on the ecosystem such as forest degradation and pollution.

The Provincial Government of La Union shall take the lead in moving the Province of La Union away from dependence on SUPs in full recognition of the harm that these materials inflict on our environment and its people.

Section 57 of R.A. 9003 otherwise known as the Ecological Solid Waste Management Act of 2000 provides that the commercial and business sector shall be encouraged to initiate, participate and invest in integrated ecological solid waste management projects, to manufacture environment friendly products, to introduce, develop and adopt innovative processes that shall recycle and reuse materials, conserve raw materials and energy, reduce waste, and prevent pollution, and to undertake community activities to promote and propagate effective solid waste management practices.

The Local Government Unit shall have the primary responsibility in the effort to decrease the percentage of plastic wastes produced within their respective territorial jurisdiction. Moreso, the Local Government shall focus on the best interest of the health and welfare of the people which should impose the regulation, imposition of an environmental protection fee to: a) address the "throw-away" attitude of consumers on disposable products; b) ban single-use plastics and discourage the use of disposable materials; c) mainstream the reuse/refill system to phase out sachets and be replaced by alternative delivery systems; d) mainstream the use of reusable bags, food and beverage containers, and cutleries; e) invite the active participation of the citizenry in activities that promote a clean and sustainable environment; and f) establish greater responsibility from establishments using single-use plastics and other disposable materials by determining their obligations as well as providing them incentivized scheme program.

Be it ordained by the Sangguniang Panlalawigan of the Province of La Union in session duly assembled, that:

**Section 1. Title.** This ordinance shall be known as "**THE SINGLE-USE PLASTICS (SUPs) AND OTHER REUSABLE AND DISPOSABLE MATERIALS CODE OF THE PROVINCE OF LA UNION,**" and it's short title shall be known as "**2023 PLASTIC CODE OF LA UNION.**"

**Section 2. Scope.** This Code causes all existing general and relevant special ordinances to be included to the above subject matter of the Province of La Union that were previously enacted, as well as all Executive Orders issued by the Provincial Governor, resolutions adopted by the Sangguniang Panlalawigan that are in nature of general ordinances relevant thereto and other pertinent national laws, rules, and regulations.

**Section 3. Form and Style.** Some provisions of this Code preserved the original text and form in which the general ordinances were passed while the others were rewritten simply for clarity and style.



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#### Section 4. Definition of Terms.

- a. **Biodegradable plastic bags** - refers to plastic bags made of bio-based materials such as natural polymers from renewable sources like cellulose, starch, and plant-based proteins, polymers synthesized from renewable sources, and polymers produced by microorganisms. It is usually marketed as replacement for single-use non-biodegradable plastic carrier bags due to their claimed environmental benefits such as reduction in non-renewable resource use by replacement with renewable resources (e.g., wheat, potato, maize) and degradability in the environment which would reduce litter and landfill quantities. However, despite the name, biodegradable plastics do not degrade rapidly in the environment as the required conditions for it to degrade are generally not present in the natural environment.
- b. **Bring Your Own Bag/Container (BYOB/BYOC) Program** – refers to the program adopted by the supermarkets, convenient stores, department stores and other business establishments, whereby customers are enjoined to bring a reusable bag, cloth bag, or any alternative packaging material and container for purpose of containing, carrying, holding and transporting goods or products bought.
- c. **Business Establishments** - refers to an establishment or a cluster of establishments engaged in commerce or sale of goods or services, including but not limited to market stores, shopping malls outlets, supermarkets, department stores, groceries, convenience stores, food chains, restaurants, cafes, bars, sari-sari stores and the like.
- d. **Composting** – refers to systematic decomposition of organic matter by microorganisms, mainly bacteria and fungi, into a humus-like product.
- e. **Ecobricking** – refers to packing clean and dry used plastics into a plastic bottle to a set density.
- f. **Expanded Polystyrene (EPS) foam** – is a thermoplastic petrochemical material which utilizes a styrene monomer and is processed by fusion of polymer spheres. It is a type of polystyrene product commonly used as containers for food and beverages.
- g. **Extended Producer's Responsibility** – requires companies to assume responsibility for their products in every stage of their product's lifecycle even after the products have been sold, used, and disposed of.
- h. **Materials Recovery Facility** – refers to solid waste transfer station or sorting station, drop-off center, a composting facility, and a recycling facility.
- i. **Materials Recovery Vehicle** – refers to a vehicle used in collecting wastes to be diverted such as, but not limited to, recyclable wastes, biodegradable wastes, and residual wastes with potential for diversion.
- j. **Non-biodegradable materials** – refer to a kind of substance which cannot be broken down by natural organisms and acts as a source of pollution.

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- k. **Packaging-free products** – refer to products free from packaging
- l. **Primary Packaging** – refers to first level packaging that contains the item sold.
- m. **Recycling** – refers to the treating of used or waste materials through a process of making them suitable for beneficial use and for other purposes, and includes any process by which solid waste materials are transformed into new products in such a manner that the original products may lose their identity, and which may be used as raw materials for the production of other goods or services.
- n. **Secondary Packaging** – shall refer to the packaging, packing and wrapping of products for the purpose of carrying the same in a convenient manner; used to support primary packaging; usually intended for the convenience of the consumer.
- o. **Single-use plastics** – refer to disposable plastics products which are commonly used for packaging and include items intended to be used only once before they are thrown away or recycled. This includes, but are not limited to, items such as grocery bags, food packaging containers and bags, water bottles, straws, stirrers, styrofoam, cups, sachets, and plastic cutlery.
- p. **Styrofoam** – is a trademark of a product made up of light resilient foam of polystyrene. For purposes of this Ordinance, the term "Styrofoam" shall refer to the Expanded Polystyrene (EPS) Foam used as containers for food and beverages.
- q. **Upcycling** – is known as creative reuse. It transforms resources into new materials of better quality and environmental value without losing its original identity.

#### **Section 5. Rule of Construction.**

**Section 5.01** Words and Phrases not expressly defined. Words and phrases embodied in this Code which are not specifically defined shall have the same meaning as found in legal dictionaries as well as in existing laws.

**Section 5.02.** Amendment and Integration of Additional Provisions. Any amendment to this Code may be introduced in the Chapter, Article or Section concerned. All ordinances or provisions thereof enacted subsequent to the date of effectivity of this Code shall be compiled in such a way as to bear the corresponding Chapter, Article, or Section to which such provisions shall be integrated in the corresponding Chapter, Article, or Section whenever a new printing or reproduction of the Code is undertaken upon authorization of the Sangguniang Panlalawigan.

#### **Section 6. Prohibition in the Use of Single-Use Plastics.**






**Section 6.01.** Prohibition on the Use of Single-use Plastics and Polystyrene Products (Styrofoam).








- a. The use of the following single-use plastics and polystyrene products (styrofoam) are hereby prohibited in the Province of La Union, to wit:





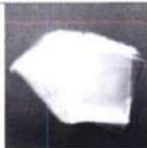



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PROHIBITED SUPs	
<p>Plastic cutlery such as plastic spoon and forks, and knives</p>  <p>Plastic straws</p>  <p>Plastic stirrers</p> 	<p>As of January 1, 2019 certain foam products will be banned from possession, sale, or use in NYC.</p>  <p>Styrofoam or polystyrene plates, take out containers, packaging peanuts, and beverage cups, bowls, trays</p>  <p>Plastic clamshells</p>

 <p>Plastic shopping bags with thickness of below 50 microns</p>  <p>Thin filmed-sando bags</p>	  <p>Plastic and silver-lined paper cups, plates, and food containers</p> 
 <p>Plastic thin drinking cups (lower than 0.2 mm in thickness)</p>	<p>Plastic rings</p> 

 <p>Plastic lids</p> <p>Plastic pouches</p>	 <p>Plastic wraps</p>
 <p>Plastic Labo bags</p>	<p>All types of balloons and sticks</p> 
 <p>Plastic sachets</p>	 <p>Plastic flaglets</p>
 <p>Plastic bags labelled as biodegradable/oxo-biodegradable</p>	<p>Plastic "banderitas" or buntings</p>  <p>Plastic Confetti</p>

Notes:

<sup>1</sup>Exemptions may be issued in times of health emergencies or upon the discretion of the Local Chief Executives.

<sup>2</sup>Regulated from this ordinance are goods in original plastic packaging and cannot be placed in new plastic bag or container upon purchase.






<sup>3</sup>More environment friendly materials over these items and the reuse/refill systems shall be encouraged.

<sup>4</sup>Exempted from this ordinance are those materials wherein the usage of such are essential for hygienic and sanitary purposes such as the sanitary composites (napkins, wipes, diapers, gloves, etc).

<sup>5</sup>Biodegradable plastics/oxo-biodegradable plastics shall only be allowed upon the verification of DOST Regional Office.



- b. The following regulations shall be imposed among individuals, consumers, vendors, suppliers, traders, distributors, and service providers in all business establishments, general stores, industries, institutions, public markets, recreation and service centers within the territorial jurisdiction of the Province of La Union:
- i. Prohibition on using plastic bags and styrofoam to customers as primary packaging materials on wet and dry goods;

	Primary Packaging	Alternative
Dry Goods		
Wet Goods		
Wet Goods		

- ii. Prohibition on using styrofoam cups, plastic cups, drinking straw, plastic used for juices, soft drinks, and other cold drinks like "palamig and gulaman" as well as "taho";

Prohibited	Alternative
	



- iii. Prohibition on using of plastic or styrofoam for re-packaging of all kinds of vegetables. Re-packaging of granular items such as salt, sugar, pepper, and other spices as well as beans, flour, and the like in "tingi tingi" basis is exempted;
- iv. Prohibition on using plastic bag, plastic wares and styrofoam to customer as secondary packaging materials on wet goods, frozen food contained in plastic wraps, vacuum-sealed food and other products such as, but not limited, to the following:

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- Food products in sachets
- Newborn essentials i.e., diapers, feeding bottles, milk products
- Canned and bottled goods, drinks and beverages
- Health and beauty cosmetics
- House needs i.e., toiletries, laundry products, kitchen utensils, wraps
- Snack foods i.e., nuts, chips, curls, gums, candies, cookies, crackers, biscuits, snack bars
- Dried fish, smoked fish
- Frozen products i.e., ice cream
- Foot wears, apparels, textiles
- Deli i.e., salads, cheese, cold cuts
- All kinds of fruits and vegetables including coconut and root crops
- School and office supplies
- Condiments, spreads, salad aids, seasonings, and sauces
- Cooking oils
- Baking needs
- Wine, spirits, and other liquor products
- Batteries, electronic products, hardware, electronic gadgets, car necessities
- Cakes, breads, and pastries
- Rice, noodles, pasta, macaroni, misua
- Dairy Products i.e., milk, butter yogurt, cheese, eggs
- Medicines in capsules, tablets or bottles
- Pet items i.e., dog and cat food
- Cigarettes
- All kinds of flowers (fresh and artificial), flower pots, vases and other materials in floral arrangements

Original packaging	Primary Packaging	Secondary Packaging
		
	Alternative 	Alternative 

- v. Wet goods that are not pre-contained in plastic pouches, wraps or bags are preferably to be contained in customer supplied "reusable" pre-cleaned and sanitized hard plastic containers. Old newspapers or any papers with prints are not allowed for wrapping wet goods such as fish, meat, and the like;
- vi. Prohibition on using styrofoam as food container. Styrofoam used as ice chests, insulators, and/or for any similar purposes may be allowed;
- vii. Prohibition on using of plastic wares or utensils such as forks, spoons, knives, plastic cups and styrofoam cups for dine-in and take out food;



- viii. Prohibition on the establishment of factories and those engaged in the manufacture and distribution or use of non-environmentally acceptable packaging materials; and
- c. Stores and other retail establishments shall make/use any alternative legally compliant packaging material available for customers at no cost or at reasonable cost at the point of sale such as but not limited to the materials mentioned in Section 7.01(a) hereof, in lieu of single-use plastics.

**Section 7. Regulation on the use of Paper-based / Biodegradable Disposables.**

**Section 7.01. Regulated Acts.**

- a. Food establishments/caterers/suppliers shall utilize their reusable own plates, utensils, and drinking glasses for dine-in customers. Otherwise, food establishments/caterers/suppliers shall use compostable/reusable containers for take-out purposes only with the corresponding additional charges. Compostable straws and edible straws shall be used during dine-in and take-out foods upon request and with corresponding additional charges. The additional charges on these materials shall be posted in the menu list and at the counter for the information of the customers.
- b. The purpose of regulating the use of paper-based/ biodegradable disposables is to promote change in the consumer behavior, shifting from "throw-away" habits to a lifestyle anchored on a circular economy or zero waste lifestyle. This regulation aims to reduce the generation of waste from biodegradables while encouraging the consumers to use reusable materials.

**Section 8. Promotion on the use of Reusable Materials.**

**Section 8.01. Promotion.**

- a. The use of recyclable, reusable and/or biodegradable alternative packaging materials such as reusable woven bags (bayong), cloth bags, rattan baskets, shopping bags made from sewed juice tetra pack or recycled waste paper, and other bags/wraps made out of biodegradable materials (e.g., banana leaves, taro leaves, water lily, corn stalk, bamboo ("silag") etc) shall be utilized as alternative packaging materials.
- b. Individuals are advised to bring his/her own water tumblers and eco-bag when traveling to reduce the urge to buy Polyethylene terephthalate (PET) bottles and plastic bags.
- c. Workers, especially the office employees, shall bring his/her own reusable water tumblers, eco-bags, plates, utensils, drinking glasses/mugs, and food containers at work.
- d. Schools shall institutionalize the utilization of reusable materials by issuing memoranda or directives to encourage employees and students to bring their own water tumblers, plates, mugs, food containers and other eating utensils.
- e. Buyers shall bring their own containers and reusable bags (preferably compartmentalized market bags to easily separate the items bought) when going to the establishments or market. Bring Your Own



Bag/Container (BYOB/BYOC) program shall be promoted by LGUs in public markets and shall be adopted by business establishments, supermarkets, convenient stores, and department stores.

- f. Consumers shall bring their own reusable food containers and beverage containers for take-out foods/beverages.
- g. Cooked foods traditionally sold in the school canteens or within the government institution premises shall utilize eco-friendly materials for packaging and distribution.
- h. Native Filipino foods traditionally made with eco-friendly packaging shall be served during meetings and other occasions within the government institutions.
- i. Water refilling stations and juice/coffee counters shall be made available in offices and classrooms.
- j. Reusable straws shall be encouraged.
- k. Customers who bring their own bags/containers for purchased/take-out goods/foods shall be given incentives or discounts by the establishments.
- l. Relevant retailers are encouraged to formulate its own mechanics for its incentive schemes that will generate goodwill and patronage from its loyal customers.
- m. Buyers who fail to bring their own bag may opt to buy reusable bags/biodegradable bags made available in the respective checkout counters of the stores, purposely for multiple reuse or at the entrance of public or private markets.
- n. Business establishments shall redesign and innovate their packaging or bags/containers and/or products and initiate plastic-free delivery for take-out and transport of their products according to eco-design principles as a waste minimization strategy.
- o. Courier services are encouraged to shift to sustainable biodegradable and reusable packaging materials.

**Section 9. Incentives.** The PGLU shall set-up or enhance the various incentive programs to motivate the establishments, schools, and other institutions to reduce their plastic footprint such as the Search for the Cleanest, Safest, and Greenest in component Local Government Units, Search for the Best Implementer of Magsidalus iti Arubayan among barangays, Green Tourism Enterprise Program for the establishments, Green Seal Award or Plastic-Free Campus in schools and institutions. These will recognize and award them for their outstanding management of solid wastes.

#### **Section 10. Recovery and Recycling Mechanism.**

##### **Section 10.01. Mechanisms:**

- a. LGUs are encouraged to promote interventions on residual wastes with potential for diversion such as but not limited to making of ecobricks or pavers/hollow blocks mixed with shredded plastics which can be used as an alternative material for construction.

- b. Recycling of PET bottles into planters, floaters, etc as well as plastic wrappers/sachets to bags and other creative recycling crafts/novelty items shall be promoted as community-based livelihood on plastic recovery programs.
- c. LGUs are encouraged to forge partnerships with companies thru the Extended Producer's Responsibility.

**Section 11. Support Mechanism.**

**Section 11.01. Local Government Units (LGUs) shall:**

- a. strengthen the role of junk shops in the recovery of the paper wastes and other recyclable materials.
- b. support industries and organizations engaged in the production of the alternative materials mentioned in Section 7 such as but not limited to the bamboo farmers and businesses involved in paper recycling or upcycling of waste materials, making alternative packaging materials such as reusable woven bags (bayong), cloth bags, rattan baskets, shopping bags made from sewed juice tetra pack or recycled waste paper, and other bags made out of biodegradable materials (e.g., banana leaves, taro leaves, water lily, corn stalk, bamboo ("silag") etc) shall be utilized as alternative packaging materials.
- c. also promote composting of biodegradable wastes.
- d. empower the Barangays with the primary responsibility in the collection and management of biodegradable wastes through the provision of equipment such as bio-shredders, Material Recovery Facilities with composting facility and warehouse for recyclable wastes, Material Recovery Vehicles shall be given to the barangays to support the ordinance.
- e. Livelihood programs on the development of these materials shall be also supported by the PGLU.

**SECTION 12. Enforcement and Monitoring.**

- a. Creation of Task Force
  - a.1. PGLU shall hire and deputize eco-rangers in each LGU to conduct daily inspection and monitoring of all areas stated in Section 3 to 5 to ensure the compliance of the establishments and institutions with the provisions of the ordinance.
  - a.2. Each eco-ranger shall also conduct Information, Education and Communications (IECs) in communities, schools, and other institutions.
  - a.3. Each eco-ranger is required to submit a monthly accomplishment report to the Provincial Government – Environment and Natural Resources Office (PG-ENRO).
  - a.4. Creation of Eco-ranger position. An eco ranger is hereby deputized to implement the provision of this ordinance using the POVR of the PGLU following the provisions under the POVR Ordinance.
- b. Creation of the Environmental Education and Enforcement Unit

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- b.1. An environmental education and enforcement unit composed of one SG 18, one SG 15 and one SG 11 shall be created under the PG-ENRO to conduct deputation training among volunteers in all barangays to be deputized as eco-rangers.
- b.2. Qualifications and guidelines are provided under the IRR of this Code.

### **SECTION 13. Research and Development.**

- a. Research and development investments for environment-friendly alternative materials and closed-loop systems shall be promoted in the higher education institutions and LGUs.
- b. The academe which is part of the Solid Waste Management Board of the LGUs shall lead in the conduct of research and development as well as in the communication, education, and public awareness campaign.

### **SECTION 14. Communication.**

#### **SECTION 14.01. Information Dissemination.**

- a. The Province, through the Public Information Office, with the support from PG-ENRO, shall spearhead the conduct of massive information, education and communication campaigns using quad media (print, radio, television, and internet). IEC campaign shall focus on banning SUPs, advocating BYOB and BYOC Programs, #chooseREUSABLES, Bring Your own Reusables, reuse/refill system, and promoting alternative packaging materials. The IEC shall include the production and distribution of materials related and consistent with the provisions of this ordinance.
- b. Each municipal/city LGU shall create its own IEC teams composed of, but not limited to, MENRO, Information Officer, Public Market Inspector.
- c. Schools shall conduct single-use plastic advocacy campaigns during the start of the academic year as part of their orientation program and other environmental protection activities to be included in their extension work plan.
- d. All establishments are encouraged to post signs and other informative materials encouraging customers to bring or use reusable bags. Relevant retailers are encouraged to use quad media advertisements to inform and encourage the community on the incentive mechanisms of the establishment.

### **SECTION 15. Linkages for Implementation.**

**SECTION 15.01.** Close coordination with and support from concerned agencies such as, but not limited to, DENR, DILG, DEPED, DOST, CHED, PENRO, DOH, DA, PIA, DTI, community organizations, and private sectors (NGOs, Junkshops) shall be sought for the implementation and assessment of this ordinance.

### **SECTION 16. Appropriation.**

**SECTION 16.01. Funding.** An amount of eight million six hundred pesos (Php 8,600,000.00) is hereby allocated annually for the programs, projects, and activities under this ordinance.

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BASIS	PROGRAMS, PROJECTS, AND ACTIVITIES	ANNUAL BUDGETARY REQUIREMENT	PARTNER OFFICE/S
<b>SECTION J. Communication</b>	IEC (i.e., steel signages, brochures, poster-making, radio program and other print materials)	900,000	PIO
<b>SECTION F. Recovery and Recycling Mechanism</b>	Livelihood Program (development of alternative biodegradable and/or reusable packaging materials or products)	1,000,000	PSWDO
	Ecobricking and EcoShed Project ("Palit Basura para sa Bigas")	1,000,000	LGUs
<b>SECTION G. Support Mechanism</b>	Barangay SWM Enhancement Program	2,000,000	LGUs
<b>SECTION F. Incentive</b>	Search for the Most Eco-friendly Schools and other Institutions	2,000,000	DepEd
<b>SECTION H. Enforcement and Monitoring</b>	Hiring of Eco-rangers and conduct of trainings	1,000,000	LGUs
<b>SECTION I. Research and Development</b>	Research and Development (Research Grant)	700,000	Academe
Total (Php)		<b>P 8,600,000.00</b>	

#### SECTION 17. Penal Provisions

- a. Any business establishments and institutions through its registered owner/operator and/or proprietor that violate any of the prohibited acts stated above shall be punished through the imposition of the following penalties:

First Infraction	:	Php 2,000.00 fine
Second Infraction	:	Php 3,000.00 fine
Third infraction and succeeding infractions	:	Php 5,000.00 fine

- b. Punishments/penalties for littering and burning of wastes shall be imposed in accordance with the provisions of RA 9003.

#### SECTION 17.01. Confiscation of Prohibited Plastics.

- a. The task force shall confiscate the prohibited single-use plastics and turn-over the SUPs to the concerned LGU for proper management and disposal. A citation ticket shall be issued to the violator by PG-ENRO or C/MENRO or any other deputized personnel. Necessary payment shall be made at the respective Treasurer's Office of LGUs. Establishment that fails to settle their liability within the given period shall be forwarded to the Legal Office for appropriate action.

**SECTION 18. Separability Clause.** If any part of this ordinance is declared as unconstitutional or unlawful, such declaration shall not affect the other parts or sections hereof that are not declared unlawful or unconstitutional.

**SECTION 19. Repealing Clause.** All previous ordinances inconsistent with this ordinance shall be deemed repealed or modified accordingly.






**SECTION 20. Effectivity.** There shall be a grace period of six (6) months from the date of enactment of the Ordinance for the conduct of a massive information campaign and another six (6) months for a warning violation with no penalties or other charges. All establishments engaged in the use and/or selling of single-use plastics and styrofoam as packaging materials for food and beverages shall be given six (6) months from the date of effectivity of the Ordinance to dispose of their remaining inventory and for consumers to adjust and conform.


UNANIMOUSLY APPROVED.

\*\*\*\*\*

I HEREBY CERTIFY to the correctness of the foregoing ordinance.

  
**DONATO A. RIMANDO, Ph.D.**  
Secretary to the Sangguniang Panlalawigan

ATTESTED:

  
**MARIO EDUARDO C. ORTEGA, MDA**  
Vice-Governor  
Presiding Officer

APPROVED:

  
**RAPHAELLE VERONICA "RAFY" ORTEGA-DAVID**  
Provincial Governor

Date Signed: AUG 14 2023

## ANNEX G

### Hazardous Waste Generator Registration Certificate OL-GR-R1-33-023010 issued on October 17, 2021



Republic of the Philippines  
Department of Environment and Natural Resources  
**ENVIRONMENTAL MANAGEMENT BUREAU**  
Region 1  
EMB Office, DENR Building, Government Center Barangay  
Savilla, City of San Fernando La Union  
Telephone Nos: (072) 700-24-48  
Website: <http://r1.emb.gov.ph>

#### HAZARDOUS WASTE GENERATOR REGISTRATION CERTIFICATE

Pursuant to Chapter 3 of DENR Administrative Order (DAO) No. 2013-22, the Implementing Rules and Regulations of Republic Act (RA) 6969, this Certificate is issued to:

Name of Establishment : **PROVINCIAL GOVERNMENT OF LA UNION -ENVIRONMENT AND NATURAL RESOURCES OFFICE**

Facility Address : AGUILA ROAD, BARANGAY II (POB.), CITY OF SAN FERNANDO (CAPITAL), LA UNION

You are hereby assigned with the new on-line registration no

**OL-GR-R1-33-023010**

This certifies that the above-named Hazardous Wastes Generator generates the following types of wastes:

Waste Class	Waste Number
Lead compounds	D406
Used industrial oil including sludge	I101
Tallow	I103
Oil-contaminated Materials	I104
Pathological or infectious wastes	M501
Pesticides	M504
Pharmaceuticals and drugs	M503
Waste electrical and electronic equipment (WEEE)	M506
Special wastes	M507
Vegetable oil including sludge	I102
Grease wastes	H802

1. The above-named HW Generator shall comply with all the requirements of RA 6969, its Implementing Rules and Regulation of the Republic Act RA 6969 and the Procedural Manual for Hazardous Wastes Management.
2. Submission of the duly notarized self monitoring report shall be made within fifteen (15) days after the end of every reporting period using prescribed format.
3. Please refer to this number whenever you make transactions with EMS on matters pertaining to RA 6969.

ENGR. MARIA DORECA NAZ REYES, CESE  
Regional Director

October 17, 2021



This is a computer generated certificate.  
To verify the authenticity of this file, kindly scan the generated QR Code using your QR Code scanner / reader or visit the HWMS website for details.

## ANNEX H

### Cooperation Agreement for Electronic Waste (E-waste) Collection Event

**"Implementation of PCB Management Programs for Electric Cooperatives  
and Safe E-wastes Management" – GEF ID Number 9078**

**COOPERATION AGREEMENT**

This Cooperation Agreement (this "Agreement") is made on \_\_\_\_\_

BETWEEN:

**Department of Environment and Natural Resources - Environmental Management Bureau** (herein after referred to as "DENR-EMB"), a line agency under the DENR, having its Office at the DENR Compound, Visayas Avenue, Diliman, Quezon City, Philippines 1115 and represented by the Director, **ENGR. WILLIAM P. CUÑADO**;

**Department of Environment and Natural Resources - Environmental Management Bureau Region 1** (herein after referred to as "DENR-EMB RI") with office at DENR Bldg., Government Center, Brgy. Sevilla, City of San Fernando, La Union and represented by the Regional Director, **ENGR. MARIA DORICA NAZ-HIPE**;

AND:

**The United Nations Industrial Development Organization** (herein after referred to as "UNIDO"), a specialized agency of the United Nations with primary responsibility for reviewing and promoting the coordination of all activities in the United Nations system in the field of inclusive and sustainable industrial development (ISID) in developing countries and supporting countries to industrialize in ways that foster digital and green transitions and accelerate progress with Sustainable Development Goals, the with principal office at the UNIDO Headquarters, Vienna International Centre, Vienna, Austria and represented by the Project Manager, **DR. CARMELA R. CENTENO**;

AND:

**Ecological Waste Coalition of the Philippines** (herein referred to as EcoWaste Coalition) an independent and non-profit environmental network promoting chemical safety having its office at 78 A Maxigla Extension, Quezon City and represented by its President, **MS. EILEEN BELEMIDE-SISON**;

AND:

**The Provincial Government of La Union** (herein after referred to as "PGLU") having its Office at Capitol Building, Aguila Rd., Bannang II, City of San Fernando, La Union and represented by the Provincial Governor, **HON. RAPHAELLE VERONICA ORTEGA-DAVID**;

**OBJECTIVE OF THE COOPERATION AGREEMENT**

The DENR-EMB, DENR-EMB RI, UNIDO, EcoWaste Coalition and PGLU agree to implement relevant activities of the project, which include the **E-WASTE COLLECTION EVENT**, which aims to support the E-Waste Component of the project entitled "Implementation of PCB Management Programs for Electric Cooperatives and Safe e-Wastes Management" (PCB WEEE Project).

**BACKGROUND OF THE PROJECT**

1. The Project was approved by GEF in December 2017 for implementation of five (5) years and was extended until January 31, 2023.
2. The Project is being implemented by UNIDO in collaboration with national executing partners - Department of Environment and Natural Resources- Environmental Management Bureau (DENR-EMB), as the lead executing agency.

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ENGR. V. S. P. CUNHA  
Director

**ADOLF NAZ-RIPE**  
Incorporated Enterprise

*[Signature]*  
DRE. CARMELA R. CENTENO  
Project Manager

**PAUL BELFEMIDE-SISON**  
*President*

- The Project has four (4) components: Component 1: Management of POPs in Waste Electrical and Electronics Equipment (WEEE); Component 2: Sound Management of PCB-contaminated equipment, PCB Wastes and Stockpiles from Electric Cooperatives; Component 3: Institutional Strengthening, Capacity Building and Awareness Raising; and Component 4: Project Monitoring and Evaluation.

Output 1.2.2 Best Available Techniques (BAT) / Best Environmental Practices (BEP) demonstrated for the sustainable waste management of WEEE at selected waste recycling facilities. Under the Project, several measures will be implemented in selected waste recycling facilities, which include the improvement of the recycling process, improvement of workplace environment and the implementation of BEP, and that the facilities will be provided with X-ray fluorescence (XRF) equipment. With the efficacy of recycling technologies successfully demonstrated, other LGUs will be encouraged to set up similar facilities in the country.

- \* Output 1.2.3. Safe Disposal of material containing PBDE and other hazardous chemicals. The Project is expected to identify and segregate at least 50,000 CRT computer monitors or TVs and disposed of PBDEs containing plastic containing 1.15 tons of PBDE.

Outcome 3.1 Increased capacity for and awareness on sustainable and effective WEEE and PCB waste management by relevant stakeholders

- Output 3.1.1 Training programs on PCB and WEEE management for relevant stakeholders designed and implemented
- Output 3.1.2 Awareness Programs on WEEE and PCB Wastes Management conducted and knowledge management infrastructure established

5. EcoWaste Coalition is engaged by UNIDO to assist the Project in the networking and awareness raising activities such as e-waste collection events with the communities of the informal e-waste recyclers.
6. Although municipalities have Materials Recovery Facility (MRF) where recyclable municipal solid wastes are collected, under the current municipal solid waste policies, only authorized e-wastes facilities can collect e-waste. E-wastes such as "whole CRTs or TVs" are not collected by the municipal solid waste collectors, thus, most residuals such as the CRT glasses end up uncollected.
7. Electronic and Electrical Equipment contain the substance Polybrominated diphenyl ether (PBDE), which are chemicals used as heat retardants to prevent the electronic gadgets from heating and exploding. These chemicals are still present in the products, even after its use. PBDEs are amongst the persistent organic pollutants (POPs) that are listed in the Stockholm Convention on POPs.
8. The project has upgraded at least two (2) MRF to a TSD facility for e-wastes, operations of which are under the supervision of Integrated Recycling Industries, Inc. (IRI).

*Cooperation Agreement-Implementation of PCB Management Programs for Electric Cooperatives and Safe E-wastes Management* - GEF ID Number 9073

**F**  
RAPHAELLE VERONICA O.  
President of Governor

ENGR. RYAN J. NARVEZ  
CHESMAN, MAILED

Enf. A. J. SANCHEZ-VILLALBA  
DIRECCIÓN GENERAL



ENGR. WILBERT P. CUÑADO  
Director

9. The project has disposed of at least 50,000 units of CRTs (from households) and 600 tons of Pb contaminated glass through the TSD Bugong Silang, Calocan City and TSD facility in Dampala, Malabon
10. In a meeting organized by EMB on 03 August 2022 with selected EMB Regional Offices, the Regional Offices were requested to organize E-waste Collection Events in their respective regions, as part of the Awareness Raising Component of the project.

#### TERMS OF COOPERATION

1. The DENR-EMB Central Office will act as the executing agency which will oversee the implementation of the project.
2. The UNIDO shall ensure that the provisions of contract with EcoWaste Coalition and IRI, pertinent to awareness raising activities, e-wastes collection and support to the operations of the e-wastes facilities established by the Project are implemented.
3. The DENR-EMB R1 will act as the executing agency to oversee the conduct of the event:
  - a. Conduct orientation and provide technical expertise and e-copies of Information, Education, and Communication (IEC) materials regarding Safe E-waste Management and during the E-Waste Collection Event;
  - b. Coordinate with and assist PGLU for the identification of Central Collection Site;
  - c. Coordinate with Project Team in relation to the transport of e-wastes from the Central Collection Site and treatment at the TSD Facility;
  - d. Prepare documentary templates for consumption of event partners for smooth and efficient conduct of event activities; and
  - e. Facilitate signing of the Cooperation Agreement;
  - f. Ensure the participation of key personnel to support the activities arising from this Agreement.
4. EcoWaste Coalition shall provide support to the E waste Collection Event organized by EMB Region 1 through the provision of Awareness Raising Activities and coordination with partners of the project involved in the transport of e wastes from the sites identified by EMB CAR to IRI.
5. The PGLU and component LGUs shall:
  - a. Designate a secured Central Collection Site for PGLU and Temporary Storage Area for LGUs;
  - b. Support and coordinate with LGUs regarding the e-waste collection events, awareness raising and capacity building activities organized for the event;
  - c. Secure necessary clearance from EMBs on the collection of e-wastes from the households during the e waste collection events;
  - d. Provide reports on estimated volume to be collected prior to collection event and actual volume to be collected prior to hauling by partner-HW Transporter;
  - e. Consider the development of Provincial and/or Municipal Resolutions to ensure sustainability of Safe E-waste Management; and
  - f. Provide resources necessary to implement the aforementioned activities.

#### DURATION OF IMPLEMENTATION

The Cooperation Agreement will come into effect on the date that it has been signed by all parties hereto and will continue to have effect until the conclusion of the agreed interventions and limited only during the lifetime of the Project.

#### DISPUTE SETTLEMENT

Any dispute arising from this Agreement or interpretation hereof shall first be settled by amicable negotiations, or conciliation and/or mediation proceedings.

In case it shall become necessary for any Party to resort to court for the enforcement of its rights under this Agreement by reason attributable to the other Party, the Party at fault shall be liable to pay the costs of suit.

Cooperation Agreement-Implementation of PCB Management Programs for Electric Cooperatives  
and Safe E-wastes Management" - GEF ID Number 9078

HON. RAFAELLE VERONICA ORTEGA-DAVID  
Provincial Governor

ENGR. MARIO DOLORES Z-HIE  
Assistant Director

DR. CARMELIA W. CENTENO  
Project Manager

FILEN RELEMBE-SISON  
President

ENGR. REXXON N. NARVAEZ  
Operations Manager


REP. ANTONIO M. PALADIZ  
PC-ENR-PC-0410

attorney's fees, and other incidental expenses, the venue of which shall be the proper Regional Trial Court of San Fernando City, La Union."

#### LEGAL ISSUES

The Cooperation Agreement is signed with the mutual understanding of the parties hereto that it is not a formal agreement giving rise to any legal relationship, partnership or joint venture, or to rights, duties, or expectations as well as financial commitments or consequences of any nature outside the available resources of the project and its lifetime. Notwithstanding the foregoing sentence, the Parties hereto consider the Cooperation Agreement to be a definite expression and record of their understanding on the subject and are committed to carry out its provisions in good faith.

BY:


  
ENGR. WILFREDO P. CUÑADO  
*Director*  
DEPARTMENT OF ENVIRONMENT AND  
NATURAL RESOURCES – ENVIRONMENTAL  
MANAGEMENT BUREAU

BY:

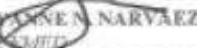
  
HON. RAPHAELLE VERONICA ORTEGA-DAVID  
*Provincial Governor*  
PROVINCIAL GOVERNMENT OF LA UNION

  
ENGR. MARIA DORITA NAZ-HIDE  
*Regional Director*  
DEPARTMENT OF ENVIRONMENT AND  
NATURAL RESOURCES – ENVIRONMENTAL  
MANAGEMENT BUREAU REGION I

  
MS. EILEEN BELEMIDE-SISON  
*President*  
ECOLOGICAL WASTE COALITION OF THE  
PHILIPPINES

  
DR. CARMELA R. CENTENO  
*Project Manager*  
UNITED NATIONS INDUSTRIAL  
DEVELOPMENT ORGANIZATION






WITNESSED BY:

  
ENGR. RYNNEN NARVAEZ  
*Chief EMO, EMED*  
DEPARTMENT OF ENVIRONMENT AND  
NATURAL RESOURCES – ENVIRONMENTAL  
MANAGEMENT BUREAU REGION I

  
MS. ANNALYN ROSANO-VALDEZ  
*Office-ENRO/Provincial Government Assistant*  
*Department Head*  
PROVINCIAL GOVERNMENT OF LA UNION

## ANNEX I

### Memorandum of Agreement between PGLU and DENR-EMB for the Assessment, Supply, Delivery and Installation of Brand-New Preliminary Disinfection and Storage Facilities for Collected COVID-19 Related Waste

 <b>HON. RAPHAELLE VERONICA ORTEGA-DAVID</b> Governor	<b>MEMORANDUM OF AGREEMENT</b>	 <b>ENGR. MARIA DORICA NAZ-HIPE</b> Regional Director
<b>KNOW ALL MEN BY THESE PRESENTS:</b>		
This Memorandum of Agreement entered into at _____ Philippines, this ____ day of <u>20 FEB 2023</u> 2023 by and between:		
<b>The DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES – ENVIRONMENTAL MANAGEMENT BUREAU REGION 1</b> , a National Government Agency created and existing under the laws of the Republic of the Philippines, with principal office address at DENR Building Government Center, Brgy. Sevilla, City of San Fernando, La Union, herein represented in this Agreement by its Regional Director, <b>ENGR. MARIA DORICA NAZ-HIPE</b> , hereinafter referred to as the "DENR-EMB".		
and		
 <b>DR. EDUARDO S. FOSADAS</b> Provincial Health Officer	The <b>PROVINCE</b> of La Union, represented in this Agreement by its duly elected Governor, <b>HON. RAPHAELLE VERONICA ORTEGA-DAVID</b> , duly authorized under Sangguniang Panlalawigan Resolution No. <u>1648</u> series of 2022 hereinafter referred to as the "PROVINCE".	
<b>WITNESSETH</b>		
 <b>ENGR. MAUREEN MALAZO</b> C. PG-EMB/PG-CH	<b>WHEREAS</b> , as the impact of the global pandemic, COVID-19 continues, the waste generation from quarantine, testing, and vaccination facilities is significantly increasing which is detrimental to our health and the environment;	
<b>WHEREAS</b> , Hazardous Waste Management is inadequate due to limited capacities and the cost required for facilities to address the increasing volume of untreated hazardous wastes, particularly, healthcare wastes;		
<b>WHEREAS</b> , the Department of Environment and Natural Resources (DENR), through the Environmental Management Bureau (EMB) proposed a project and was approved during CY 2022 budget hearing that will improve the collection of COVID-19 related healthcare waste from quarantine facilities, testing facilities, and vaccination sites located in remote areas including small generators that are not serviced by a hazardous waste transporter and a Treatment, Storage and Disposal (TSD) facility;		
 <b>DR. ZENSERLY D. LAGADUAN</b> Chief of Hospital, Bacnotan District Hospital	<b>WHEREAS</b> , this project will provide safe, secure containment and storage area for infectious wastes that will address the challenges of the improper collection, preliminary disinfection, and storage of Personal Protective Equipment (PPE), syringes, vials, and other COVID-19 related healthcare wastes;	
<b>WHEREAS</b> , the Province of La Union, has shown interest to participate in the project		
Memorandum of Agreement between PGLU and DENR-EMB for the Assessment, Supply, Delivery and Installation of Brand-New Preliminary Disinfection and Storage Facilities for Collected COVID-19 Related Waste   Page 1 of 6		



  
HON. RAPHAELLE VERONICA ORTEGA-DAVID  
Governor

and hereby agrees to fulfill the requirements under the Terms and Conditions hereunder stipulated;

**WHEREAS**, the Province of La Union, has agreed to be a recipient/beneficiary of one (1) unit 20-footer container with a 4.5-ton capacity and 63 units of 100L capacity yellow bins with roller that will provide preliminary disinfection and storage of healthcare waste;

**WHEREAS**, the qualified Provinces shall be part of this Project and that the local target groups shall actively participate and shall cooperate;

**NOW, THEREFORE**, for and in consideration of the foregoing premises and the mutual covenants hereinafter set forth, Parties to this Agreement hereby agree to comply as follows:

## ARTICLE I

### SCOPE AND PURPOSES

**Section 1. Scope.** The parties hereto agree that this Memorandum of Agreement (MOA) shall cover all matters in relation with the assessment, supply, delivery, and installation of brand-new preliminary disinfection and storage facilities for collected COVID-19 related waste in order to support Province.

**Section 2. Purposes.** This Agreement is hereby entered into by the parties for the following purposes, to wit:

- a. To engage the services of a company that can assess, supply, deliver, and install a Preliminary Disinfection and Storage Facility (PDSF) which will improve the collection of COVID-19 related healthcare waste from quarantine facilities, testing facilities, and vaccination sites located in remote areas including small generators that are not serviced by a hazardous waste transporter and a Treatment, Storage and Disposal (TSD) facility
- b. To provide safe, secure containment and storage area for infectious wastes.

## ARTICLE II

### ROLES AND RESPONSIBILITIES

#### Section 3. Roles and Responsibilities of DENR-EMB

The DENR-EMB shall:

- a) Procure the one (1) unit 20-footer container and 63 units 100L-yellow bins with roller;
- b) Provide technical assistance and guidance on the siting and installation of the preliminary disinfection and storage facility to the qualified Province for the management of COVID-19 related healthcare wastes;

Memorandum of Agreement between PGLU and DENR-EMB for the Assessment, Supply, Delivery and Installation of Brand-New Preliminary Disinfection and Storage Facilities for Collected COVID-19 Related Waste | Page 2 of 6

  
DR. EDUARDO P. POSADAS  
Provincial Health Officer

  
ENR. ARNEL N. ROSARIO-VALDEZ  
Ch. PG-EMB/REG-01

  
DR. ZENSERY D. RAGADUAN  
Chief of Hospital, Bacnotan District Hospital

ENGR. MARIANO B. MATHE  
Regional Director

ENGR. RYAN B. NARVAEZ  
Ch. EMB, RO

ENGR. MAURICIO S. MALAZO  
Program Section Chief



HON. RAPHAELLE VERONICA ORTEGA-DAVID  
Governor

DR. EDUARDO POSADAS  
Provincial Health Officer

ENP. KATHLYN ROSARIO VALDEZ  
P.C. PG-ENRO/PG-ASH

DR. ZENSERLY D. RAGADUAN  
Chief of Hospital, Bacnotian District Hospital

- c) Provide technical assistance to the Province beneficiary in securing required environmental permits;
- d) Validate Self-Monitoring Report (SMR) submitted by the Province;
- e) Establish a monitoring and evaluation scheme associated with the implementation of the project;
- f) Monitor the implementation of the project, particularly during the preparatory activities, delivery, and installation; and
- g) Provide a substitute Province beneficiary in case the qualified Province refuses to accept the project in its jurisdiction.

#### ARTICLE III

#### Section 4. Roles and Responsibilities of the Province of La Union

##### The Province shall:

- a) Identify a site suitable for the permanent installation of the facility with a minimum area of 50 square meters. The Province shall submit the geotagged panoramic view of the site to EMB Regional Office having the jurisdiction of the site.
- b) Assign at least three (3) personnel to manage the operation of the facility and compensate their services.
- c) Ensure that the facility is continuously operated on a daily basis and recording it in a logbook. Summary of which and panoramic view photos of the actual operation shall be included in the quarterly Self-Monitoring Report (SMR) submission. Records of daily operations should be readily available in cases of monitoring/inspection by Environmental Monitoring and Enforcement Division of Toxic Chemicals and Hazardous Waste Management Section of EMB (EMB- CHWMS);
- d) Submission of quarterly Self-Monitoring Report (SMR) to be validated by EMB- CHWMS;
- e) Allocate appropriate funds to ensure the continuous operation of the facility, including preventive maintenance, repair of equipment, salaries of personnel and other operating expenses; and
- f) Provide a contract of services of an accredited third-party waste service provider for the collection and transport of collected waste through a memorandum of agreement or a contract prior to the turn-over of the equipment.
- g) Furnish a copy of the Journal Entry Voucher (JEV) duly signed by the Provincial Accountant on the recorded equipment.

Memorandum of Agreement between PGLU and DENR-EMB for the Assessment, Supply, Delivery and Installation of Brand-New Preliminary Disinfection and Storage Facilities for Collected COVID-19 Related Waste | Page 3 of 6

ENGR. MARILYN ROSARIO MAZ-PIPE  
Regional Director

ENGR. RYANNE N. NARVAEZ  
CHWMS, RO

ENGR. MAURELIO MALATO  
Program/Section Chief

HON. RAPHAELLE VERONICA ORTEGA-DAVID  
Governor

DR. EDUARDO S. POSADAS  
Provincial Health Officer

ENP. ANTONIO ROSARIO VALDEZ  
C. C. PG-ENR/PHD

DR. ZENSERLY D. PAGADUAN  
Chief of Hospital, Bacnotan District Hospital

- h) Provide pertinent documents for the application of applicable environmental permits and clearances for the operation of the preliminary disinfection and storage facility with permit fees provided for by the facility supplier.

#### ARTICLE IV

#### GENERAL PROVISIONS

**Section 5. Special Provisions.** In case of failure to utilize the facility within three (3) consecutive months upon receipt of the said facility and/or failure to submit the required reportorial requirements without justifiable reasons, the EMB Regional Office reserves the right to repossess it.

**Section 6. Schedule of Mobilization and Turnover.** The DENR-EMB shall require Province of La Union submission of the following documents prior to mobilization for the project:

1. Signed Memorandum of Agreement by the EMB and the Province;
2. Valid resolution from the Sangguniang Panlalawigan authorizing the Local Chief Executive to enter into MOA; and
3. Proof of Authority over the Area

The DENR-EMB shall turnover the facility to the Province of La Union upon submission of the following documents:

1. Validly issued resolution from the Sangguniang Panlalawigan authorizing the Local Chief Executive to accept the Deed of Donation;
2. Duly signed/approved Deed of Donation; and
3. Accomplished Work and Financial Plan for the operating expenses signed by the Province's Finance/Accounting Officer; and
4. Signed Memorandum of Agreement or Contract with an accredited third-party waste service provider for the collection and transport of collected waste

**Section 7. Warranties.** Each party to this Agreement represents and warrants that it has secured the requisite full and complete authority to enter into, perform legal acts in connection herewith and to be bound by the terms and conditions of this agreement.

**Section 8. Entire Agreement.** Parties hereto agree that they both read this Agreement in its entirety, understand the provisions contained and hereby agree to be bound by the provisions thereof.

**Section 9. Supplemental Agreement.** The parties herein may enter into a supplemental agreement as may be necessary in the course of, and in furtherance of the purposes stipulated in this Agreement.

**Section 10. Amendments.** Any amendment, addendum, modification, or supplement to this Agreement must be in writing and duly executed with the consent of both parties.

**Section 11. Effectivity.** This Agreement shall take effect immediately upon Memorandum of Agreement between PGLU and DENR-EMB for the Assessment, Supply, Delivery and Installation of Brand-New Preliminary Disinfection and Storage Facilities for Collected COVID-19 Related Waste | Page 4 of 6

ENGR. MARIA DOMINICA NAZARENO  
Regional Director

ENGR. RYANANTH NARVAEZ  
Chief/EMB RO

ENGR. MAURICIO MALAZO  
Program/Section Chief

signing by the parties and shall continue to be in full force and effect until terminated.

IN WITNESS WHEREOF, the Parties have executed this Memorandum of Agreement and affixed their signatures on the date and place provided below

**PROVINCE OF LA UNION**

**ENVIRONMENTAL MANAGEMENT  
BUREAU – REGION 1**

By:

By:

  
\_\_\_\_\_  
**HON. RAPHAELLE VERONICA  
ORTEGA-DAVID**  
Governor

  
\_\_\_\_\_  
**ENGR. MARIA LETICIA NAZ-HIPE**  
Regional Director

**SIGNED IN THE PRESENCE OF**

  
\_\_\_\_\_  
**DR. EDUARDO S. POSADAS**  
Provincial Health Officer

  
\_\_\_\_\_  
**ENGR. RYANNE N. NARVAEZ**  
Chief EMED, RO

  
\_\_\_\_\_  
**ANNALYN ROSARIO-VALDEZ**  
OIC, PG-ENRO/PGADH

  
\_\_\_\_\_  
**ENGR. MAUREEN S. MALAZO**  
Program/Section Chief

  
\_\_\_\_\_  
**DR. ZENSERLY D. PAGADUAN**  
Chief of Hospital  
Bacnotan District Hospital



## ANNEX J

### DENR Memorandum on the Endorsement of the Ten-Year Solid Waste Management Plan Evaluation in Region 1



**REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF ENVIRONMENT AND NATURAL RESOURCES  
ENVIRONMENTAL MANAGEMENT BUREAU**

Regional Office No. 1  
DENR Bldg., Government Center, Sevilla,  
City of San Fernando, La Union



#### MEMORANDUM

**FOR :** THE DIRECTOR AND CONCURRENT ASSISTANT  
SECRETARY FOR FIELD OPERATION FOR LUZON  
AND VISAYAS  
Environmental Management Bureau  
DENR Compound, Visayas Avenue, Diliman Quezon City

**FROM :** THE REGIONAL DIRECTOR

**SUBJECT :** ENDORSEMENT OF THE TEN-YEAR SOLID WASTE  
MANAGEMENT PLAN EVALUATION IN REGION 1

**DATE :** February 23, 2024

Transmitted is the updated 10-Year (CY 2024-2033) Solid Waste Management Plan and evaluation form of the Provincial Government of La Union in Region I, for approval of the National Solid Waste Management Commission (NSWMC).

Please be informed that the plan of the said Province has been initially reviewed by this office and found to be in conformity with the annotated outline prescribed by the National Solid Waste Management Commission (NSWMC).

For final evaluation and approval.

ENGR. MARIA DORICA NAZ-HIPE, CESO V

Encl: a/s  
cc: The Regional Director, DILG R1



*Protect the environment... Protect Life...*

Tel. Nos. (072)-687-8370; e-mail: [r1@emb.gov.ph](mailto:r1@emb.gov.ph)