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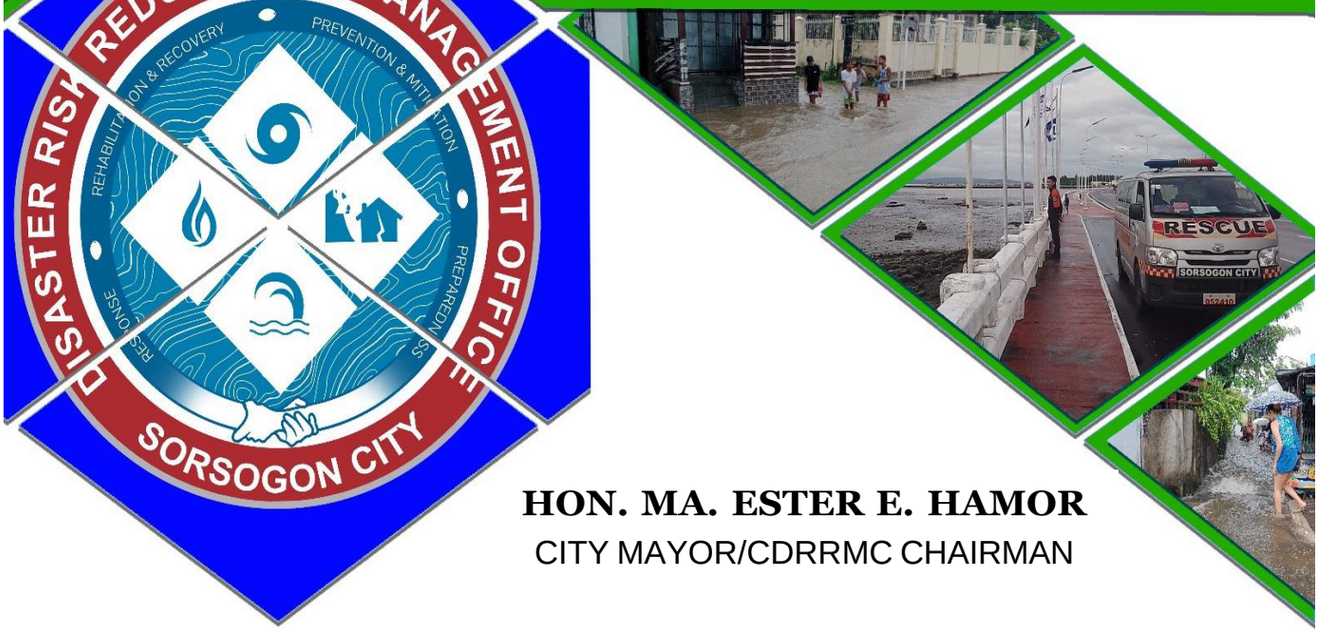
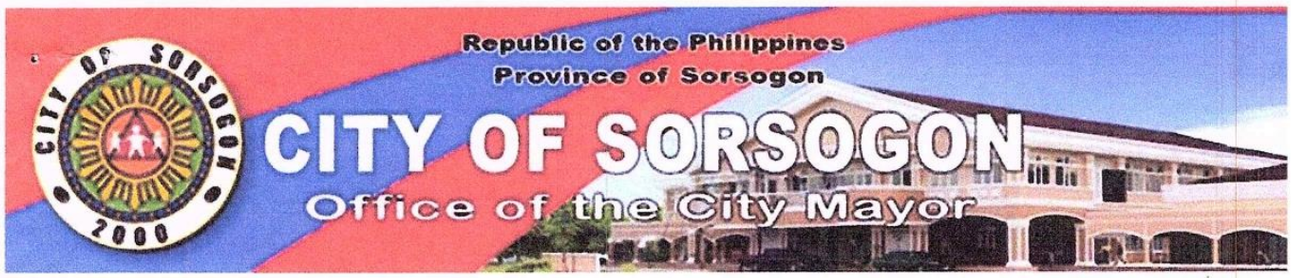
ENHANCED LOCAL CLIMATE CHANGE ACTION PLAN (eLCCAP) 2025-2027



HON. MA. ESTER E. HAMOR
CITY MAYOR/CDRRMC CHAIRMAN



EXECUTIVE ORDER NO. 65, Series of 2024

AN EXECUTIVE ORDER CREATING THE ENHANCED LOCAL CLIMATE CHANGE ACTION PLAN (eLCCAP) CORE TEAM OF SORSOGON CITY

WHEREAS, the Philippines is highly vulnerable to the adverse impacts of climate change, including extreme weather events, sea-level rise, and increasing temperatures;

WHEREAS, the Philippine government recognizes the need to enhance the capacity of local government units (LGUs) to respond to the challenges posed by climate change through the development and implementation of Enhanced Local Climate Change Action Plans (eLCCAPs), as mandated by the Republic Act No. 9729, otherwise known as the "Climate Change Act of 2009";

WHEREAS, Sorsogon City, being a coastal and disaster-prone area, is particularly at risk from climate-related hazards, making it imperative to formulate and implement a comprehensive eLCCAP that ensures the city's sustainable development and resilience;

WHEREAS, the effective preparation, formulation, and implementation of the eLCCAP require the establishment of a dedicated team composed of qualified personnel with knowledge, expertise, and experience in climate change adaptation and disaster risk reduction;

NOW, THEREFORE, I, MA. ESTER E. HAMOR, City Mayor of Sorsogon City, by virtue of the powers vested in me by law, do hereby order the following:

SECTION 1. CREATION OF THE eLCCAP CORE TEAM

There is hereby created the Enhanced Local Climate Change Action Plan (eLCCAP) Core Team of Sorsogon City, hereinafter referred to as the "eLCCAP Core Team," which shall be responsible for the formulation, implementation, monitoring, and evaluation of the City's eLCCAP implementation.

SECTION 2. COMPOSITION OF THE eLCCAP CORE TEAM

The Core Team shall be composed of the following members:

Chairperson:
City Planning and Development Office (CPDO)

Co-Chairpersons:
City Environment and Natural Resources Officer (CENRO)
City Disaster Risk Reduction and Management Officer (CDRRMO)

Members:
Representative from the City Agriculture Office
Representative from the City Social Welfare and Development Office
Representative from the City Health Office
Representative from the City Engineering Office
Representative from the City Budget Office
Representative from the Sangguniang Panlungsod Committee on Environment
Representatives from accredited civil society organizations (CSOs) and people's organizations (POs)
Other members as may be deemed necessary by the Chairperson

SECTION 3. FUNCTIONS AND RESPONSIBILITIES

The Core Team shall have the following functions and responsibilities:

Formulation of the eLCCAP:
Lead the preparation, formulation, and updating of the eLCCAP based on scientific data, community needs, and national climate change frameworks and guidelines.

Coordination and Consultation:
Conduct consultations with relevant stakeholders, including government agencies, non-governmental organizations (NGOs), private sector partners, and local communities, to ensure a participatory and inclusive eLCCAP.

Implementation and Monitoring:
Oversee the implementation of the eLCCAP in close coordination with relevant city departments, agencies, and partners. Ensure that progress is regularly monitored and that adjustments are made as necessary.

Capacity Building:
Facilitate capacity-building activities to enhance the skills and knowledge of city government employees and local stakeholders in climate change adaptation, mitigation, and disaster risk reduction.

Resource Mobilization:
Identify potential sources of funding and technical assistance to support the eLCCAP and engage with national and international agencies for resource mobilization.

Reporting:
Submit regular reports on the progress of the eLCCAP to the City Mayor, Sangguniang Panlungsod, and other relevant agencies.

SECTION 4. SUPPORT AND RESOURCES

All city government offices, departments, and agencies are hereby directed to support the eLCCAP Core Team in the performance of its duties. Adequate resources, both financial and technical, shall be allocated to ensure the successful formulation and implementation of the eLCCAP.

SECTION 5. SEPARABILITY CLAUSE

If any provision of this Executive Order is declared invalid or unconstitutional, the remaining provisions shall continue to be in full force and effect.

SECTION 6. EFFECTIVITY

This Executive Order shall take effect immediately upon its approval.

DONE in the City of Sorsogon, Philippines, this _____ day of 26 DEC 2024.

MA. ESTER E. HAMOR
City Mayor

FOREWORD

Climate change refers to alterations in the Earth's climate that result from both natural processes and human activities. These changes, whether directly or indirectly caused by human actions, modify the composition of the global atmosphere and extend beyond natural climate variability observed over comparable time periods.

In line with Republic Act No. 9729, also known as the Climate Change Act of 2009, the City Government of Sorsogon, along with other Local Government Units (LGUs), is mandated to develop, plan, and implement a Climate Change Action Plan (CCAP). This directive aligns with the provisions of the Local Government Code, the National Climate Change Action Plan (NCCAP), and the overarching policy framework on climate resilience.

Recognizing the ongoing shifts in climate patterns, the City Government of Sorsogon acknowledges the necessity of adapting to these changes—both those currently occurring and those anticipated in the coming decades. While some climate impacts will manifest gradually, others will occur as significant events, necessitating preparedness and adaptive strategies.

Adaptation involves proactive measures to prevent, manage, or mitigate the consequences of climate-related events. Integrating climate adaptation into daily governance, planning, and risk management is essential, ensuring that both local authorities and communities are equipped to respond effectively.

The eLCCAP serves as a strategic framework for addressing key environmental challenges and threats. By implementing targeted actions to adapt to climate change, the City aims to enhance community resilience, protect natural ecosystems, and foster sustainable economic growth at the local, regional, and national levels.

Acknowledging that this Action Plan represents only an initial step in a continuous adaptation process, the City Government commits to regularly reviewing and updating the eLCCAP in response to new climate-related developments and emerging knowledge.

The adoption and implementation of the eLCCAP will position the City as a leader in climate change adaptation and mitigation, reinforcing its commitment to a sustainable and resilient future.

ACKNOWLEDGEMENT

The City of Sorsogon sincerely expresses its gratitude to all personnel, offices, agencies, and, most especially, the eLCCAP Core Team and Stakeholders for their invaluable contributions to the development of the Enhanced Local Climate Change Action Plan (eLCCAP). This achievement was made possible through a series of workshops, discussions, consultations, and related activities.

The actions outlined in the eLCCAP were shaped by the insights and contributions of participants during these engagements. Additionally, numerous individuals took part in extensive consultations, including those at the county level, demonstrating the unwavering commitment of the people of Sorsogon City. Their involvement ensures that the Action Plan effectively addresses the city's most urgent climate change concerns.

This significant milestone in Sorsogon City's climate change response would not have been possible without the generous support of government officials, led by Honorable Mayor Ma. Ester E. Hamor. Their leadership and provision of essential resources, including financial support, played a vital role in realizing this initiative.

The City Government of Sorsogon remains dedicated to the implementation of the Enhanced Local Climate Change Action Plan (eLCCAP) and encourages all partners and stakeholders to collaborate in executing the prioritized actions for the betterment of the city.

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IV- ACRONYMS AND ABBREVIATIONS

ACDV	- Accredited Community Disaster Volunteer
AFP	- Armed Forces of the Philippines
BDRRMC	- Barangay Disaster Risk Reduction and Management Council
BFP	- Bureau of Fire Protection
CCA	- Climate Change Adaptation
CP	- Contingency Plan
CBO	- City Budget Office
CDRRMO	- City Disaster Risk Reduction and Management Office
CEO	- City Engineer's Office
CENRO	- City Environment and Natural Resources Office
CPDO	- City Planning and Development Office
CTO	- City Treasurer's Office
CGSO	- City General Services office
CSWDO	- City Social Welfare and Development Office
DENR	- Department of Environment and Natural Resources
DRR	- Disaster Risk Reduction
HFA	- Hyogo Framework of Action
LDRRMC	- Local Disaster Risk Reduction and Management Council
LDRRMF	- Local Disaster Risk Reduction and Management Fund
LGU	- Local Government Unit
MGB	- Mines and Geosciences Bureau
NGO	- Non-Government Organization
PA	- Philippine Army
PCG	- Philippine Coast Guard
PO	- People's Organization
RA	- Republic Act

V- DEFINITION OF TERMS

Adaptation	the adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
Adaptation	refers to the adjustment in natural or human system in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities; refers to the ability of ecological, social or economic systems to adjust to climate change, variability and extremes, as well as moderate or offset potential damages, and take advantage of associated opportunities (IPCC 2007). It also implies the ability to anticipate hazard or perturbation (UNDP 2010). It determines whether the system absorbs changes without damage or whether these changes will lead to negative consequences.
Adaptive Capacity	is the ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with the consequences.
Adaptive Capacity	the ability of a system to adjust to climate change (including climate variability and extremes) to moderate potential damages, to take advantage of opportunities, or to cope with consequences; a function of wealth, technology, institutions, information, infrastructures, "social capital";
Anthropogenic causes	refers to causes resulting from human activities or produced by human beings
Anthropogenic	the component of climate change that is caused by humans.
Climate Change	Scientist are certain that Global Warming has started and that the warming of the planet will be faster than at any time in the last several hundred thousand years which will cause major disturbances in ocean currents, weather and ecosystems.
Autonomous Adaptation	refers to reactive, incremental or spontaneous adaptation, geared towards meeting present climate conditions or challenges
Brainstorming	free flowing lists/diagrams of all ideas and options

Capacity	a combination of all strengths and resources available within a community, society or organization that can reduce the level of risk, or effects of a disaster. Capacity may include infrastructure and physical means, institutions, societal coping abilities, as well as human knowledge, skills and collective attributes such as social relationships, leadership and management. Capacity may also be described as capability.
Civil Society Organizations	non-state actors whose aims are neither to generate profits nor to seek governing power. CSOs unite people to advance shared goals and interests. They have a presence in public life, expressing the interests and values of their members or others, and are based on ethical, cultural, scientific, religious or philanthropic considerations. CSOs include nongovernment organizations (NGOs), professional associations, foundations, independent research institutes, community-based organizations (CBOs), faith-based organizations, people's organizations, social movements and labor unions.
Climate	refers to average weather over long periods of time, typically at a 30year average
Climate Change	refers to a statistically significant variation in the average condition of climate or in its variability that persists for decades, or longer, caused by both natural processes and human impacts, such as greenhouse gas emissions (World Bank 2010)
Climate Change	a change in climate that can be identified by changes in the mean and/or variability of its properties and that persists for an extended period typically decades or longer, whether due to natural variability or as a result of human activity,
Climate Change Adaptation	refers to policies, actions, and other initiatives designed to limit the potential adverse impacts arising from climate variability and change (including extreme events), and exploit any positive consequences" (ADB 2005). Adaptation is geared towards reducing climate change adverse impacts and risks in order to reduce vulnerability
Climate Change Impact	refers to a change in natural and human systems, whether harmful or beneficial resulting from climate change (IPCC 2007). Climate change can impact on the agricultural system by introducing new stressors into the system, and/or exacerbating existing stressors. To illustrate, it has been projected that up to 30% of plant and animal species could go extinct if the global temperature increase exceeds 1.5-2.5°C, and crop yields in tropical zones could significantly decrease with even a modest temperature increase of 1-2°C (IUCN).

Climate Change is…	attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is in addition to natural climate variability observed over comparable time periods.
Climate Extremes	refers to climate and weather events that occur rarely at a particular place and time of the year, with peaks and lows outside the range of expected distribution, such as extremely hot temperature or unseasonal rainfall.
Climate Hazards	refers to potentially damaging physical manifestations of climatic variability or change, such as droughts, floods, storms, episodes of heavy rainfall, long- term changes in the mean values of climatic variables, and potential future shifts in climatic regimes, among others (Brooks 2003).
Climate Mainstreaming	refers to integrating climate concerns and adaptation responses into relevant policies, plans, programs and projects at the national, sub-national and local scales. The long-term goal is to integrate CCA into public policy across sectors, weave it into organizational missions and routinely consider it in decisions about development. As climate change and its impacts are cross- cutting issues, adaptation measures are seldom undertaken solely in response to climate change, but superimposed into other ongoing initiatives and governance frameworks within the scope of development goals, such as CC adaptation in agriculture interwoven with initiatives of other sectors, namely: poverty alleviation, water supplies, public health, disaster risk reduction and management and biodiversity conservation (USAID 2009, IPCC 2007).
Climate Proofing	this involves: a) identifying risks to a development project, natural or human asset, as a consequence of current and future climate variability and change; b) ensuring that identified risks are reduced to acceptable levels through long-lasting and environmentally sound, economically viable, and socially acceptable changes; c) implementing changes at one or more of the following stages in the project cycle: planning, design, construction, operation, and decommissioning (ADB 2005).
Climate Resilience	refers to the ability of a system, community or society exposed to hazards to resist, absorb, accommodate, and recover from the effects of a hazard in a timely and efficient manner, including the preservation and restoration of its essential basic structures and functions (UNISDR 2009). Improved adaptation can help develop resiliency.
Climate Risk	refers to the product of climate and related hazards working over the vulnerability of human and natural ecosystems.

Climate Variability	refers to variations in climatic conditions (average, extreme events, among others) on time and space scales beyond individual weather events, but not persisting for extended periods (shorter term than climate change) (ADB 2005)
Demographic	population, concentration, mobility, density, growth
Disaster	occurs when adverse impacts produce widespread damage and cause severe alterations in the normal functioning of communities or societies (IPCC 2011)
Disaster	a serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope causing its own resources. Disasters are often described as a result of the combination of: the exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences, Disaster impacts may include loss of life, injury, disease and other negative effects on human, physical, mental and social well-being, together with damage to property, destruction of assets, loss of services, social and economic disruption and environmental degradation.
Disaster Mitigation	refers to a policy development, policy on geo-strategic interventions, short- term policy on setting of curfew, prohibition of human activities in the danger zones, disposition of relief and donations, integration of disaster risk reduction to CLUP, community training and public awareness on structural, non-structural disaster mitigation requirements.
Disaster Preparedness	refers to hazard assessment, documentation of risk areas and mapping, research and planning for crisis administration, education and training / drills in LGUs, road safety and technical assistance to cities, municipalities and barangay disaster coordinating councils as well as the various schools and universities and the business sectors. Developed warning criteria on floods, landslides and mudflows.
Disaster Response Operations	refers to overall administration and coordination of disaster response activities such as execution of emergency plans, communication and information management, monitoring of disaster situation, stabilizing the crisis situation, provide ambulant services to the distress victims, command post and the likes.

Disaster Risk Index (DRI)	refers to the model developed to assess what countries are most at risk from hazards, such as droughts, floods, cyclones and earthquakes, based on observed past losses and their relation to population exposure and vulnerability. The DRI is used for the annual ranking of countries in terms of human vulnerability linked mostly with country development level and environmental quality.
Disaster Risk Index (DRI)	which aims at monitoring the evolution of risk, assessing what countries are most at risk requires considering various types of hazards, such as. Before assessing risk, these four hazards were modeled using GIS and overlaid with a model of population distribution in order to extract human exposure. Human vulnerability was measured by crossing exposure with selected socio-economic parameters. The model evaluates to what extent observed past losses are related to population exposure and vulnerability. Results reveal that human vulnerability is mostly linked with country development level and environmental quality.
Early Warning System	the set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss. A people-centered early warning system necessarily comprises four (4) key elements: knowledge of the risks; monitoring, analysis and forecasting of the hazards; communication or dissemination of alerts and warnings; and local capabilities to respond to the warnings are received. The expression "end- to-end warning system" is also used to emphasize that warning systems need to span all steps from hazard detection to community response.
Emergency	Unforeseen or sudden occurrence, especially danger, demanding immediate action.

Exposure	what is at risk from climate change (e.g. population, resources, property) and the change in climate itself (e.g. sea level rise, temperature, perception, extreme events).
Extreme Events	
Flood	is defined as a rise, usually brief, in the water level in a stream to a peak from which the water level recedes at a slower rate (Excess Water)
Flooding	a great flow of water that rises and spreads over the land. may result when a volume of water from lakes/streams/ rivers exceeds its carrying capacity and escapes from its usual boundaries
Focus groups	groups of stakeholders that discuss their opinions on certain topics
Framework	Structure, organization
Geographic	location, contour, features, etc.
Global warming	refers to the increase in the average temperature of the Earth's near-surface air and oceans that is associated with the increased concentration of greenhouse gases in the atmosphere.
Greenhouse Effect	refers to the process by which the absorption of infrared radiation by the atmosphere warms the Earth.
Greenhouse Gases	refers to constituents of the atmosphere that contribute to the greenhouse effect including, but not limited to, carbon dioxide, methane, nitrous oxide hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.
Greenhouse Gases (GHG)	those gaseous constituents of the atmosphere, either natural or anthropogenic, that absorb and emit radiation at specific wavelengths within the spectrum of infrared radiation emitted by the Earth's surface, the atmosphere and clouds.

Hazard	danger, risk, calamity/ it is defined as the intrinsic property, characteristics, or condition of a material or system that has the potential to cause harm. (PANGANIB)
Human Development Index (HDI)	refers to a composite statistic of life expectancy, education, and income indices to rank countries into four tiers of human development. It was created by economist Madhubala, followed by economist Amartya Sen in 1990, and published by the United Nations Development Programmed.
Mainstreaming	refers to the integration of policies and measures that address climate change into development and sectoral decision making.
Mitigation	within the context of climate change, refers to human intervention to address anthropogenic emissions by sources and removal by sinks of all GHG, including ozone-depleting substances and their substitutes.
Mitigation	structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation, and technological hazards and to ensure the ability of at-risk communities to address vulnerabilities aimed at minimizing the impact of disasters. Such measures include, but are not limited to, hazard-resistant construction and engineering works, the formulation and implementation of plans, programs, projects and activities, awareness raising, knowledge management, policies on land-use and resource management, as well as the enforcement of comprehensive land-use planning, building and safety standards, and legislation.
Mitigation potential	refers to the scale of GHG reductions that could be made, relative to emission baselines, for a given level of carbon price
Planned adaptation	refers to anticipatory, pro-active and transformative adaptation based on awareness of long-term future changes in climate conditions.
Preparedness	pre-disaster actions and measures being undertaken within the context of disaster risk reduction and management and are based on sound risk analysis as well as pre-disaster activities to avert or minimize loss of life and property such as, but not limited to, community organizing, training, planning, equipping, stockpiling, hazard mapping, insuring of assets, and public information and education initiatives.
Private Sector	the key actor of the economy where the central social concern and process are the mutually beneficial production and distribution of goods and services to meet the physical needs of human beings. The private sector comprises private corporations, households and nonprofit institutions serving households.

Recovery	refers to damage assessment, rehabilitation planning and secure funding. Organizing of disaster recovery and development team through cluster approach.
Rehabilitation	measures that ensure the ability of affected communities/ areas to restore their normal level of functioning by rebuilding livelihood and damaged infrastructures and increasing the community's organizational capacity.
Resilience	the ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.
Response	any concerted effort by two (2) or more agencies, public or private, to provide assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected and in the restoration of essential public activities and facilities.
Risk	is defined as the likelihood of an adverse effect, direct or indirect, on human health and welfare. Risk is mathematically expressed as the product of hazard, exposure and vulnerability
Risk	refers to a measure of the likelihood of exposure to a hazard and the consequence/impact of that hazard such as the probability of being struck by flood and the magnitude of the impact of the flood measured in terms of cost of crop damage; the higher the probability of the occurrence of a hazard and the higher its impact, the higher the risk.
Risk Reduction	the concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposures to hazards, lessened vulnerability of people and property, wise management of land and the environment and improved preparedness for adverse events.

Risk Reduction and Management	systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster. Prospective disaster risk reduction and management refers to risk reduction and management activities that address and seek to avoid the development of new or increased disaster risks, especially if risk reduction policies are not put in place.
Sea level Rise	refers to increase in sea level which may be influenced by factors like global warming through the expansion of sea water as the oceans warm and melting of ice over land, as well as other local factors such as land subsidence.
Sensitivity	is the degree of biophysical effects of climate change which also considers the socioeconomic context of the system being assessed
Sensitivity	the biophysical effect (e.g. flooding, strong winds, land inundation, etc.) of climate change which also considers the socioeconomic context of the system being assessed.
Sensitivity	refers to the degree to which a system is affected, either adversely or beneficially, by climate-induced hazards such as landslides, flashfloods or drought. More sensitive areas are likely to sustain more serious damage or impact.
Stakeholder consultation	consultation with individuals and/or groups affected by future processes
State of Calamity	a condition involving mass casualty and/or major damages to property, disruption of means of livelihoods, roads and normal way of life of people in the affected areas as a result of the occurrence of natural or human-induced hazard.
Susceptible	at risk, prone, having a tendency, subject
Sustainable Development	development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two (2) key concepts: (1) the concept of "needs", in particular, the essential needs of the world's poor, to which overriding priority should be given; and (2) the idea of limitations imposed by the state of technology and social organizations on the environment's ability to meet present and future needs. It is the harmonious integration of a sound and viable economy, responsible governance, social cohesion and harmony, and ecological integrity to ensure that human development now and through future generations is a life-enhancing process.

Vulnerability	the degree to which the exposed elements will suffer a loss from the impact of a hazard. “Vulnerability" ~ the characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. Vulnerability may arise from various physical, social, economic, and environmental factors such as poor design and construction of buildings, inadequate protection of assets, lack of public information and awareness, limited official recognition of risks and preparedness measures, and disregard for wise environmental management.
Vulnerability	the degree to which a system is susceptible to, or unable to cope with adverse effects of climate change, including climate variability and extremes. Is a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity, and its capacity.
Vulnerability	refers to the extent to which a natural or human system is susceptible to sustaining damage resulting from climate variability and change, despite human actions to moderate or offset such damage, as a function of the character, magnitude, and rate of climate variation to which a system is exposed, its sensitivity and its adaptive capacity (ADB 2005).
Vulnerable	helpless, in danger, in a weak position, defenseless
Vulnerable and Marginalized Groups	those that face higher exposure to disaster risk and poverty including, but not limited to, women, children, elderly, differently-abled people, and ethnic minorities.
Vulnerable and marginalized groups	refers to groups or communities who face higher exposure to disaster risk and aggravated poverty including, but not limited to, children, elderly, differently-abled people and indigenous peoples

SECTION 1: BACKGROUND

Rationale of the Plan

The 2016 Global Climate Risk Index ranked the Philippines as the fourth most affected country by extreme weather events from 1995 to 2014. The study categorized the top 10 most affected countries into two groups: those ranking high due to isolated catastrophic events and those consistently experiencing extreme weather. The Philippines falls into the latter category.

Climate change is a pressing reality, and due to its geographic location, the Philippines is among the most vulnerable nations. The country faces significant threats such as rising sea levels, increasing temperatures, shifting rainfall patterns, and intensifying tropical cyclones.

Recognizing the urgency of climate change, the Philippines established the Inter-Agency Committee on Climate Change (IACCC) in 1991. Additionally, the country demonstrated its commitment to global environmental efforts by supporting the United Nations Framework Convention on Climate Change (UNFCCC) and ratifying the Kyoto Protocol in 1994 and 2003, respectively.

The enactment of Republic Act 9729, or the Climate Change Act of 2009, ensures the integration of climate change adaptation and disaster risk reduction into national, sectoral, and local development plans and programs. The Act also led to the creation of the Philippine Climate Change Commission (PCCC), which developed the National Framework Strategy on Climate Change (NFSCC) and the National Climate Change Action Plan (NCCAP).

Under Section 14 of RA 9729, local government units (LGUs) play a frontline role in formulating, planning, and implementing climate change action plans within their jurisdictions, in alignment with the Local Government Code, the Framework, and the NCCAP.

The NCCAP outlines seven priority areas:

1. Food security
2. Water sufficiency
3. Ecosystem and environmental stability
4. Human security
5. Climate-smart industries and services
6. Sustainable energy
7. Knowledge and capacity development

This framework has guided the development of the Sorsogon City Enhanced Local Climate Change Action Plan (2025-2027).

Sorsogon City has long experienced the effects of climate change. Even before climate change became a mainstream concern, the city frequently endured typhoons and storm surges. Over time, Sorsoganons have adapted to these challenges in different ways. Residents in urban barangays, particularly those in gated communities, perceive themselves as relatively safe from strong winds and flooding. Meanwhile, coastal and rural communities depend on existing disaster response systems for rescue, evacuation, and recovery. Many residing in

homes built from light materials have learned to rebuild after each calamity.

With climate change intensifying, it is crucial for Sorsogon City to take a comprehensive and strategic approach to assessing its strengths, vulnerabilities, limitations, and available resources to enhance its resilience and adaptability.

BACKGROUND OF THE eLCCAP

eLCCAP time-frame

The Enhanced LCCAP 2025-2027 has an extended time-frame to that of the existing LCCAP of 2022-2024. This current plan outlines the essential role of adequate resources to support priority climate actions of different programs, projects, and activities. As a result, the following time-frames are followed for an accurate, consistent, transparent, and complete process of planning and implementation towards achieving the city's mitigation and adaptation goals.

Short-Term	2025-2027
Medium-Term	2028-2033

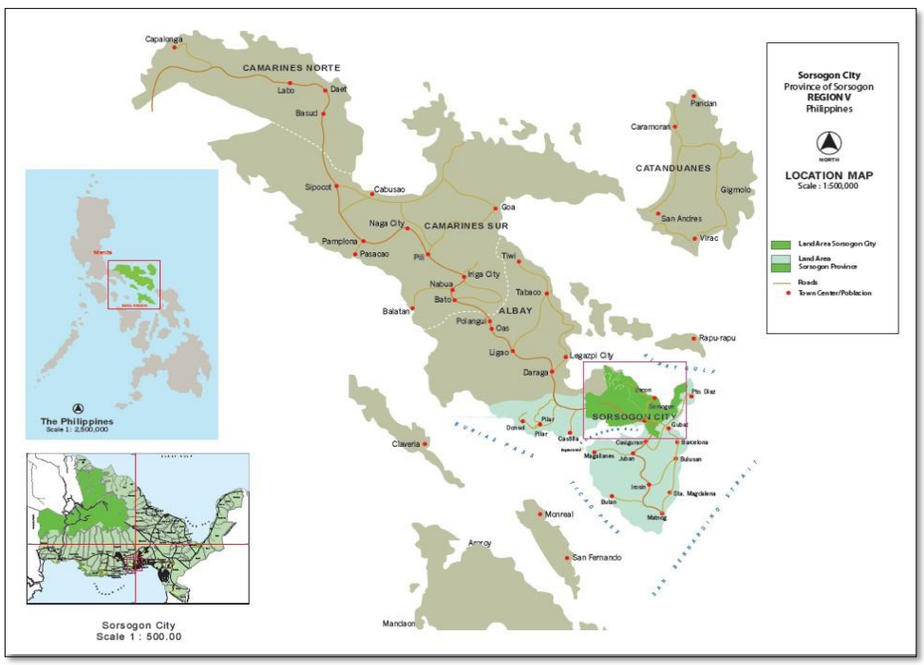
GEOGRAPHIC/LOCATION INFORMATION

Location

Sorsogon City lies from 123° 53' to 124° 09' east longitude and from 12° 55' to 13° 08' north latitude, and is situated in the Philippines' Bicol Region. It is 600 kilometers southeast of Manila and is located at the southernmost tip of Luzon. As part of the geographical chain linking Luzon to the rest of the Philippines, it is a transshipment corridor and serves as the gateway to the Visayas and Mindanao Islands. Its geographical location is such that it opens into the Pacific Ocean to the West and East, through Albay Gulf and Sugod Bay and the China Sea through the Sorsogon Bay.

The city is bounded on the east by the municipalities of Prieto Diaz and Gubat, on the south by the municipality of Casiguran and Sorsogon Bay, on the west by the municipality of Castilla, on the northeast by the municipality of Manito in Albay, and on the north by Albay Gulf. It covers 31,292 hectares and is composed of 64 barangays.

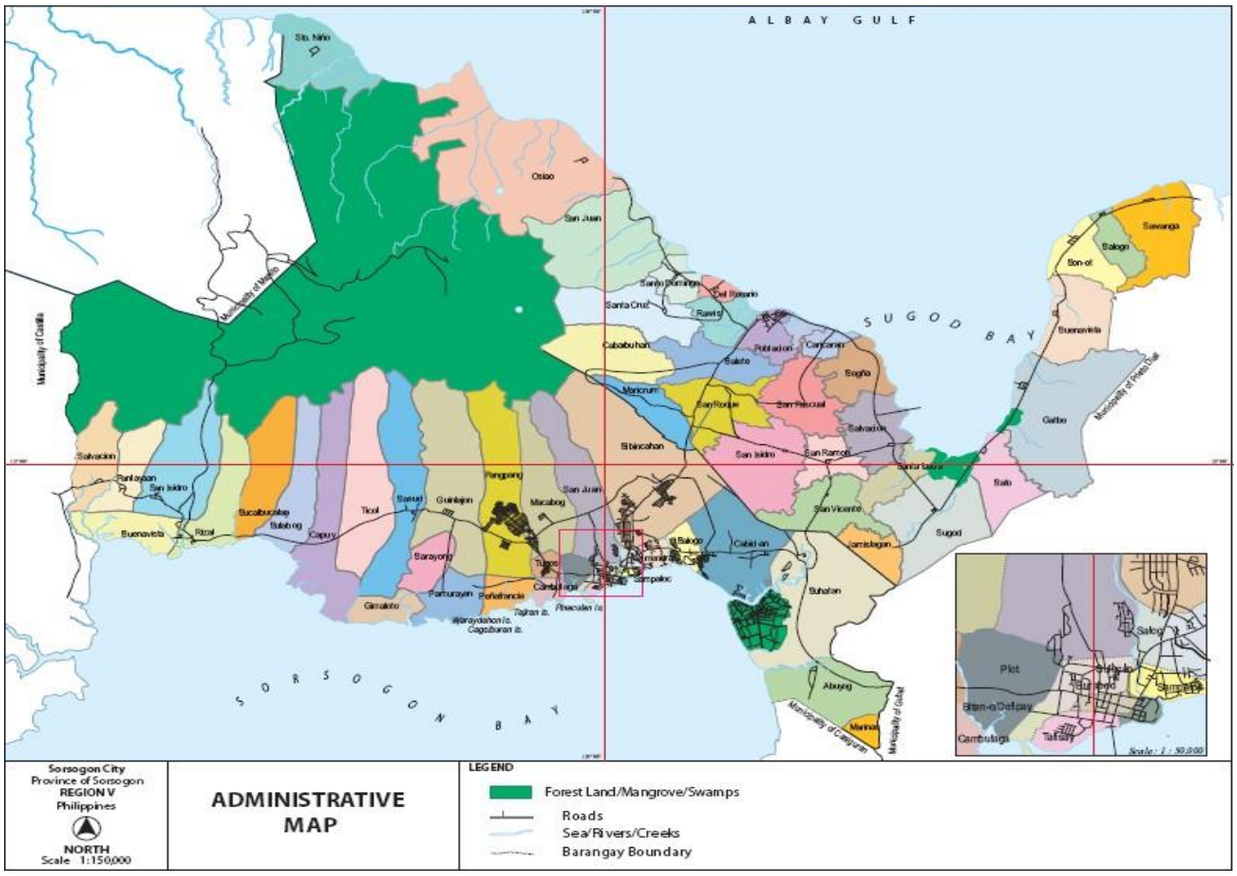
Figure 1: Location of Sorsogon City



Demography

The City has a total population of 155, 144 based on the 2010 national census of population. It is considered as the largest city in Bicol Region in terms of land area and one of the region's leading cities in terms of urbanization as it is one of the most populous cities in the region

Figure 2: Administrative Map of Sorsogon City



Climate

The climate of Sorsogon is Type II under the Coronas classification system. There is no pronounced dry season but with a very pronounced maximum rain period from November to January. Rains start late September or early October. Annual rainfall ranges from 2,800 mm to 3,500 mm. Rain is expected 200 days in a year and even in the driest months unexpected downpour occurs.

Temperature ranges from 21 °C to 32 °C. Relative humidity is 82 percent. Prevailing winds are the monsoons and Pacific Trade Winds. The Northeast Monsoon (Amihan) occurs from October to March while the Southwest Monsoon (Habagat) occurs from June to September. The Pacific Trade Winds (Gurang na Habagat) occurs during April and May. Wind speed ranges from 7 to 12 kph.

Based on typhoon frequency, the country has been divided into six zones. Sorsogon together with the rest of Bicol Peninsula and the island-province of Catanduanes is passed by three tropical cyclones every two years. In the past ten years, three destructive typhoons have directly hit the city.

Figure 3: Climate Type of Sorsogon City

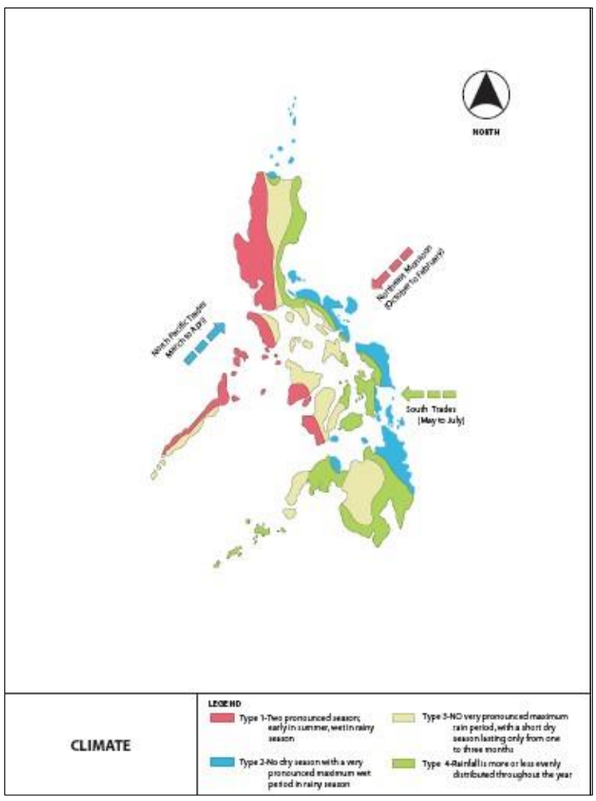
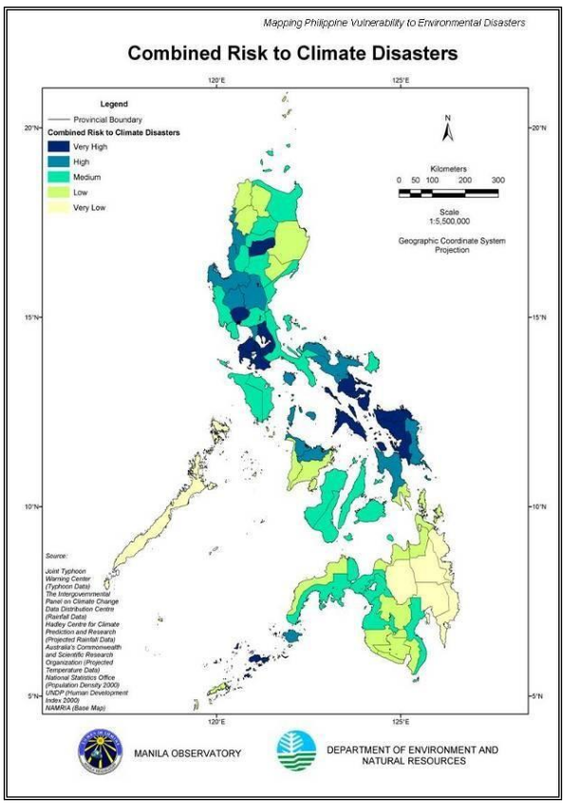


Figure 4: Combined Risks to Climate Disasters



Typhoons, tropical depressions, and cold fronts affect both rainfall and winds. The Province of Sorsogon, where the City is located, has been identified by a study of the Manila Observatory and the Department of Environment and Natural Resources being at Very High Risk from combined Climate Disasters

Previous disaster events caused massive destruction in Sorsogon City the most recent of them being Super Typhoons Milenyo (September 2006) and Reming (November 2006) which took place in the last quarter of 2006.

Facing these challenges becomes more difficult for the city as year-on-year it continues to face climate induced disasters which not only affect physical structures but also social infrastructure that reduces its capacity to achieve sustainable urbanization. The city has recognized that indeed climate over time has changed and that local actions are needed citing the experiences they have had from the disastrous Typhoons Reming and Milenyo.

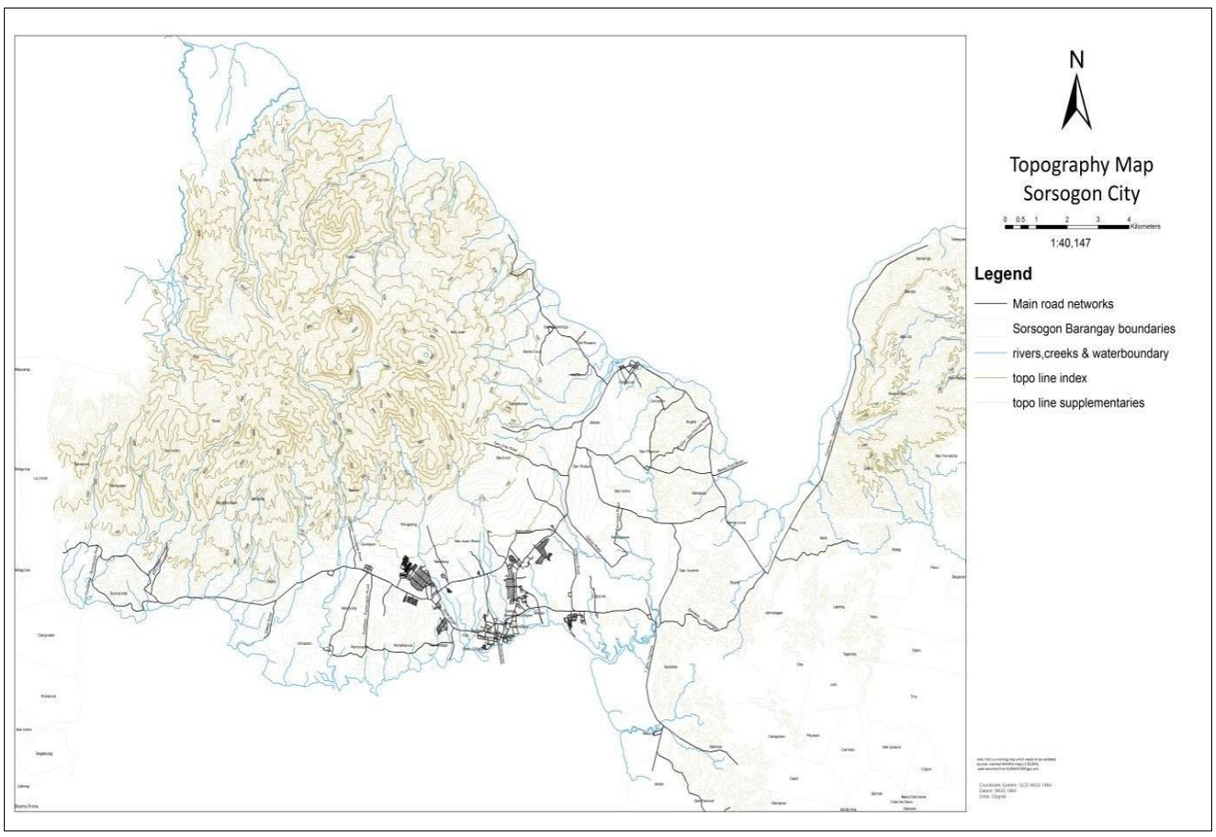
As such, the city fully considers that climate change is not just a global or national issue, but a direct local issue as well. Climate risks are further discussed in succeeding sections.

Topography

Sorsogon may be divided into four physical areas – the northeastern range, the sloping uplands, the plain area, and marshlands.

The northeastern range is part of the Bacon-Castilla range, bordering Sorsogon's north and serves as its watershed covered mainly by secondary forest growth and thicket. It starts from 200 m above sea level to Mt.Rangas, the highest point at 1,000 meters. The sloping uplands are the shoulders of the range and the series of hills in the southeast. Coconut, abaca, and fruit trees cover this area. The plain is generally low and level. Settlements and other built-up areas and rice fields occupy the plain area. Marshlands are the mouth of rivers vegetated mainly by nipa and are developed into fishponds.

Figure 5: Topography Map



Elevation

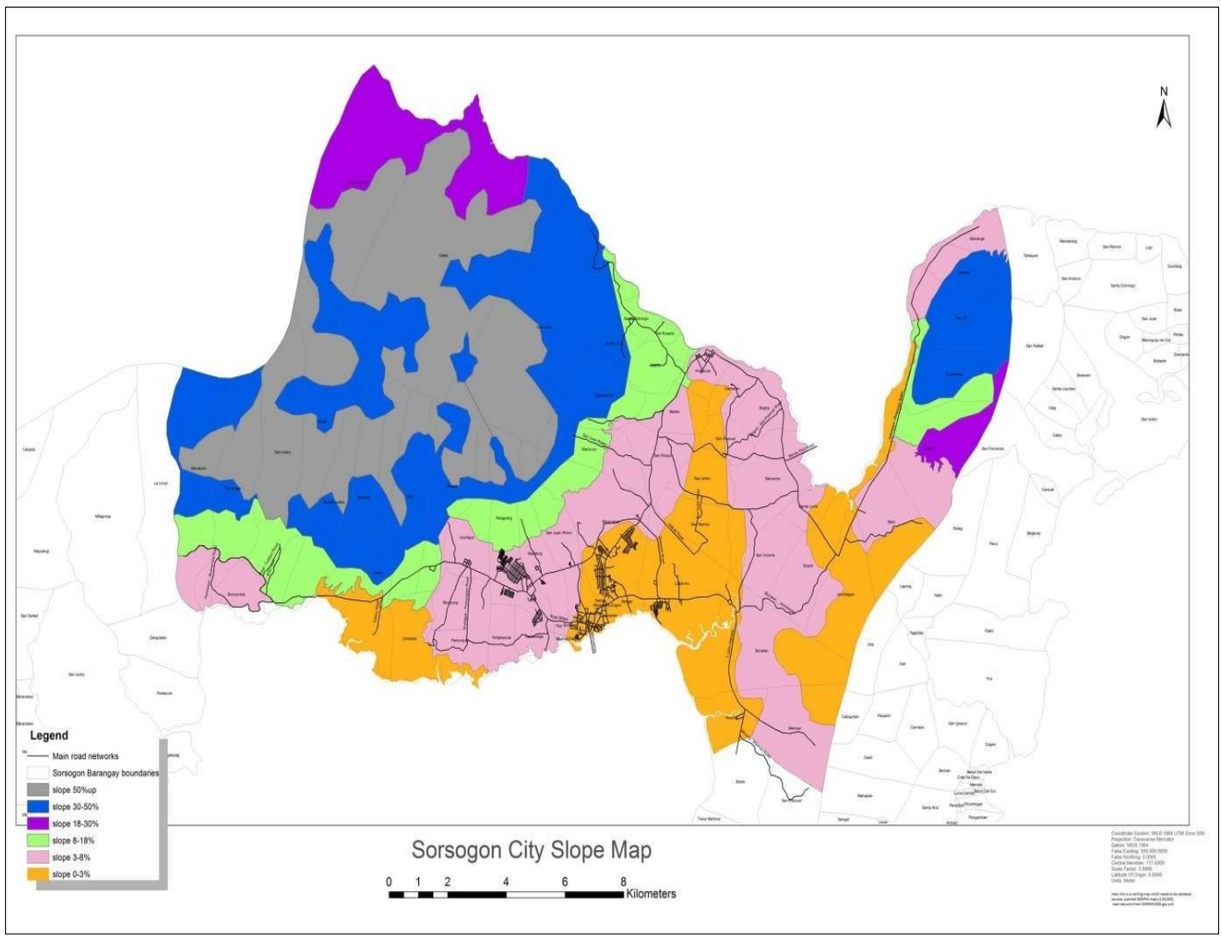
Elevation starts from 0-100 meters above sea level (masl) to Mt. Rangas, the highest point at 1,000 meters. The sloping uplands are the shoulders of the range and the series of hills in the southeast. Coconut, abaca, and fruit trees cover this area. The plain is generally low and level. Settlements and other built-up areas and rice fields occupy the plain area. Marshlands are the mouth of rivers vegetated mainly by nipa and are developed into fishponds.

Slope

Sorsogon City has a large area suitable for urban use in terms of slope. These are areas with equal to or less than 30 percent grade. This account to more than half of the city's area. Steep slopes suitable for forest use are situated within the geothermal site reservation area.

Slope category	Area covered (ha)	Suitability
0 - 3 %	4,296	Urban use
3 - 8 %	6,905	Urban use
8 - 18 %	3,309	Urban use
18 - 30 %	1,379	Urban use
30 - 50 %	5,976	Forest Use
> 50 %	5,588	Forest Use

Figure 6: Slope Map



Suitability of Land for Urban Use

Of the total area of the city, a total of 15, 800 hectares or 58 percent is below 30% grade in slope which are suitable for development in urban use. The remaining areas have slopes above 30% grade and are suited only for forest use.

Drainage Pattern, bodies of water Surface Drainage

A system of rivers and creeks and several small waterways drains the area. The northern half of the city is drained by rivers and creeks that empty to Sugod Bay and Albay Gulf. The southern half is drained towards Sorsogon Bay. Fresh water rivers, when reaching the lowlands have been tapped for irrigation and domestic uses. Brackish ones are source of shrimps and shellfish.

Watershed, Rivers and Creeks

A system of rivers and creeks and several small waterways drain the general area of the city: Salog River is an urban river originating from Mt. Alinao and traversing eight barangays before discharging into the Sorsogon Bay. San Isidro, Rizal, and Cawayan Rivers originate from springs and tributaries of secondary forest areas within EDC Geothermal Reservation including the Bacon District or northwestern rivers of the city. Rivers in Bacon District, at the northwestern to northeastern portion of the city, drain to the Albay Gulf. These include Luluwasan Osiao, Gatbo and Rangas Rivers. Rivers in the southwest & south namely San Isidro, Cawayan, Salog, and Abuyog Rivers at the East & West District drain into the Sorsogon Bay.Fresh Water Rivers, upon reaching the lowlands, are often tapped for irrigation and domestic uses. Brackish ones are source of shrimps and shellfish. Water resources in the City are generally classified into surface and groundwater. Springs (Table 4) and networks of creeks and tributaries at the upland converges at the down streams to form major river systems.

Vegetation/vegetative cover

Land cover	Total area covered (ha)	% to Total
Mangrove forest	789.49	2.85%
Open forest, broadleaved	1,819.64	6.57%
Other land, built-up area	262.95	0.95%
Other land, cultivated, annual crop	2,636.39	9.53%
Other land, cultivated, perennial crop	10,713.83	38.71%
Other land, fishpond	75.45	0.27%
Other land, natural, grassland	266.14	0.96%
Other wooded land, shrubs	11,112.15	40.15%

Surface Drainage

A system of rivers and creeks and several small waterways drain the general area of the city: Salog River is an urban river originating from Mt. Alinao and traversing eight barangays before discharging into the Sorsogon Bay. San Isidro, Rizal, and Cawayan Rivers originate from springs and tributaries of secondary forest areas within EDC Geothermal Reservation.

Rivers in Bacon District, at the northwestern to northeastern portion of the city, drain to the Albay Gulf. These include Luluwasan Osiao, Gatbo, and Rangas Rivers. Rivers in the southwest & south namely San Isidro, Cawayan, Salog, and Abuyog Rivers at the East & West District drain into the Sorsogon Bay.

Fresh water rivers, upon reaching the lowlands, are often tapped for irrigation and domestic uses. Brackish ones are source of shrimps and shellfish.

Water resources in the City are generally classified into surface and groundwater. Springs and networks of creeks and tributaries at the upland converges at the down streams to form major river systems. There are also creeks that only exist during rainy periods and dries up during dry season

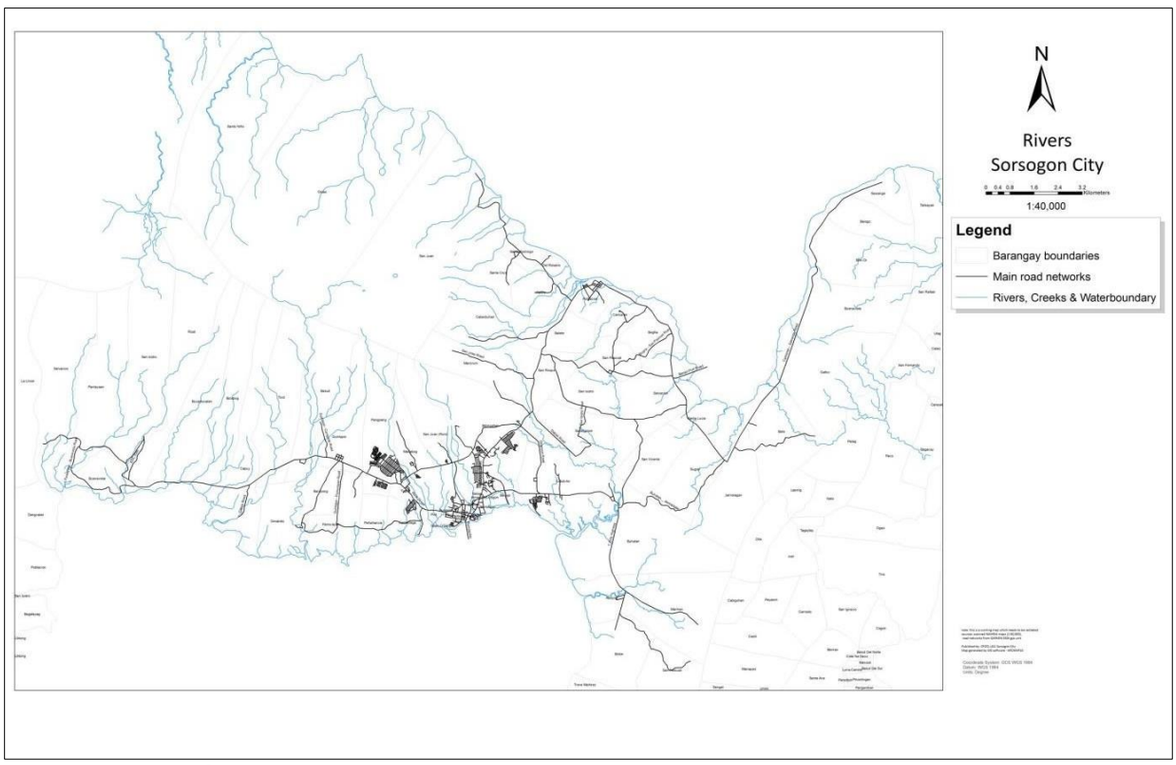
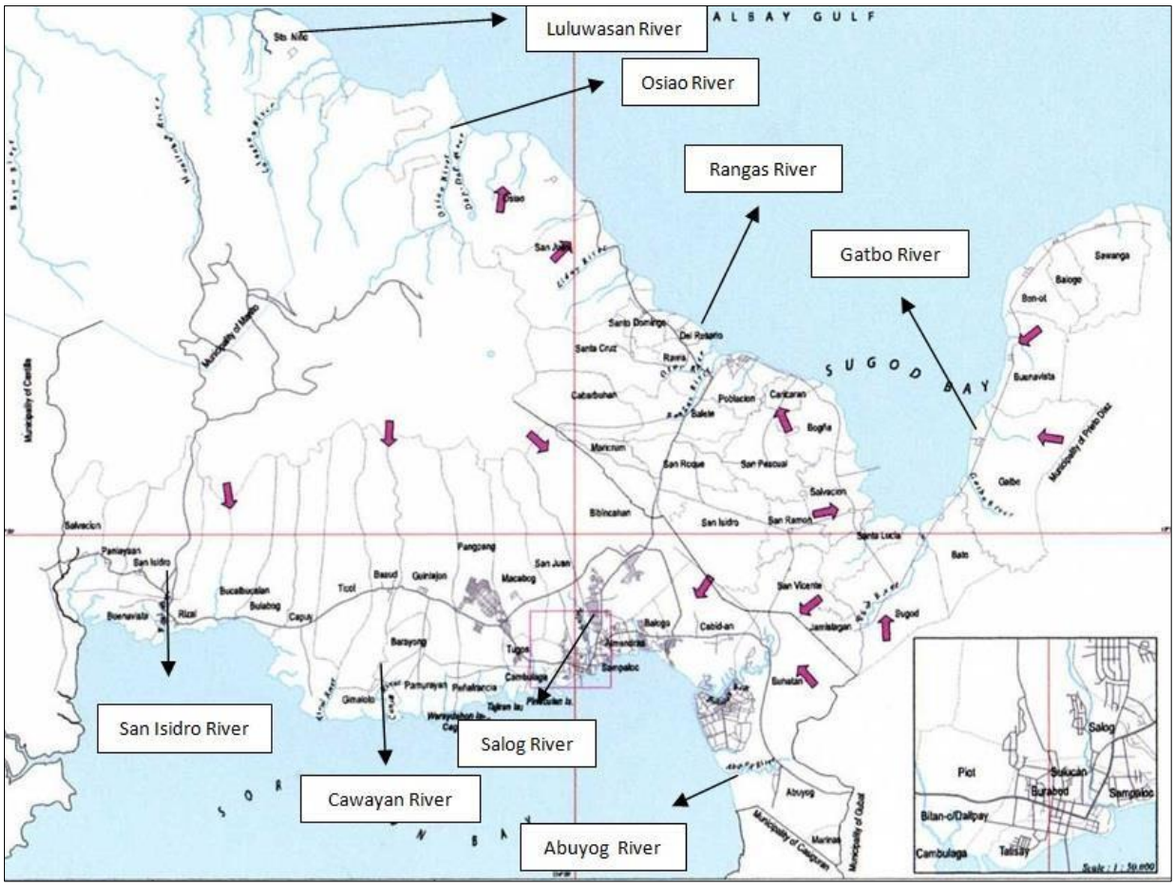


Figure 7: Map of Rivers



Geology

The northern part of Sorsogon is made up of andesitic lava flows and other volcanic rocks. Rocks in the northeast are coralline limestone which is now being quarried for marble produced by different episodes of volcanic intrusions.

The rest of the flatlands are recent alluvial deposits composed of clays, silt, sand, gravel, and corral.

Geothermal energy has been successfully exploited in the northern part of the city. From wells drilled and developed by the Philippine National Oil Corporation, the National Power Corporation is operating three plants with a capacity of 130 MW connected to the Luzon Grid. As to non-metallic minerals, the Bureau of Mines and Geosciences has determined a sulfur deposit of 755 metric tons in Rizal. Its grade ranges from 10 percent to 40 percent. Gravel and sand can be quarried at the Cawayan River.

Soil

Dominant Soil types are Annam clay loam. Annam clay loam has a relief of slightly undulating, roughly rolling to undulating. It covers about half of the area. It is suited to lowland rice, root crops, vegetables, and permanent planting. Sorsogon clay loam is the soil on the plains and valleys. It is suited to lowland rice, abaca, and corn

Soil Suitability

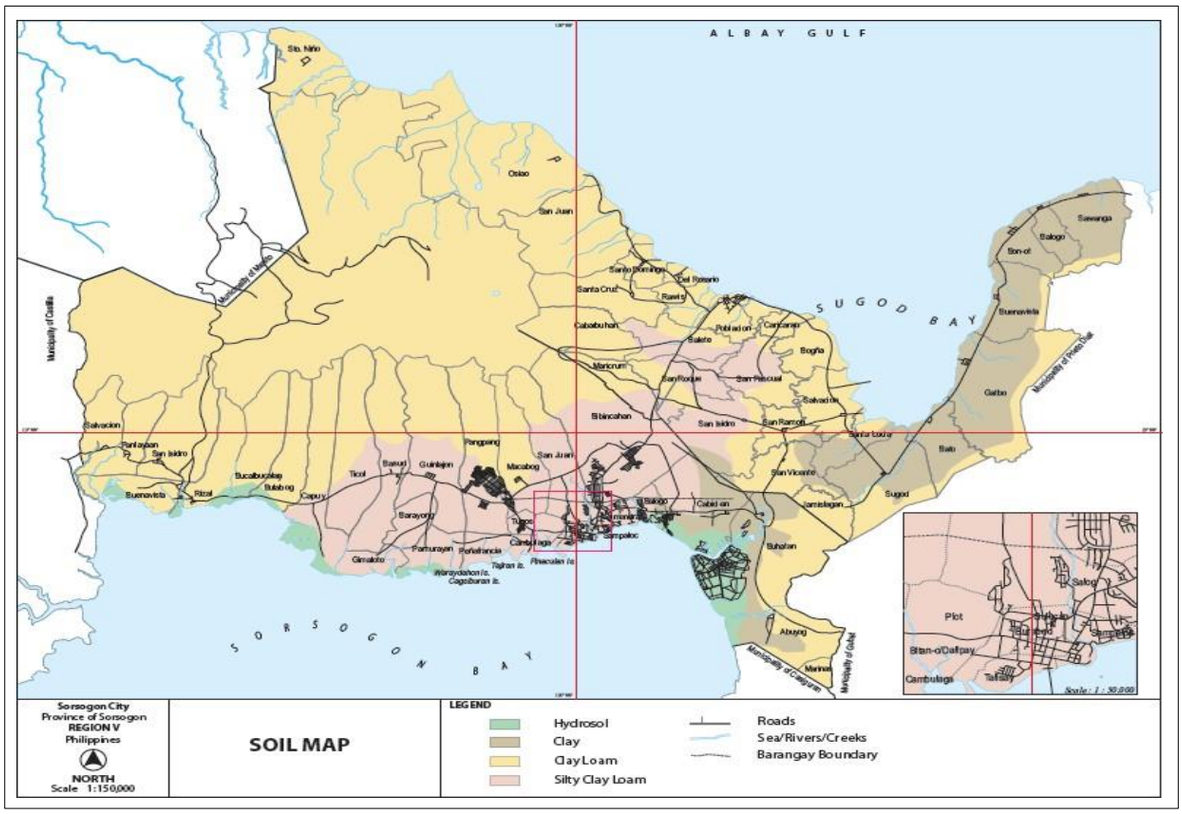
Sorsogon City is endowed with soil type or 96% of its area suited for agriculture. While elevation and slope are also a factor, agricultural area is limited to lower areas. The loamy soil type makes it suitable for agriculture.

Barangay	Soil type	Suitability for Agriculture	Total Area Covered (ha)	% to Total
	Hydrosol	Unsuitable	25.617	0.09%
	Hydrosol	Unsuitable	8.837	0.03%
Salog (Pob.)	Silty Clay Loam	Suitable	23.706	0.09%
Salvacion	Clay Loam	Suitable	262.605	0.97%
Sampaloc (Pob.)	Silty Clay Loam	Suitable	15.295	0.06%
San Isidro	Clay Loam	Suitable	532.245	1.97%
San Juan Roro	Clay Loam	Suitable	132.509	0.49%
	Silty clay loam	Suitable	301.373	1.12%
Sirangan (Pob.)	Silty Clay Loam	Suitable	5.453	0.02%
Sulucan (Pob.)	Silty Clay Loam	Suitable	3.166	0.01%
Talisay (Pob.)	Silty Clay Loam	Suitable	17.831	0.07%
Ticol	Clay Loam	Suitable	382.162	1.42%
	Silty clay loam	Suitable	110.624	0.41%
Tugos	Silty Clay Loam	Suitable	65.374	0.24%
Balete	Clay Loam	Suitable	95.665	0.35%
	Silty clay loam	Suitable	222.705	0.83%
Balogo (B)	Clay	Suitable	166.282	0.62%
	Clay Loam	Suitable	2.845	0.01%
Bato	Clay	Suitable	275.429	1.02%
	Clay Loam	Suitable	117.982	0.44%
Bon-ot	Clay	Suitable	257.230	0.95%
	Clay Loam	Suitable	10.219	0.04%
Bogña	Clay Loam	Suitable	263.389	0.98%
Buenavista	Clay	Suitable	344.171	1.28%
	Clay Loam	Suitable	53.654	0.20%
Cabarbuhan	Clay Loam	Suitable	379.108	1.40%
	Silty clay loam	Suitable	8.101	0.03%
Caricaran	Clay Loam	Suitable	104.616	0.39%
Del Rosario	Clay Loam	Suitable	60.695	0.22%
Gatbo	Clay	Suitable	645.918	2.39%
	Clay Loam	Suitable	165.330	0.61%
Jamislagan	Clay	Suitable	4.522	0.02%
	Clay Loam	Suitable	250.936	0.93%
Maricrum	Clay Loam	Suitable	159.950	0.59%
	Silty clay loam	Suitable	53.010	0.20%
Osiao	Clay Loam	Suitable	1,373.710	5.09%
	Clay Loam	Suitable	0.001	0.00%

Barangay	Soil type	Suitability for Agriculture	Total Area Covered (ha)	% to Total
Forestland (EDC)	Clay Loam	Suitable	6,549.229	24.27%
Abuyog	Clay	Suitable	98.427	0.36%
	Clay Loam	Suitable	262.534	0.97%
	Hydrosol	Unsuitable	55.457	0.21%
Almendras-Cogon	Silty clay loam	Suitable	10.781	0.04%
Balogo (East)	Clay	Suitable	1.371	0.01%
	Silty Clay Loam	Suitable	105.345	0.39%
	Hydrosol	Unsuitable	5.194	0.02%
Barayong	Silty clay loam	Suitable	123.254	0.46%
Basud	Clay Loam	Suitable	215.217	0.80%
	Silty clay loam	Suitable	255.817	0.95%
Bibincahan	Clay	Suitable	3.681	0.01%
	Clay Loam	Suitable	287.044	1.06%
	Silty Clay Loam	Suitable	729.175	2.70%
Bitan-o Dalipay	Silty clay loam	Suitable	23.529	0.09%
Bucalbucalan	Clay Loam	Suitable	368.644	1.37%
	Hydrosol	Unsuitable	22.762	0.08%
Buenavista	Clay Loam	Suitable	278.140	1.03%
	Hydrosol	Unsuitable	13.641	0.05%
	Hydrosol	Unsuitable	33.748	0.13%
Buhatan	Clay	Suitable	263.522	0.98%
	Clay Loam	Unsuitable	405.589	1.50%
	Hydrosol	Unsuitable	241.689	0.90%
Bulabog	Clay Loam	Suitable	0.012	0.00%
	Clay Loam	Suitable	346.489	1.28%
	Hydrosol	Unsuitable	30.676	0.11%
Burabod	Silty clay loam	Suitable	23.109	0.09%
Cabid-an	Clay	Suitable	245.526	0.91%
	Clay Loam	Suitable	0.084	0.00%
	Silty clay loam	Suitable	195.063	0.72%
	Hydrosol	Unsuitable	130.482	0.48%
Cambulaga	Silty clay loam	Suitable	54.281	0.20%
Capuy	Clay Loam	Suitable	334.781	1.24%
	Clay Loam	Suitable	0.012	0.00%
	Silty Clay Loam	Suitable	218.427	0.81%
	Silty Clay Loam	Suitable	0.010	0.00%
	Hydrosol	Unsuitable	86.126	0.32%
	Hydrosol	Unsuitable	0.080	0.00%
	Hydrosol	Unsuitable	0.010	0.00%
Guinlajon	Clay Loam	Suitable	495.689	1.84%
	Silty clay loam	Suitable	318.132	1.18%
Macabog	Clay Loam	Suitable	271.371	1.01%
	Silty clay loam	Suitable	118.972	0.44%
Marinas	Clay	Suitable	7.294	0.03%
	Clay loam	Suitable	157.164	0.58%
Pamurayan	Silty Clay Loam	Suitable	260.450	0.97%
	Hydrosol	Unsuitable	44.878	0.17%
Pangpang	Clay Loam	Suitable	354.731	1.31%
	Silty clay loam	Suitable	236.228	0.88%
Panlayaan	Clay Loam	Suitable	234.276	0.87%
Peñafrancia	Silty Clay Loam	Suitable	163.255	0.60%
Piot (Pob.)	Silty Clay Loam	Suitable	56.699	0.21%
Polvorista (Pob.)	Silty Clay Loam	Suitable	5.418	0.02%
Rizal	Clay Loam	Suitable	324.590	1.20%

Poblacion	Clay Loam	Suitable	203.496	0.75%
	Silty clay loam	Suitable	6.030	0.02%
Rawis	Clay Loam	Suitable	133.980	0.50%
Salvacion	Clay	Suitable	6.648	0.02%
	Clay Loam	Suitable	272.374	1.01%
San Isidro (B)	Clay	Suitable	89.842	0.33%
	Clay Loam	Suitable	218.425	0.81%
	Silty clay loam	Suitable	224.684	0.83%
San Juan	Clay Loam	Suitable	709.003	2.63%
	Clay Loam	Suitable	0.001	0.00%
San Pascual	Clay Loam	Suitable	0.001	0.00%
	Silty clay loam	Suitable	159.241	0.59%
San Ramon	Clay	Suitable	18.351	0.07%
	Clay Loam	Suitable	181.375	0.67%
San Roque	Clay Loam	Suitable	121.757	0.45%
	Silty clay loam	Suitable	209.407	0.78%
San Vicente	Clay	Suitable	21.077	0.08%
	Clay	Suitable	76.044	0.28%
	Clay Loam	Suitable	225.362	0.84%
Sta. Cruz	Clay Loam	Suitable	415.401	1.54%
	Silty clay loam	Suitable	0.640	0.00%
Sta. Lucia	Clay	Suitable	153.148	0.57%
	Clay Loam	Suitable	39.895	0.15%
Santo Domingo	Clay Loam	Suitable	150.380	0.56%
Santo Niño	Clay Loam	Suitable	408.448	1.51%
Sawanga	Clay	Suitable	268.042	0.99%
	Clay Loam	Suitable	40.313	0.15%
Sugod	Clay	Suitable	398.564	1.48%
	Clay Loam	Suitable	103.237	0.38%

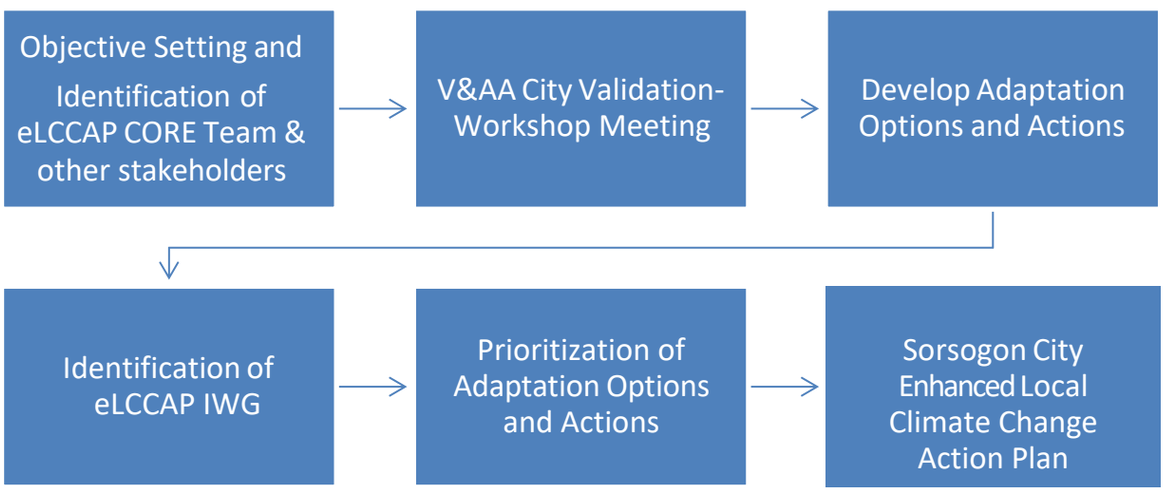
Figure 8: Soil Map



Planning Approach

The process is participatory involving different stakeholders. Participation of stakeholders is needed in all aspects. Strong community mobilization is needed so that people could better understand the need for safe housing and the need to cooperate and participate in improving and maintaining basic community infrastructure. No single institution or group could resolve disaster related issues and the responsibility should be shared among all. Civil society plays a main role in working with communities while governments provide the appropriate policy environment to make things work on ground.

Framework



eLCCAP CORE TEAM & STAKEHOLDERS

The following are the mandatory members of the eLCCAP Core Team as recommended in DILG Memorandum Circular No. 2014-135 dated 21 October 2014, *"Guidelines on the Formulation of Enhanced Local Climate Change Action Plan (eLCCAP)"*, namely: City Planning and Development Office, City Environment and Natural Resources Office, City Health Office, City Engineering Office, City Agricultural Services Office, City Social Welfare & Development Office, City Budget Office, City Treasurers Office, City DRRM Office and DILG City Officer.

Other stakeholders include members of the Sangguniang Panlungsod, Sorsogon City Water District, Sorsogon Electric Cooperative, Kapisanan ng Broadkasters ng Pilipinas, Department of Education, Bureau of Fire Protection, Philippine National Police, Philippine Coast Guard, City Veterinary Office, and Social Action Center.

RESPONSIBLE PERSON

Chairperson:
City Planning and Development Coordinator (CPDO)
Role:

- ✓ Oversees the entire eLCCAP development and implementation process.
- ✓ Coordinates the planning and integration of the LCCAP into existing local development plans.

Responsibilities:

- ✓ Provide overall direction and leadership to the core team.
- ✓ Coordinate with local government executives and other stakeholders to ensure political and financial support for eLCCAP activities.
- ✓ Ensure the integration of climate change initiatives into the local development plans, policies, and programs.
- ✓ Ensure the eLCCAP is integrated into the Comprehensive Land Use Plan (CLUP) and other local plans.
- ✓ Facilitate cross-sectoral coordination to embed climate change responses into different development sectors (agriculture, infrastructure, health, etc.).
- ✓ Track and document the progress of eLCCAP-related activities and ensure they are in line with local development goals.
- ✓ Provide regular reports and updates to the team and local government authorities.
- ✓ Approve final plans and decisions related to the eLCCAP.

Co-Chairpersons:
City Environment and Natural Resources Officer (CENRO)
Role:

- ✓ Spearheads technical inputs on climate change impacts and adaptation measures.

Responsibilities:

- ✓ Assess local climate vulnerabilities and risks, ensuring the data is current and relevant.

- ✓ Identify appropriate climate adaptation and mitigation strategies specific to the locality.
- ✓ Ensure the eLCCAP aligns with national policies, such as the National Climate Change Action Plan (NCCAP).
- ✓ Provide advice on sustainable development practices and climate resilience strategies.
- ✓ Facilitate capacity-building programs for the core team and stakeholders.

City Disaster Risk Reduction and Management Officer (CDRRMO)

Role:

- ✓ Integrates climate change adaptation (CCA) with disaster risk reduction and management (DRRM).

Responsibilities:

- ✓ Align climate adaptation strategies with local disaster preparedness and risk reduction measures.
- ✓ Ensure that early warning systems and risk assessments incorporate climate-related hazards.
- ✓ Participate in the design of emergency response protocols related to climate-induced disasters.
- ✓ Work with the team to implement climate-resilient infrastructure and urban planning solutions.

Members:

Representative from the City Agriculture Office

Role:

- ✓ Focuses on addressing climate impacts on agriculture and natural ecosystems.

Responsibilities:

- ✓ Implement climate-smart agricultural practices to improve food security and protect livelihoods.
- ✓ Identify and protect critical ecosystems that serve as buffers against climate impacts (e.g., forests, wetlands, mangroves).
- ✓ Coordinate reforestation and biodiversity conservation projects that align with the eLCCAP.
- ✓ Ensure sustainable water and land management in the face of climate change.

Representative from the City Social Welfare and Development Office

Role:

- ✓ Ensures community participation and considers the social impact of climate change interventions.

Responsibilities:

- ✓ Engage vulnerable groups (e.g., women, children, the elderly, and marginalized communities) in the planning and decision-making process.
- ✓ Ensure that climate adaptation measures are inclusive and address the needs of all sectors of society.
- ✓ Facilitate public consultations and information dissemination campaigns.
- ✓ Lead community-based resilience-building initiatives.

Representative from the City Budget Office

Role:

- ✓ Manages the financial aspects of the eLCCAP.

Responsibilities:

- ✓ Prepare the budget allocation for eLCCAP activities and secure funding from local and external sources.
- ✓ Ensure proper financial management, tracking, and reporting of expenditures related to climate change initiatives.
- ✓ Explore potential funding opportunities from national government programs, NGOs, and international agencies.
- ✓ Monitor cost-effectiveness of proposed climate change adaptation and mitigation projects.

Representative from the City Engineering Office

Role:

- ✓ Designs climate-resilient infrastructure.

Responsibilities:

- ✓ Review and implement climate-resilient infrastructure projects to reduce vulnerability to climate hazards (e.g., floods, landslides).
- ✓ Ensure infrastructure planning aligns with local climate change vulnerability assessments.
- ✓ Collaborate with engineers and planners to retrofit or design new structures that can withstand climate-related stresses.
- ✓ Prioritize green and sustainable construction methods.

Representative from the City Health Office

Role:

- ✓ To ensure functionality of the Health Referral System

Responsibilities:

- ✓ To manage injuries and acute conditions.
- ✓ To prevent and control spread of communicable and non-communicable diseases

Representative from the Sangguniang Panlungsod Committee on Environment

Representatives from accredited civil society organizations (CSOs) and people's organizations (POs)

Other members as may be deemed necessary by the Chairperson

SECTION II. CLIMATE INFORMATION AND SITUATIONAL ANALYSIS

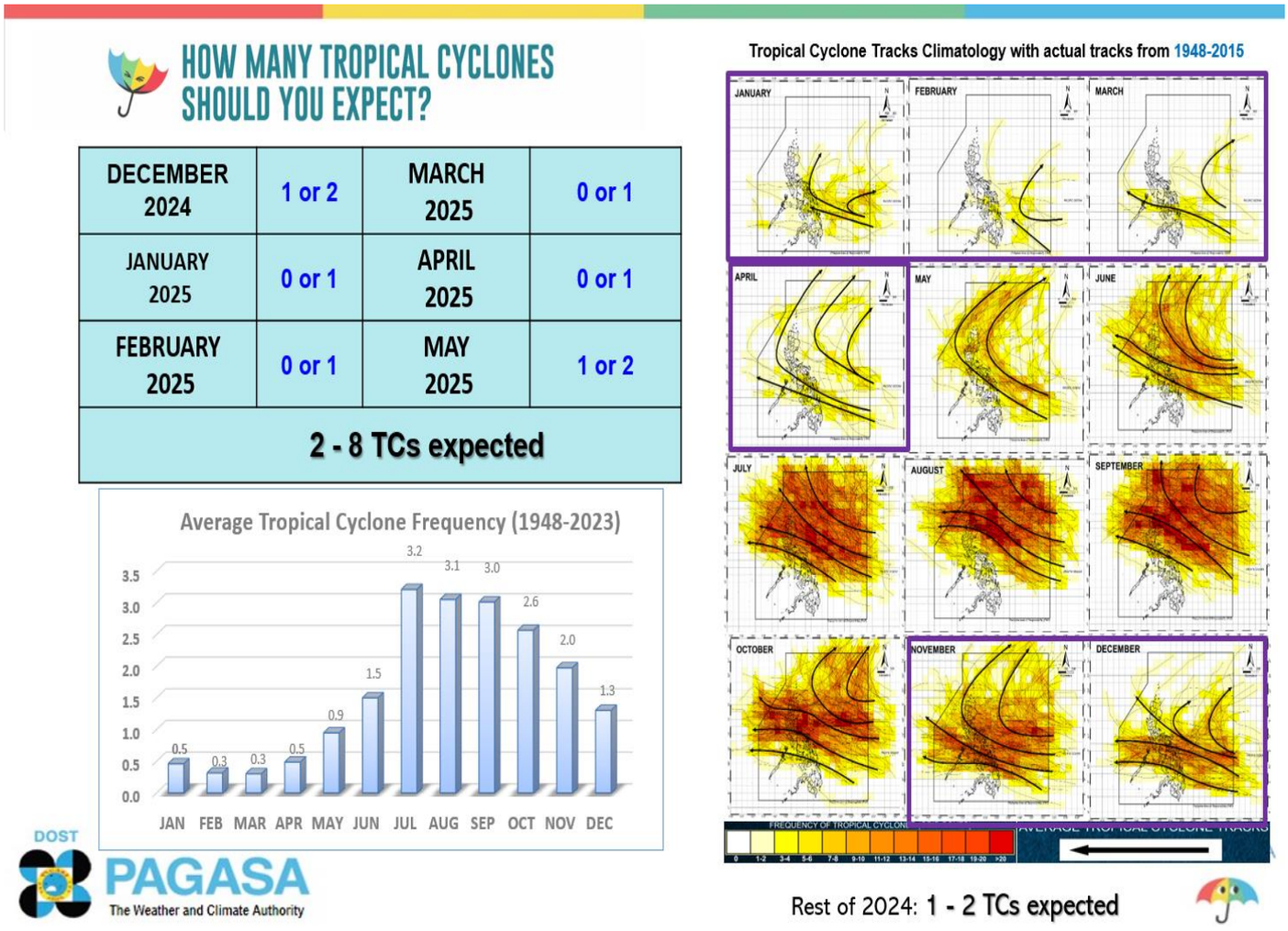
CLIMATE PROFILE

Climate Related Hazards and Its Impact to LGUs

Typhoons/Tropical Cyclones

More tropical cyclone (TCs) are entering the Philippine Area of Responsibility (PAR) than anywhere else in the world. With the average of 20 TCs in this region per year, with about 8 or 9 of them crossing the Philippines. The peak of the typhoon season is July through October, when nearly 70% of all typhoon develop.

Figure 9: Tropical Cyclone Tracks



Records of Previous Disasters

Hazard Events and Description/Date	Affected Barangays	Number of Casualties			Number of Affected Persons		No. of Houses Damaged		Damage to Properties (Php)					Source of Information
		Dead	Injured	Missing	Persons	Families	Totally	Partially	Infra	Agri	Insti	Private / Commercial	Total	
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
TYPHOON MILENYO	Whole Province	21	37			27,101			208 Million	234 Million				September 27, 2006
TYPHOON REMING	Whole Province	6	18	3										November 29, 2006
TYPHOON MINA	12 Municipalities, 68 Brgys									4,819,417.96			4,819,417.96	2007
HEAVY RAINFALL	12 Municipalities								20,635,350				20,635,350	February 27, 2008
TS ONDOY	Sorsogon									238,992			238,992	September 24-27, 2009
TYPHOON PEPING	Sorsogon													Sept. 30 – Oct. 3, 2009
TYPHOON MINA	Sorsogon City				15,594	2,582								November 2007
TYPHOON DANTE	Sorsogon City								200Million	200Million			400Million	May 2009
TYPHOON BEBENG	Sorsogon City					860								May 2011
TYPHOON CHEDENG	Sorsogon City					3846								May 2011
TYPHOON JUANING	Sorsogon City					486								July 2011

TYPHOON PEDRING	Sorsogon City					459								September 2011
TYPHOON GLENDA	Whole Province						8,352		380 Million	394 Million				July 2014
TYPHOON RUBY	Whole Province								1.2 Million	1.1 Million				December 2014
TYPHOON AMANG	Sorsogon								14.4 Million	6.9 Million				January 2015
TYPHOON CHEDENG	Sorsogon City													April 2015
TYPHOON DODONG	Sorsogon City													May 2015
TYPHOON NONA	Whole Province								2.8 Million	60 Million				Dec 2015
TYPHOON NINA	Sorsogon				39,177	7,362								December 22 – 27, 2016
TROPICAL STORM URDUJA	Sorsogon													December 15-16, 2017

TROPICAL DEPRESSION USMAN	Sorsogon				154,068	24,178			20.8M	20.8M				December 27, 2018 – January 2, 2019
TROPICAL DEPRESSION AMANG	Sorsogon													January 19-22, 2019
Tail –end of cold Front	Sorsogon													January 24, 2019
TYPHOON TISOY	Sorsogon				58,723	17,800			735.23M	104.0M				December 1-3, 2019
TYPHOON URSULA	Sorsogon													December 23 – 25, 2019
TYPHOON AMBO	Sorsogon				122,078	31,372				3.7M				May 14-15,2020
TYPHOON OFEL	Sorsogon								26.0M	58.91M				October 14, 2020
TROPICAL CYCLONE QUINTA	Sorsogon				11,579	2,278								October 24-25, 2020
TYPHOON ROLLY	Sorsogon				10,555	37,442								November 1, 2020
TYPHOON ULYSSES	Sorsogon				12,173	2,666								November 10-11, 2020
TYPHOON AGATON	Sorsogon													April 11,2021
TYPHOON BISING	Sorsogon				579	176								April 19, 2021
TYPHOON DANTE	Sorsogon				6	2								June 2, 2021
TYPHOON JOLINA	Sorsogon				79	22								September 7,2021
TYPHOON MARING	Sorsogon													October 9, 2021

TYPHOON ODETTE	Sorsogon													December 14, 2021
TYPHOON KARDING	Sorsogon													September 25, 2022
TYPHOON PAENG	Sorsogon				3,542	1,175								September 2022

HAZARD PROFILES

A. Hydro-meteorologic Hazards

The following section will discuss the consequence analysis results for hydro-meteorologic hazards identified in the City of Sorsogon such as flooding and storm surge. The discussion will focus on the exposure of the population to these hazards.

Flood

Vulnerability to flooding can be influenced either by intense rainfall and/or sea level rise. Figure 10 cited the study conducted by Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) PRECIS, the projected climate change scenarios for the Province of Sorsogon relative to rainfall for 2020 and 2050 using the A1B scenario of the IPCC. With the projected increase in rainfall, the City is continuously exposed to flooding events. Typhoon Dante, with Warning Signal No. 1, brought intense heavy rainfall in the City within a short period of time but caused major destruction in infrastructure and agriculture with an estimated worth of Php200Million.

Figure 10: PAGASA projection

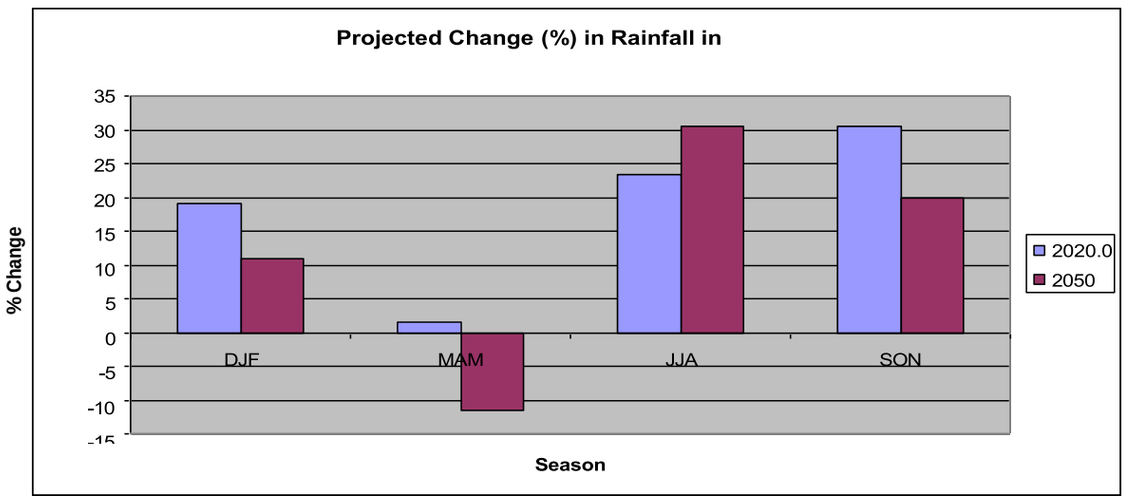


Figure 11: presents the sea level rise observations gathered by PINCCC in the five primary tidal gauge stations in the country including that in the Coast and Geodetic Survey Department (CGSD) of NAMRIA in Legaspi City, Albay. Given that Sorsogon City and Albay shares territory in Albay Gulf and faces the Pacific Ocean, sea level rise poses immense threat to almost all the barangays located in low-lying coastal areas, hence increasing the risk of many people to flooding as shown in Figure 12.

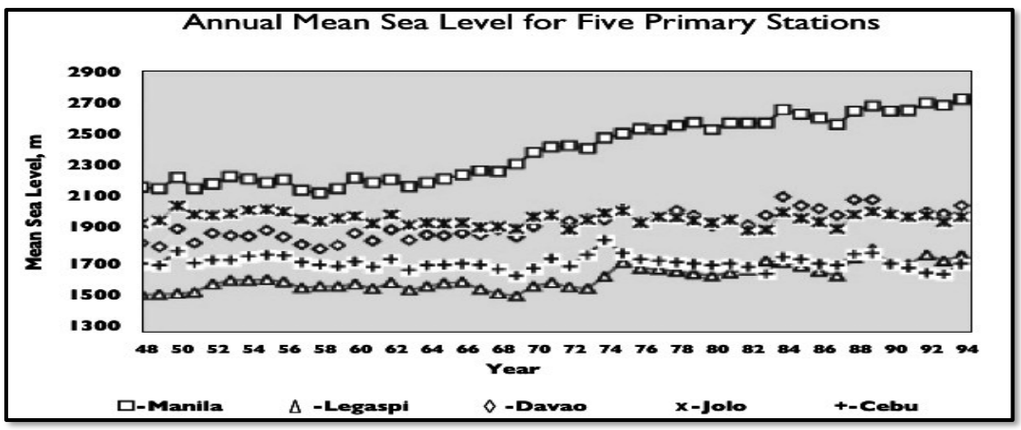
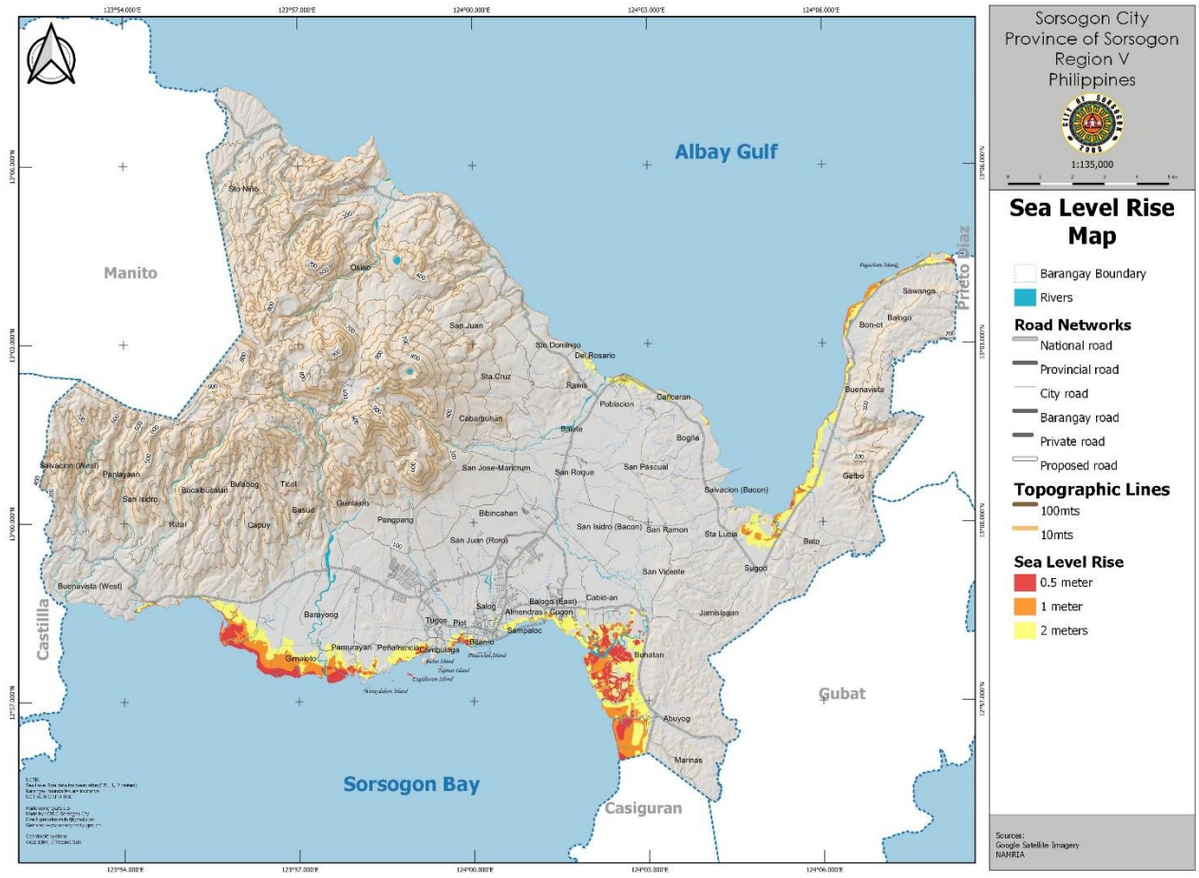


Figure 12: Map of Sea Level Rise (Source: CPDO)



Based from people's account, there are 9 barangays already affected by sea level rise shown in Table 3. Table 4 shows the list of flood-prone barangays in the City.

Table 3: Barangays Affected by Sea Level Rise (Source: CPDO)

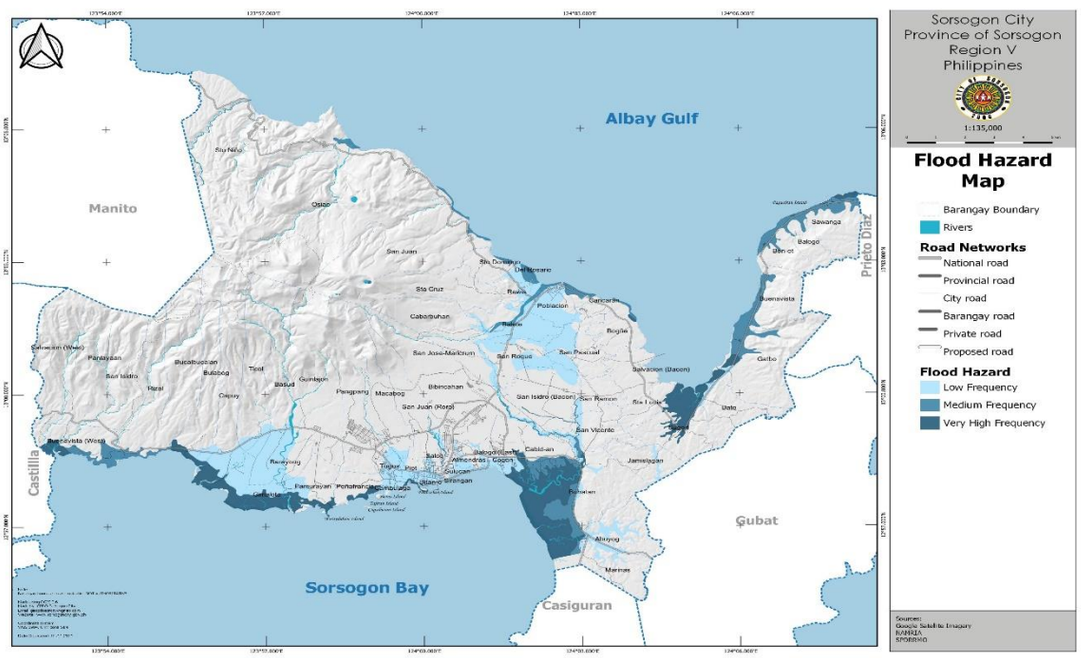
Name of Barangay/Village	Population	Land Area (has.)
Balogo	7,957	152.85
Bitan-O	3,308	19.20
Cabid-an	8,009	223.56
Cambulaga (urbanizing)	4,956	37.10
Piot	2,562	65.96
Sampaloc	4,594	12.58
Sirangan	2,271	4.96
Talisay	2,634	12.40
Poblacion	4,647	174.51
Total	38,593	703.12

Table 4: Barangays At Risk to Flooding (Source: CPDO)

HAZARD	AREA	
Flooding	**East/West Districts**	Population
	Basud	2,934
	Buhatan	3,859
	Burabod	2,205
	Capuy	2,608
	Gimaloto	1,029
	Salog	2,811
	Sirangan	2,271
	Talisay	2,634
	Sampaloc	4,594
	Piot	2,647
	Bitan-O	3,308
	Cambulaga	4,956
	Balogo	7,957
	Sulucan	592
	Bacon District	
	Poblacion	4,647
	Balete	2,880
	Buenavista	1,419
	Gatbo	2,460
	Osiao	3,083
	Sto. Niño	2,692

Below is the Flood Hazard Map of Sorsogon City, taking into consideration the barangay's topography and exposure to sea level rise.

Figure 13: Flood Hazard Map (Source: CPDO)



Storm Surge

The storm surge brought by Typhoon Sisang in November 1987 caused the death of more than 700 people in Sorsogon. With the City's geographical location, the 34 coastal barangays shown in Table 5 remains to be highly at risk to storm surges.

Table 5: List of Coastal Barangays affected by Storm Surge (source: CPDO)

EAST/WEST DISTRICT Coastal Areas		BACON DISTRICT Coastal Areas	
Barangay	**Population**	**Barangay**	**Population**
1. Abuyog	4,597	1. Bato	1,853
2. Balogo	7,957	2. Bogna	1,621
3. Bitan-o-Dalipay	3,308	3. Bon-ot	638
4. Bucalbucalan	2,566	4. Buenavista	1,419
5. Buenavista	2,033	5. Caricaran	2,595
6. Bulabog	2,487	6. Gatbo	2,460
7. Buhatan	3,859	7. Del Rosario	1,023
8. Cabid-an	8,009	8. Osiao	3,083
9. Cambulaga	4,956	9. Poblacion	4,647
10. Capuy	2,608	10. Rawis	1,649
11. Gimaloto	1,029	11. Salvacion	1,252
12. Pamurayan	2,328	12. Sta. Lucia	524
13. Penafrancia	2,076	13. Sto. Domingo	1,390
14. Piot	2,562	14. Sto. Nino	2,692
15. Rizal	3,618	15. Sawanga	1,494
16. Sampaloc	4,594	16. Sugod	2,180
17. Sirangan	2,271	---	
18. Talisay	2,634	---	
TOTAL	**63,474**	**TOTAL**	**30,520**

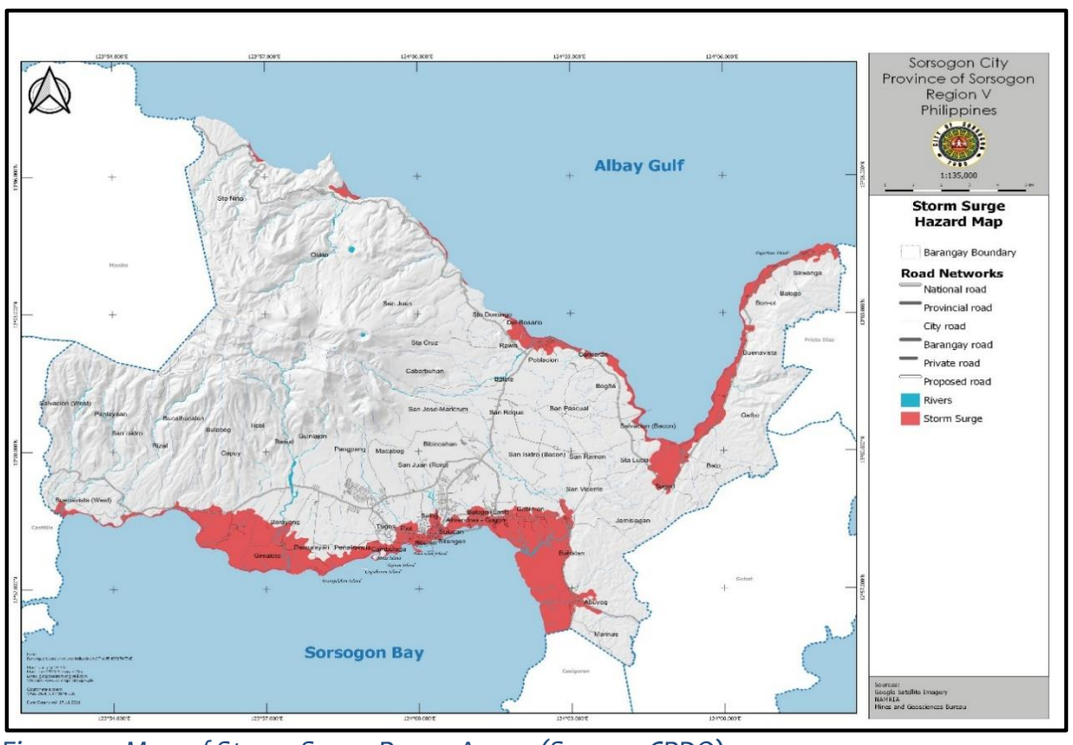


Figure 14: Map of Strom Surge Prone Areas (Source: CPDO)

Landslide

Incessant intense rainfall and/or earthquake can trigger soil erosion, mass movement or landslide. In 2009, Barangays Osiao and Sto. Niño in Bacon District, after a nonstop heavy rainfall brought by a Tropical Depression, caused massive soil erosion in the area.

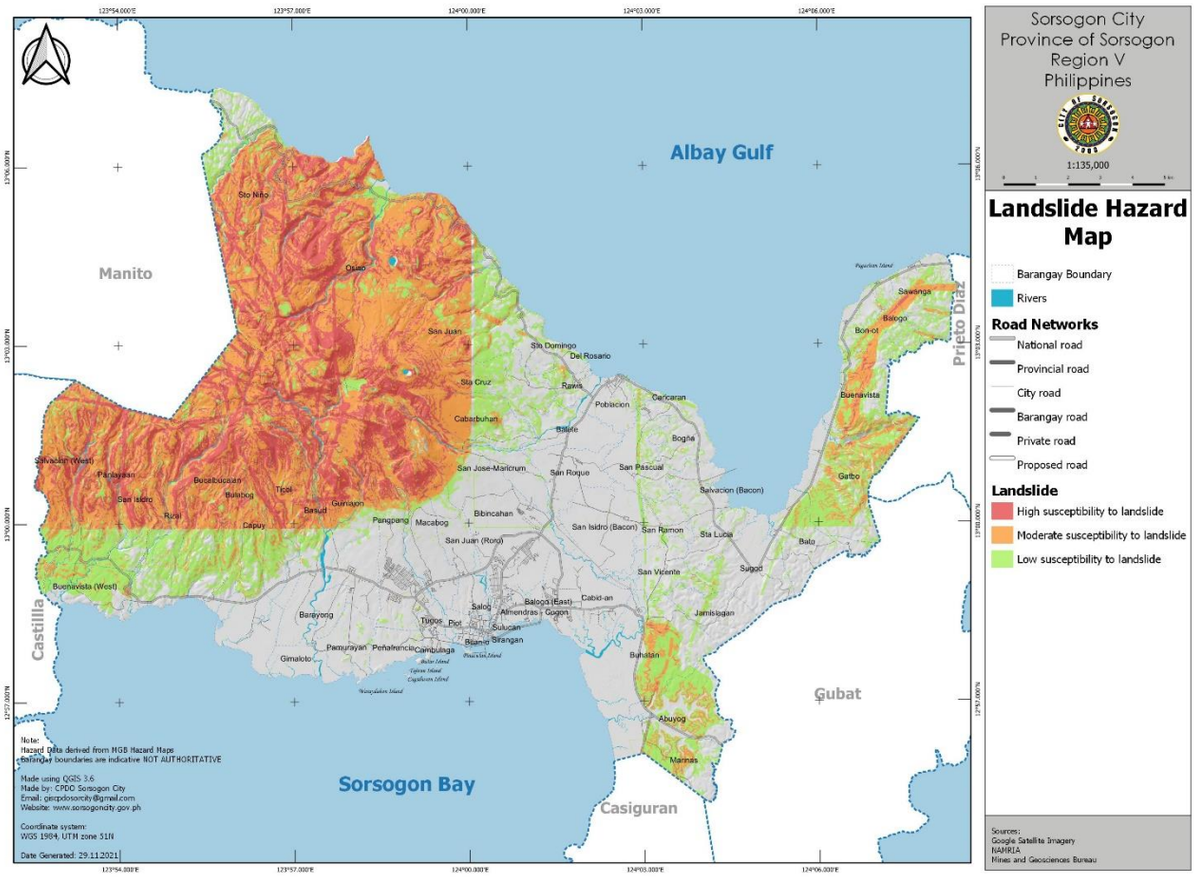


Figure 15: Map of Landslide Prone Areas (Source: CPDO) Table 6 shows the list of landslide-prone barangays in the City.

Table 6: Landslide-prone Barangays (Source: CPDO)

Hazard	Area	Total Population (2020)
Landslides	Osiao	3,083
	Sto. Niño	2,692
	Salvacion (West)	841
	Panlayaan	1,591
	San Isidro (West)	1776
	Rizal	3,618
	Buenavista (West)	2,033
	Bucalbucalan	2,566

B. GEOLOGIC HAZARDS

The following section will discuss the consequence analysis results for geologic hazards identified in the City of Sorsogon such as Tsunami and Liquefaction. The discussion will focus on the exposure of the population to these hazards.

Summary and Findings of Climate Change Vulnerability and Adaptation Assessment

Briefly, there are three (3) major causes of the vulnerability of Sorsogon City to Climate Change. The first (1) inescapable cause is the fact that climate change is global in nature and character. Climate change affects and impacts every nation and based from scientific projections island nations, is at the highest risk to climate induced hazards. The next one is the probability and sensitivity. Sorsogon City is a coastal city directly facing the west Pacific Ocean basin where 75% of world's typhoons originate, and as such, the City is very likely to be impacted by climate change hazards or stimuli, and the degree of the impact is very severe and severe as shown in Tables 7, 8 and 9. Lastly, the first two (2) causes are further exacerbated by socio-economic condition. The social condition of people in the City is a very critical factor because it greatly influences how people could possibly adjust or adapt to climate change impacts. Poverty defines the social condition of people. Poverty incidence of the Province which includes the City is placed at 41.3% according to the latest PSA report.

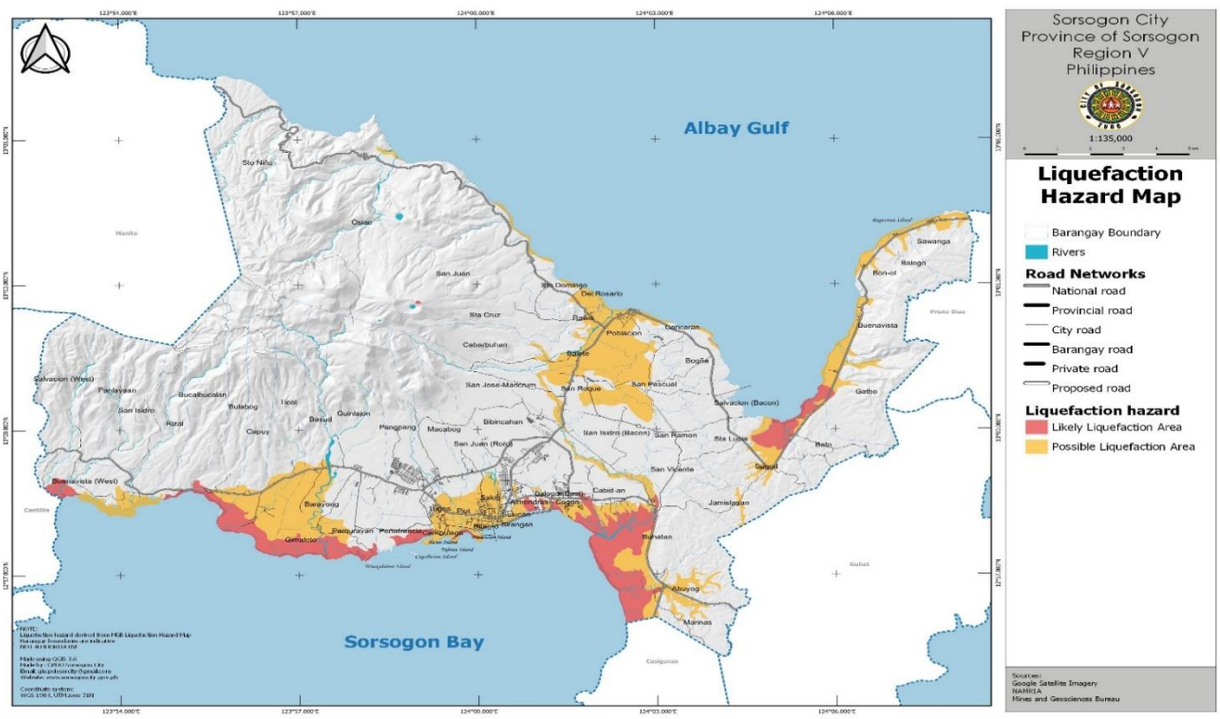
In 2007, according to the participatory climate change vulnerability and adaptation assessment (V&AA) initiated by UNHABITAT, the poverty incidence of the City was 43%. According to the same assessment, "the people's poverty situation is closely linked to the vulnerability of the City to natural hazards." Poverty therefore exacerbates the City's vulnerability to both natural and climate-induced hazards.

From the V&AA conducted in 2007, the different climate-related/induced hazards and risks to which the entire City is exposed were identified. Arranged according to risk ratings recently updated by the eLCCAP core team of the City, they are: increased rainfall, typhoon and sea level rise. Increased rainfall breeds flooding, landslide and erosion. The resultant hazards from typhoon are flooding, storm surge and strong wind. From sea level rise (SLR), permanent flooding and salinization were the identified resultant climate-induced hazards.

The findings of the V&AA that the City is exposed to flooding and storm surge are validated by the latest geo-hazard's maps provided by MGB-DENR. Besides, the same maps added other geologic hazards like liquefaction and ground subsidence, occurrence of which is very likely when triggered by climate hazards and risks. The tsunami hazard map from PHIVOLCS confirmed that the City is at risk not only to flooding and storm surge, but also to tsunami most likely to hit the 14 coastal barangays of the City as shown in Figure 16 below.

Figure 16: Map of Tsunami Prone Areas (Source: CPDO)

Figure 17: Map of Liquefaction Prone Areas (Source: CPDO)



Used as bases in the formulation of this Plan are the identified climate related/induced hazards resulting from the four (4) climate variables with their corresponding changes and projected impacts based from PAGASA climate projections together with the different climate hazards and risk appearing in the V&AA.

The PAGASA climate projections lent credence to the V&AA of the City. Except for extreme events triggered by increased number of warmer or hotter days having a temperature greater than 35°C and increasing number of days with less than 2.5mm rain, all other findings of V&AA Sorsogon City are consistent with that of PAGASA.

CLIMATE CHANGE PROJECTION

Temperature

Climate Information Risk Analysis Matrix (CLIRAM) of the projected seasonal change in mean temperature (in degrees Celsius) in the mid-21st century (2036-2065) for the Province of Sorsogon

Table 7

Projected Changes in Seasonal Temperature in the Mid-21st Century (2036-2065) for Sorsogon relative to 1971-2000							
Season	**Scenario**	**Range***	**Projected Change**		**Information about patterns of Change**	**Potential Impacts**	**Adaptation Option**
			Change in ℃	**Projected Seasonal Mean Temperature (℃)**			
December-January-February (DJF) **Observed baseline = 25.9 ℃**	Moderate Emission (RCP4.5)	Lower Bound	1.0	26.9			
		Median	1.2	27.1			
		Upper Bound	1.6	27.5			
	High Emission (RCP8.5)	Lower Bound	1.2	27.1	Increase in Temperature	Temperature related illnesses	strengthen monitoring & surveillance
		Median	1.5	27.4			
		Upper Bound	1.9	27.8			
March-April-May (MAM)	Moderate Emission (RCP4.5)	Lower Bound	1.0	28.4			
		Median	1.2	28.6		Drought	Climate Resilient agriculture practice
		Upper Bound	1.6	29.0			

Observed baseline = 27.4 ℃	High Emission (RCP8.5)	Lower Bound	1.4	28.8			
		Median	1.6	29.0	Increase in Temperature	Changing Agricultural Productivity	Crop diversity and rotation
		Upper Bound	2.0	29.4			
June-July-August (JJA)	Moderate Emission (RCP4.5)	Lower Bound	1.0	28.9			Rain Water harvesting and water recycling
		Median	1.2	29.1		Water shortage	
		Upper Bound	1.7	29.6			
Observed baseline = 27.9 ℃	High Emission (RCP8.5)	Lower Bound	1.4	29.3			
		Median	1.6	29.5	Increase in Temperature		
		Upper Bound	2.2	30.1			
September-October-November (SON)	Moderate Emission (RCP4.5)	Lower Bound Median Upper Bound	1.0 1.1 1.8	28.3 28.4 29.1			
Observed baseline = 27.3 ℃	High Emission (RCP8.5)	Lower Bound Median Upper Bound	1.3 1.5 2.2	28.6 28.8 29.5			

RAINFALL

Climate Information Risk Analysis Matrix (CLIRAM) of the projected seasonal change in total rainfall (millimeters) in the mid-21st century (2036-2065) for the Province of Sorsogon

Table 8

Season	Scenario	Range*	Projected Change		Projected Seasonal Rainfall Amount (mm)	Information about patterns of Change	Potential Impacts	Adaptation Option
			Percent (%)	Rainfall amount (mm)				
December-January-February (DJF) **Observed baseline = 958 mm**	Moderate Emission (RCP4.5)	Lower Bound	1.3	12.7	970.8			
		Median	10.2	97.5	1055.6			
		Upper Bound	31.6	302.8	1260.9			
	High Emission (RCP8.5)	Lower Bound	-2.2	-21.5	936.6		Flooding	Improve drainage system
		Median	13.1	125.3	1083.4	Increase in Rainfall	outbreak and spread of water-based and vector-borne diseases	strengthen disease surveillance
		Upper Bound	36.0	344.9	1303.0		Changing Agricultural Productivity	Crop diversity and rotation
March-April-May (MAM)	Moderate Emission (RCP4.5)	Lower Bound	-0.2	-0.7	427.2		Water shortage	Rain Water harvesting and water recycling
		Median	6.9	29.7	457.6	Decrease in Rainfall	Drought	Climate Resilient agriculture practice
		Upper Bound	18.4	78.9	506.8		Forest fires	Enhance Monitoring
	High Emission (RCP8.5)	Lower Bound	4.5	19.2	447.1			
		Median	7.3	31.1	459.0		Changing Agricultural Productivity	Crop diversity and rotation

Observed baseline = 428 mm		Upper Bound	18.3	78.4	506.3			
June-July-August (JJA) **Observed baseline = 660 mm**	Moderate Emission (RCP4.5)	Lower Bound	-20.7	-136.4	524.0		water shortage.	Rain Water harvesting and water recycling
		Median	-7.9	-52.0	608.4	Decrease in Rainfall	Drought	Climate Resilience agriculture practice
		Upper Bound	2.1	14.1	674.5		Forest fires	
	High Emission (RCP8.5)	Lower Bound	-23.6	-155.7	504.7			
		Median	-4.0	-26.5	633.9		Changing Agricultural Productivity	Crop diversity and rotation
		Upper Bound	5.8	38.6	699.0			
September-October-November (SON) **Observed baseline = 974 mm**	Moderate Emission (RCP4.5)	Lower Bound	-5.1	-50.0	923.6		water shortage.	Rain Water harvesting and water recycling
		Median	-1.8	-17.0	956.6	Decrease in Rainfall	Drought	Climate Resilience agriculture practice
		Upper Bound	1.1	10.3	983.9		Forest fires	
	High Emission (RCP8.5)	Lower Bound	-14.4	-140.6	833.0			
		Median	-1.2	-11.4	962.2		Changing Agricultural Productivity	Crop diversity and rotation
		Upper Bound	9.4	91.8	1065.4			

Climate Risk Analysis

Table 9

FACTORS TO CONSIDER	VARIABLES	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Annual weather systems	Habagat												
	Thunderstorms												
	Amihan												
Usual climate related impact	Farm flooding and intense rainfall												
	Strong winds												
	Drought / Dry Spell												
	Pest Infestations												
Local Agri activities that may be affected	Rice	DRY SEASON					WET SEASON						
	Coconut												
	Pili												
	Vegetables												
	Livestock and Poultry												
	Fresh Water												
	Brackish water												
	Seawater (Bacon) - (Mariculture)												
	Sea water (Sorsogon Bay)												
Climate related risks	Rice and other crops	Typhoon destroys standing crops during flowering and ripening stage especially if varieties are susceptible to lodging											
	Coconut												
	Pili												
	Vegetables												
	Livestock and Poultry	Sudden change of weather condition affects the productivity of animal breeding and new diseases emerge											
	Fresh water												
	Brackish water	During dry spell - culture species are affected											
	Sea water (Bacon - Mariculture)												
	Seawater (Sorsogon Bay)	Long dry spell and then sudden fall of heavy rain can cause algal bloom (may result to red tide)											

ADAPTIVE CAPACITY

Assessing adaptive capacity is essential for developing an effective local climate change action plan that meets community needs. This assessment evaluates the ability of human and ecological systems to cope with and respond to the risks posed by climate change and variability. It also involves identifying sectors vulnerable to climate-related events such as typhoons, floods, and tsunamis, based on historical and current climate patterns. Furthermore, it examines the factors influencing the vulnerability of households, communities, and other sectors facing climate-related challenges.

In the City of Sorsogon, adaptive capacity is largely dependent on regular government services, programs, national policies, and support from civil society organizations. Existing climate risk management efforts are primarily mandate-driven, with a focus on social services and disaster response measures aimed at mitigating the effects of climate-related events. This is evident in the city's structural interventions, such as flood control systems. Private sector participation remains limited, mainly confined to the infrastructure sector, leading to a strong reliance on locally sourced resources and external aid. Given that climate change impacts vary by context, adaptation measures must also be tailored accordingly.

A city's resilience is determined by the stability of its urban system and the ability of social agents to anticipate and respond to changes and stressors, despite constraints in resource availability and support systems. Urban resilience refers to a city's capacity to endure and adapt to climate change impacts and natural hazards while maintaining essential functions. At the urban scale, resilience depends on preserving critical assets and ensuring access to services that sustain the well-being of residents. This is especially crucial for populations lacking financial, material, and social capital, which are essential for buffering shocks and facilitating long-term adaptation. Urban populations rely on interconnected systems—including infrastructure, ecosystems, institutions, and knowledge networks—that are both shaped by and support social agents from both the public and private sectors. The Overseas Development Institute further elaborates on the significance of this local-level capacity.

ADAPTIVE CAPACITY AT THE LOCAL LEVEL

ADAPTIVE CAPACITY AT THE LOCAL LEVEL	
Characteristics	Features that reflect a high adaptive capacity
Asset Base	Availability of key assets that allow the system to respond to evolving circumstances
Institutions and Entitlements	Existence of an appropriate and evolving institutional environment that allows fair access and entitlement to key assets and capitals
Knowledge and Information	The system has the ability to collect, analyze and disseminate knowledge and information in support of adaption activities
Innovations	The system creates an enabling environment to foster innovation, experimentation and the ability to explore niche solutions in order to take advantage of new opportunities
Flexible, Forward Looking, Decision Making and Governance	The system is able to anticipate, incorporate and respond to changes with regards to its governance, structures and future planning

Building knowledge to inform decisions of both the public and private sector is also limited to information, education campaigns activities. Recently, there has been a deliberate effort to improve decision parameters through the use of risk data generated by national agencies and some development organizations. As for governance, typical processes seem to apply like usual planning tasks and regulation. In terms of hazard, the city is most keen on averting the impacts of flooding, drought and typhoons. Storm surge and sea level rise, on the other hand, are remote events to the city, and are not perceived to be as pressing as floods or typhoons and drought. This explains the minimal actions and investments on these hazards. The city's lessons from past typhoons and flooding events have improved risk reduction responses, as seen in the foregoing measures that it has been pursuing.

ADAPTIVE CAPACITY AND MEASURES

Adaptation/Mitigation Measures + Adaptive Capacity

HAZARDS	MAJOR IMPACTS	ADAPTIVE CAPACITY	MEASURES	
			ADAPTIVE	MITIGATION
Flooding due to extreme weather events *(increased rainfall)*, Typhoons/TCs	▪ Destruction of properties, shelter, infrastructures, embankment and other facilities ▪ Loss of lives, displacement of families, disaster trauma - emotional breakdown and suicidal tendencies syndrome incidence ▪ Increased maintenance, repair and replacement of residential, commercial and industrial buildings resulting to increase in preventive expenditures and higher maintenance costs, thus, reduction in capacity of businesses to operate due to property damage leading to increased poverty, increase in demand for basic needs, higher incidence of malnutrition and increase in crime rates	▪ Efforts to address the Climate Change related drivers and impacts is on the context of Disaster Risk Reduction ▪ The enacted Climate Change Act and other related laws can be a startup process to address Climate Change ▪ Updated DRRM Plan ▪ Strengthened Local/City Disaster Risk Reduction and Management Office (DRRMO), emergency responders' area organized down to barangay level	▪ Improve infrastructure design such as the use of climate change resilient materials, stronger roof fixing connections, installation of essential vulnerable equipment on higher elevations and designing aerodynamically efficient structures ▪ Adopt formal asset management approach that can effectively consider climate inputs to maintain buildings (least cost adaptation strategy e.g. retrofitting) ▪ Locating major infrastructures away from areas considered	▪ Promotion of green buildings such as buildings with energy efficient designs (natural lighting and ventilation) ▪ Use of locally sourced energy (e.g. solar) to minimize transmission infrastructure ▪ Encourage use of green materials in construction ▪ Adopt alternative and more efficient construction methods e. prefabrication and off-sit construction ▪ Promotion of electric vehicles ▪ Anti-smoke belching campaign ▪ Encourage fuel switching e.g. conversion to

Coastal Land Inundation due to Increased Rainfall, Sea Level Rise (SLR), Storm Surge due to	▪ Hampered economic activities leading to disruption of livelihood resources (crops, livestock, poultry, etc.) ▪ Uncoordinated and poor delivery of health services/poor health system ▪ Hampered school activities, decreased educational performance ▪ Reduction in available water for consumptive use-potable, commercial and industrial and increased run-off and pollution of freshwater sources, thus affecting the quality of drinking water and impact to public health, water contamination and water pollution leading to increase incidence of diarrhea and food poisoning, occurrence of incidence of vector bourne and communicable diseases (e.g. dengue, malaria, leptospirosis etc.) ▪ Increased occurrence of waste slide/wastewater flows especially in ill- designed and operated landfill garbage dump sites due to increased rainfall intensities ▪ Accelerated deterioration and	▪ Presence of basic communication channels and infrastructures ▪ Adequate manpower and time to plan and implement adaptation actions (technical people, trained responders, health and education facilities etc.) ▪ As a form of adaptation, Zoning Ordinance, CLUP is on-going revision and development to include the regulation of building constructions in flood prone areas (min. 1-meter height elevation, Green Building etc.) ▪ Diligent and strict implementation of a Climate Change compliant land use and risk reduction policies ▪ Upland Community Organizing Program ▪ Urban Greening Program ▪ Intensified campaigns on waste segregation ▪ Solid Waste Action Plan ▪ Early warning systems for severe weather, including advisories on storm surge probabilities, as well as planning for and developing resilient livelihoods where traditional fishing/ agriculture are no longer viable	most vulnerable to climate stress ▪ Maintain livelihood opportunities and diversify options ▪ Reduce risks to human health and safety ▪ Mobilize and unite all stakeholders, lead in planning and management ▪ Develop and implement flood plain zones ▪ Promote best practices in solid waste mgmt e.g. reduction, reuse, recycling. ▪ Locating and improve major wastewater infrastructure away from vulnerable areas/ design to account for climate change e.g. increase design flows ▪ Strictly enforce environmental laws ▪ Implementation of proper solid waste management program in order to minimize waste dumping	compressed natural gas (CNG) and bio-fuels ▪ Encourage non-motorized transport i.e. cycling and walking ▪ Promote alternative energy sources that will minimize need for transmission and distribution infrastructure

Typhoons/ TCs	depreciation of assets due to highly variable climate ▪ Destruction of production areas, mangrove areas resulting to loss of tourism, recreation, and coastal habitats ▪ Increased rainfall could also wash more agricultural fertilizer and municipal sewage into coastal waters, creating more low-oxygen "dead zones" in major coastal waters ▪ Sea level rise is highly likely in a changing climate, and	▪ Proactive planning (short- and long-term adaptation measures) in attaining poverty eradication, sufficient nutrition and secure livelihoods goals ▪ River desiltation Project ▪	and have properly constructed and operated landfill facilities ▪ Reserve local sites to accommodate waste sorting, recycling and reuse, away from climate change vulnerable areas ▪ Improve drainage infrastructure design such as accounting for increased rainfall intensities in design flow calculations ▪ Develop locally specific flood protection programs ▪ Strengthen governance frameworks for coastal adaptation	

CLIMATE CHANGE KEY DEVELOPMENT ISSUES

HAZARDS	CLIMATE CHANGE ISSUES & CONCERNS	SECTORS/ AREA	OBJECTIVES
Flooding, TC, SLR, SS, strong wind	1. Existing facilities and infrastructures not at par with the structural standard and adaptive to CC hazards	Infrastructure Social	To adapt green building technology in infrastructure projects
Flooding, Drought, TC, SLR, SS	2. Prevalence of malnutrition cases due to reduction of livelihood activities	Social Economics	To provide sustainable nutrition program
Flooding, TC, SLR, SS	3. Dislocation of settlements/dwellings	Social Infrastructure	To provide the affected populace relocation site and settlement adaptive to CC and DR
Flooding, Drought, TC, SLR, SS	4. Health problems (increase of incidence of vector borne diseases e.g. dengue, malaria, leptospirosis, pneumonia etc., incidence of dengue, malaria, COPD, emphysema, bronchial asthma, emotional trauma and other diseases	Social	To provide prompt accessibility to health services and facilities
ALL	5. Passive participation of the community and the vulnerable sectors in the issues of CC and DRRM	Social	To ensure and enhance active participation of all sectors and the community especially vulnerable groups in LGU governance, planning, implementation, monitoring and evaluation of CC and DRRM issues
ALL	6. Awareness on Climate Change only confined within a few officials of the City government and community leaders	Social	To increase and intensify awareness of the community especially the vulnerable groups in concerns relative to CC and DRRM
ALL	7. Political will is always an obstacle in implementing bigger adaptive measures. Some officials, leaders and service providers stick on to uncertain and inappropriate decisions in resolving issues relative to CC and DRRM	ALL	To promote pro-active and responsive governance in managing DRRM and CCA issues
ALL	8. Increasing demand for services and utilities including facilities	Social Infrastructure	To provide and make available the needed services and facilities to respond and minimize the impacts of disasters and CC related hazards and vulnerability
ALL	9. Source of livelihood impeded	Social Economics Infrastructure	To provide alternative source of income to populace affected by CC hazards

SECTION III: OBJECTIVES OF THE PLAN

SORSOGON CITY'S VISION AND DEVELOPMENT THRUST

Sorsogon City has redefined its vision to integrate climate change considerations into its development path. The city aspires to be:

"A model city in climate change adaptation and disaster risk resilience, fostering a content, empowered, and values-driven society that promotes socio-economic growth while respecting nature's limits through a genuine commitment to good governance."

DEVELOPMENT PRIORITIES

Sorsogon City is committed to advancing sustainable growth through the following key focus areas:

- **A strategic sub-regional hub** for the Bicol Region, serving as an administrative, commercial, and educational center for the province.
- **A thriving agricultural production center,** specializing in coconut, high-value crops, and marine products, complemented by agro-industrial support.
- **A premier alternative tourism destination,** offering diverse experiences such as beach and diving tourism, mountain resorts, hiking, biking, climbing, and agri-tourism.

GOAL

Sorsogon City's **Local Climate Change Action Plan (2025-2027)** aligns with the **National Climate Change Action Plan (2011-2028)** to build climate resilience. The overarching goal is:

"To enhance the adaptive capacities of communities—especially women, vulnerable sectors, and natural ecosystems—while maximizing climate change mitigation opportunities, ensuring gender-responsive and rights-based sustainable development."

The specific objectives to be pursued per sector are as follows:

SOCIAL SECTOR (HEALTH and EDUCATION)

1. To introduce climate-resilient health programs;
2. To strengthen educational capacities of local communities

ECONOMIC SECTOR (AGRICULTURE AND TOURISM)

1. To strengthen livelihood opportunities;
2. To increase food production;
3. To protect prime agricultural lands.

INFRASTRUCTURE AND LAND USE SECTOR

1. To protect the coastal communities against coastal flooding

ENVIRONMENT SECTOR (FORESTRY, BIODIVERSITY, ENERGY)

1. To lessen greenhouse gas emission;
2. To minimize biodiversity degradation;
3. To protect and enhance environmental assets.

INSTITUTIONAL SECTOR (PEACE AND ORDER AND DRR)

1. To protect the coastal communities against coastal flooding and storm surges;
2. Minimize disaster impact to people and damage to physical development.

STRATEGIES, POLICIES AND PROGRAMS, PROJECTS AND ACTIVITIES (PPAS)

ADAPTATION AND MITIGATION OPTIONS

To align this Plan to the National Climate Change Action Plan (NCCAP), the priority actions appearing the NCCAP provided guidance in the identification of appropriate adaptation and mitigation measures. Consistent with the rationalized planning system prescribed by DILG at all LGU levels, the traditional development sectors including the different program areas/systems in local governance were also made reference in the identification of applicable and implementable adaptation and mitigation actions and initiatives reflected in the following Plan.

Adaptation And Mitigation Options (Proposed Interventions)	Hazards	Sectors	NCCAP Priority Responded
Where space allows, promote greening of residential surroundings (Urban greening)	Extreme weather events	Environmental Development	Ecological and Environmental Stability
Conduct landscaping/greening of public parking areas/spaces	Extreme weather events	Environmental Development	Ecological and Environmental Stability
Enact and implement an Ordinance encouraging the use of coolant additive for gasoline and diesel engines or increasing the engine radiator's water capacity to improve cooling system; promotion of electronic vehicles (E- bike and E- jeepney)	Extreme weather events	Institutional Development	Ecological and Environmental Stability
Enact and implement an Ordinance encouraging families/ households to install solar-powered lighting system for economy and reduction on reliance to fossil generated electric power	Extreme weather events	Institutional Development	Sustainable Energy
Modify/retrofit in floodplains and coastal barangays local critical infrastructures to withstand floods and for coastal inundation	Extreme weather events	Infrastructure Development	Human Security

Formulate Contingency Plan for severe and frequent flooding	Extreme weather events	local planning	Human Security
Conduct dredging of natural waterways and construction of additional drainage canals	Flooding/ landslides/ground subsidence/ mudflow	Infrastructure Development	Ecological and Environmental Stability
Organize the City Solid Waste Management Board through EO or SP Resolution	Extreme weather events	Environmental Development	Ecological and Environmental Stability
Develop and implement Solid Waste Management Plan (RA 9003)	Extreme weather events	Environmental Development	Ecological and Environmental Stability
Implement the Material Recovery Facility (MRF) program especially in floodplain barangays	Extreme weather events	Environmental Development	Ecological and Environmental Stability
Provide standby motorized bancas for emergency evacuation of residents located in seasonally flooded barangays	Extreme weather events	Social Development	Human Security
Install Automatic Rain Gauges (ARG)/water level sensors in flood prone barangays and conduct community IEC on ARGs in coordination	Extreme weather events	Social Development	Human Security and climate friendly service
Installation of Tsunami sensor at the Bacon area	Extreme weather events		Human Security and climate friendly service
Integrate flood prevention and mitigation measures in all local development plans such as CLUP, CDP, Tourism Plan, Solid Waste Management Plan, Health Plan, Education Plan, ELA, etc.	Extreme weather events	Institution al Development	Human Security
Institutionalize non-structural and structural mitigation measures like reforestation, riverbank stabilization and construction of concrete barriers	Extreme weather events	Infrastructure Development	Ecological and Environmental Stability

Conduct community quarterly river and creek clean-up activities	Extreme weather events	Institution al Development	Ecological and Environmental Stability
Pass and implement an Ordinance prohibiting settlements in all areas identified by MGB-DENR as geologically hazardous based from latest geo-hazard maps	Extreme weather events	Institution al Development	Human Security
Clearing of distribution lines; Ensure power reliability and sustainability	Extreme weather events	Economic Development	
Deployment of sufficient number of PNP personnel at affected areas to maintain peace and order	Extreme weather events	Social Development	
Construct/reconstruct damaged public buildings considering the capacity of buildings to withstand wind load, gustiness and velocity (under worst case scenario)	Extreme weather events	Infrastructure Development	Human Security
Construct all weather Learning and Public Use School buildings (LAPUS)	Extreme weather events	Infrastructure Development	Human Security
Ensure that Barangay Emergency Response Teams are able to respond timely and effectively; regular simulation exercises/drills	Extreme weather events	Social Development	Human Security
Develop Emergency Response Manual to ensure that all response activities are done with coordination, effectiveness and timeliness	Extreme weather events	Social Development	Human Security
Provide safe evacuation area for livestock's and poultry	Extreme weather events	Infrastructure Development	Food Security

Conduct orientation training on Typhoon Tracking in coordination with PAGASA- DOST, and on basic Incident Command System (ICS) in coordination with OCD5 for BDRRMC members	Extreme weather events	Institution al Development	Knowledge and Capacity Development
Develop and implement Storm Surge Contingency Plan for coastal barangays	Extreme weather events	Institutional Development	Human Security
Develop and implement Integrated Coastal Management Plan 'Ridge to Reef' through an ordinance	Extreme weather events	Institutional Development	Ecological and Environmental Stability
Develop and implement Water Conservation Plan	Extreme weather events	Institution al Development	Human Security and water sufficiency
To ensure food sufficiency, start planting Adlai Seed (Coix seed), a grain bearing tropical drought resistant plant that can be a substitute to rice and corn and other indigenous crops (Namo, uraro, galiang, ube, burot)	Extreme weather events	Economic Development	Food Security
Start planting Less water/drought, dry seeded varieties as PSB Rc16; PSB Rc24; PSB Rc70; UPL Ri7 § UPL RI5	Extreme weather events	Economic Development	Food Security
Encourage planting of a drought resistant fruit, the dragon fruit	Extreme weather events	Economic Development	Food Security
To promote water holding capacity of the soil, promote organic farming aside from the potential of organic farming to reduce GHG emission	Extreme weather events	Economic Development	Food Security
In coordination with DA, conduct training on vermiculture for farmers for production of organic fertilizer	Extreme weather events	Economic Development	Knowledge and capacity development

To beat the scarcity of water for agriculture, encourage farmers to shift to the production of HVCs requiring shorter production cycle in barangays where prolonged dry spell is regularly observed	Extreme weather events	Economic Development	Food Security
Enroll farmers to participate in the Climate Resiliency Field School (CRFS)	Extreme weather events	Institution al Development	Knowledge and capacity development
Plant early maturing rice varieties or plant crops requiring less water	Extreme weather events	Economic Development	Food Security
Develop and implement Integrated Pest Management Program for agriculture sector	Extreme weather events	Institution al Development	Food Security
City Ordinance requiring business establishment s not covered by local water district to present water rights certificates prior to the application or renewal of business permits	Extreme weather events	Institution al Development	Water Sufficiency
Integrate drought mitigation and adaptation measures in the CDP and Annual Investment Program	Extreme weather events	Institution al Development	Food and Human Security
Implementation of special social services to the elderly under RA9994 to PWDs under RA1995 including children/special children and women	Extreme weather events	Institution al Development	Human Security
Propagation of heat resilient livestock like cows/other animal breeds resilient to intense heat	Extreme weather events	Economic Development	Human Security
Organize farmers into marketing cooperatives for a better return of farming investment	Extreme weather events	Institution al Development	Human Security

Enact and implement an Ordinance granting special scholarship program for the poor but deserving children of farming households living below poverty threshold per PSA standards, giving priority to the hotspot barangays	Extreme weather events	Social Development	Human Security
For highly vulnerable farmers and fisher folk, provide off- farm employment or other livelihood activities where possible	Extreme weather events	Social Development	Food and Human Security
Reduce consumption of non-food items and avoidance of vices and unnecessary expenditures and teaching people the basics of home economics	Extreme weather events	Social Development	Food and Human Security
Installation of solar powered irrigation system for vegetable production	Extreme weather events	Economic Development	Food and Human Security
Rehab and improve existing irrigation facilities	Extreme weather events	Economic Development	Food and Human Security
Repair of mechanical flatbed dryer	Rainfall	Economic Development	Food and Human Security
Desalination - processing of salt water into freshwater	Rainfall	Economic Development	potable water sufficiency
Bio sand filter installation	Rainfall		potable water sufficiency
Passage of a Municipal Ordinance regulating extraction of ground water for irrigation or industrial purposes	Rainfall	Economic Development	Water sufficiency
Implement Small Water Impounding Project (SWIP)	Rainfall	Economic Development	

Rehab and improve existing irrigation facilities	Rainfall		water sufficiency
Rain harvesting by installing rain collectors	Rainfall		agriculture and household
Implement Upland Reforestation Program	Rainfall	Environmental Development	Ecological and Environmental Stability
Irrigation (water) rationing for agriculture during drought period	Rainfall	Institution al Development	Food Security
Organize community- based water associations to manage water supply and local water resources	Rainfall	Institution al Development	Water Sufficiency
Passage of an Ordinance regulating and imposing fees for abstraction of ground water for domestic, commercial, livestock, recreational, irrigation or industrial purposes pursuant to PD 1067	Rainfall	Institution al Development	Water Sufficiency
Develop and implement forest fire prevention program	Rainfall	Environmental Development	Ecological and environmental stability
Document, share and institutionalize good Climate Change practices especially on water conservation	Rainfall	Institutional Development	Knowledge and capacity development
Conduct orientation training on the mainstreaming of CCA in barangay development plans	Rainfall	Institutional Development	Knowledge and capacity development
Conduct orientation training on climate change for LGU officials and employees	Rainfall	Institutional Development	Knowledge and capacity development
Conduct regular monitoring of precipitation projections released by PAGASA to help farmers adjust planting calendar	Rainfall	Economic Development	Water Sufficiency for Agriculture
In partnership with DOST, provide farmers with multi-scale climate forecasts for shifting of planting dates	Rainfall	Economic Development	Food Security

Develop and implement crop insurance program for vulnerable farmers	Rainfall	Economic Development	Food Security
Implement Responsible Parenthood Programs and RP RH Law	Rainfall	Social Development	Human and Food Security
Plant flood resistant rice varieties or crops resistant to flooding IR 64; Rc18; PSB Rc 76H; and IR 42	Rainfall		Food Security
implement climate smart agriculture program /climate resiliency field school including organic agriculture	Rainfall	Economic Development	Food Security
Establish farmers' and fisher folk field school to demonstration best climate adaptation practices	Rainfall	Institutional Development	Knowledge and capacity development
Practice silage making	Rainfall	Economic Development	Livestock food security
Capability skills training other than fishing and farming	Rainfall	Institution al Development	Knowledge and Capacity Development
Provide extension service and agricultural support to farming and fishing communities most likely vulnerable to climate change hazards	Rainfall	Economic Development	Knowledge and capacity development
Provide seed capital or access PSF for the implementation n of CCA programs/ projects for farmers and fisherfolk	Rainfall	Economic Development	Food Security and Human Security
Provide climate change risk transfer mechanism for agriculture through crop insurance	Rainfall	Economic Development	Food Security and Human Security

provision of palay sheds, mechanical drivers, evacuation centers, shed houses for animals during emergencies	Rainfall		Ecological and Environmental Stability
Enact an Ordinance requiring floor elevation of residential houses including public buildings and facilities in flood prone areas exceeding the average observed flood level based from average decadal recurrence or return period	Rainfall	Institution al Development	Human Security
Use of water-resistant construction materials for residential houses and public buildings in flood prone and recurrently flooded areas	Rainfall	Infrastructure Development	Human Security
Regular Dredging of rivers, creeks and estuaries	Rainfall	Environmental Development	Ecological and Environmental Stability
Conduct regular IEC on vector-borne diseases	Rainfall	Social Development	Human Security
Acquisition of water purifier	Rainfall	Social Development	
Install in strategic areas/cluster centers water purification stations to ensure supply of drinking water	Rainfall	Social Development	Human Security and Water Sufficiency
Conduct regular monitoring and surveillance of water-borne diseases	Rainfall	Social Development	Human Security
Community IEC on Health and Sanitation	Rainfall	Institution al Development	Knowledge and capacity development
Develop system for rain water collection/rain water impounding project to address flooding and shortage of water	Rainfall	Institution al Development	Water Sufficiency for agriculture and fishery and Human Security

Install Automated Rain Gauges (ARG) and Automated Water Level Monitoring Stations in areas vulnerable to flash flooding in coordination with PAGASA- DOST under project NOAH	Rainfall	Social Development	Human Security
Regular conduct of water quality test, especially drinking water in flood prone and recurrently flooded barangays	Rainfall	Social Development	Human Security
Construction/repair of breakwater along riverine barangays	Rainfall	Infrastructure Development	Human Security
Conduct -bi- annual structural assessment of roads, bridges and flood control networks including evacuation centers and school buildings	Rainfall	Infrastructure Development	Human Security
Design and construction of flood resilient structures	Rainfall	Infrastructure Development	Ecological and Environmental Stability
Continue relocation of human settlements from flood prone areas to safe areas	Rainfall	Institution al Development	Human Security
Construction of elevated classrooms in barangays affected by flooding caused by sea level rise	Rainfall	Infrastructure Development	Human Security
Installation of landslides EW devices (ARGs/Indigenous landslides EW devices) in identified landslides prone areas	Rainfall	Environmental Development	Human Security
Installation of landslides control structures (concrete barriers) or non-structural measure like tree-planting in steep slopes based from the landslide's susceptibility map	Rainfall	Environmental Development	Human Security
Develop and implement Forest Protection Program	Rainfall	Environmental Development	Human Security

Formulate landslides Contingency Plan for mountain barangays	Rainfall	Social Development	Human Security
Conduct annual IEC on landslides preparedness, preferably before typhoon months in mountain barangays	Rainfall	Institution al Development	Knowledge and capacity development
In coordination with DepEd authorities in the mountain barangays, conduct IEC on landslides preparedness at elementary schools	Rainfall	Institution al Development	Knowledge and capacity development
Develop and implement a system monitoring slope excavation and illegal logging activities in the mountain barangays	Rainfall	Environmental Development	Ecological and Environmental Stability
Implement Zoning Ordinance in mountain barangays to mitigate landslide risks	Rainfall	Institution al Development	Ecological and Environmental Stability
Identify areas within the barangays where susceptibility to ground subsidence is high and conduct IEC on ground subsidence to increase public Awareness	Rainfall	Institution al Development	Knowledge and capacity development
Loss/disappearance of coastal land areas, damage to properties and structures	Sea Level	Environmental Management	Ecological and Environmental Stability
Damage to properties at sea and loss of lives	Sea Level		Human security and properties
Accumulation of all kinds of garbage and waste materials along coastlines/Clogging of canals	Sea Level		Ecological and Environmental Stability
Promotion of SALT resistant (NSIC Rc 182, Rc 184, Rc 186, Rc 188, Rc 190, Rc 290, Rc 292, Rc 294, Rc 296)	Sea Level		Food security

Develop coastal community solar-powered water purifier station funded by People's Survival Fund pursuant to RA1017, Identify and develop other source of water away from coastal areas	Sea Level		Human Security and Water Adequacy
Implement joint coastal resource management ordinance requiring formulation of an Integrated Coastal Resource Management Program	Sea Level		Ecological and Environmental Stability
Apply Sloping Agricultural Land Technology (SALT) to prevent/mitigate erosion	Sea Level	Social Development	Ecological and Environmental Stability
Relocation of informal settlers from hot spot barangays and installation of flood EW devices	Sea Level		Human Security
Provision of post disaster financial assistance to affected families	Sea Level		Human Security
Develop coastal Evacuation Plan	Sea Level		Human Security and Water Adequacy
Implement special social services for the elderly pursuant to RA 9994; Protective Services for Children, Women and PWDs	Sea Level		Human Security
Relocate coastal communities through socialized housing program with basic facilities	Sea Level		Human Security
Granting of scholarship program to poor but deserving students of poor families in coastal barangays	Sea Level		Human Security
Implement the Alternative Learning System (ALS) for OSY including PWDs in coastal communities	Sea Level		Human Security

Install tsunami signages in coastal barangays and develop tsunami evacuation plan	Sea Level		Human security
Conduct of expanded program for immunization for young elderly and pregnant women	Sea Level		Human Security
Develop and implement IEC Program for coastal communities	Sea Level	Institutional Development	Human Security
Formulation of Flood Contingency Plan for the hotspot and coastal barangays	Sea Level		Human Security
Implementation of the building code	Sea Level		Human Security
Introduce computer-based approach instruction in primary School in Coastal and remote poor Barangays	Sea Level		Knowledge Development and capacity building
Floor elevation of residential houses and public buildings in coastal barangays must be above the projected sea level increase of 40cm between 2020-2036according to IPCC-AR5.Construct ion of Seawall and River Control	Sea Level		Human Security
Flood Elevation of residential houses in low lying barangays must be 2.5mtrs per PAGASA recommendation	Sea Level		Human Security
Construction/ repair of higher and stronger seawalls	Sea Level		Ecological and Environmental Stability
Public buildings and structures are constructed in accordance with the National Structural Code of the Philippines (NSCP)	Sea Level		Ecological and Environmental Stability
Retrofitting of infra- structures in coastal Barangays	Sea Level		Human Security

Construction/repair/re- design of elevated flooring of public buildings in flood prone barangays	Sea Level		Human security
Develop and implement sea and land based/Alternative livelihood program	Sea Level	Economic Development	Human security and Food sufficiency
Apply climate- smart agriculture	Temperature	Economic, Social, Institutional Development	Food Security
Use customized SIMCLIM Software to determine the effects of climate variability and change over time and Space	Temperature	Institutional Development	Knowledge and capacity development
Formulate Contingency Plan for Severe and Frequent Droughts	Temperature	Institutional Development	Water Sufficiency and Food Security
Develop and implement local water management program in coordination with NIA	Temperature	Economic Development	Water Sufficiency
Develop and improve water sources in different districts	Temperature	Social Development	Water Sufficiency
Strict implementation of Fishery Code/Ordinance prohibiting illegal fishing/activities in city waters	Temperature	Institutional Development	Ecological and Environment al Stability
Conduct climate change orientation training for farming and fishing communities	Temperature	Institutional Development	Knowledge and capacity development
Introduce wholistic seaweed farming/program for coastal barangays	Temperature	Economic Development	Food Security
Coastal BLGUs to initiate regular coastal clean-up focusing on collection of plastic materials	Temperature	Institutional Development	Ecological and Environment al Stability
Promote tropical housing design using natural ventilation with green friendly	Temperature	Social Development	Human Security

materials/avoidance of heat conducting materials, IEC on prevention of heat stroke. Provision of Anti-hypertensive medication.			
Strict Implementation of health programs such as Control of diarrhea diseases. Communicable diseases and non-communicable diseases. Implement community health emergency preparedness s and response plan,	Temperature	Social Development	Human Security
capacity building of Health personnel on management of ERED. Implementation of Emerging and Reemerging Diseases PLAN	Temperature	Social Development	Human security
Conduct regular community clean-up like 4O'clock habit, destroying of breeding sites of mosquitoes. Training of BHW on Livetrap and Medtech/RSI on Entomology.	Temperature	Social Development	Human Security
Massive information educational campaign on rabies and snakebites. Provision of anti-rabies (pre and post exposure prophylaxis) and anti-venom. Procurement of anti-venom	Temperature	Social Development	Knowledge and capacity development and human security
capacity building on awareness in health programs to adjust in increasing temperature through massive Information, Education campaign and behavior change project and living a healthy lifestyle	Temperature		Knowledge and capacity development and human security
Encourage Exclusive breast feeding of infants for six months and onwards with complementary feeding and micronutrient supplementation for the first 1000 days of life. Support the National Deworming Month. (January & July)	Temperature	Social Development	Human Security

PRIORITIZED PPAS, INDICATORS, IOD/OPR, RESOURCES NEEDED, BUDGET SOURCE, POLICY REQUIREMENTS

Programs/Projects/Activities	Sectors	Success Indicator	Period of Implementation			OPR	Resources Needed (₱)	Budget Source	Policy Requirements
			2025	2026	2027				
Implement the Material Recovery Facility (MRF) program especially in floodplain barangays	Environment	5 MRFs constructed	X			CENRO , CEO	1,500,000.00	20% CDF/GF/ LDRRMF	Program of work, PPMP
Purchase of MRF machineries such as multi-purpose shredders	Environment	3 units of shredders acquired per year	X	X	X	CENRO	3,000,000.00	20% CDF/GF/ LDRRMF	Project Design, PPMP
Cabarbuhan Local Conservation Area Management Program	Environment	1 LCA managed per year	X	X	X	CENRO	3,000,000.00	20% CDF/GF/ LDRRMF	Project Design, PPMP, Management Plan
Purchase of Gas Analyzer & Opacimeter for anti-smoke belching	Environment	2 units purchased	X			CENRO	600,000.00	20% CDF/GF/ LDRRMF	Project Design, PPMP
Purchase of multi-parameter tester for water quality	Environment	1 unit purchased	X			CENRO	400,000.00	20% CDF/GF/ LDRRMF	Project Design, PPMP
Conduct dredging of natural waterways and construction of additional drainage canals	Infrastructure	10 new Drainage Canal Constructed per year		X	X	CEO	10,000,000.00	20% CDF/GF/ LDRRMF	Project Design, PPMP
Design and construction of flood resilient structures	Infrastructure	3 new Structures Constructed is Flood Resilient	X	X	X	CEO	20,000,000.00	20% CDF/GF/ LDRRMF	Project Design, PPMP

Institutionalize non-structural and structural mitigation measures like reforestation, riverbank stabilization and construction of concrete barriers	Infrastructure	Institutionalized non-structural and structural mitigation measures like reforestation, riverbank stabilization and construction of concrete barriers		X	X	SP, CEO		20% CDF/GF/ LDRRMF	Ordinance
Rain harvesting by installing rain collectors for Government Facilities	Infrastructure	15 Rain Collectors Constructed	X	X	X	CEO	3,000,000.00	20% CDF/GF/ LDRRMF	Program Design
Conduct -bi- annual structural assessment of roads, bridges and flood control networks including evacuation centers and school buildings	Infrastructure	Conducted 2 Structural Assessment of Roads, Bridges, Flood Control Networks, Evacuation Centers and School Buildings per Year	X	X	X	CEO	2,000,000.00	20% CDF/GF/ LDRRMF	Program Design
Implement climate smart agriculture program/ climate resiliency field school including organic agriculture	Economic	One CrFS conducted per year	X	X	X	CASO	300,000.00	20% CDF/GF/ LDRRMF	Project Design
To beat the scarcity of water for agriculture, encourage farmers to shift to the production of HVC's requiring shorter production cycle in barangays where prolonged dry spell is regularly observed.	Economic	One production/ cropping season for 105 ha. planted and harvested	X	X	X	CASO	5,250,000.00	20% CDF/GF/ LDRRMF	Project Design

Installation of solar powered irrigation system for vegetable production	Economic	Five units installed and functional	X	X	X	CASO/ CEO	10,00,000.00	20% CDF/GF/ LDRRMF	Project Design
Rehab and improve existing irrigation facilities	Economic	Two units of irrigation facilities rehab and improved	X	X	X	CASO/CPDO/ CEO	10,000,000.00	20% CDF/GF/ LDRRMF	Project Design/ POW
Repair of mechanical flatbed dryer	Economic	Three units of mechanical flatbed dryer repaired and functional	X	X	X	CASO/CPDO/ CEO	2,400,000.00	20% CDF/GF/ LDRRMF	Project Design/ POW
Implement Responsible Parenthood Programs and RP RH Law (Child Protection, Maternal Care, Family Planning, Sexual Education)	Social/ Health	Produced/ Distributed and Learning Session Comprehensive learning materials (IEC). Produce an initial target of (5000per year) copies for selected brgys. In landslide prone and coastal areas.	X	X	X	CHO/ CSWDO/ NGO	900,000.00	20% CDF/GF/ LDRRMF	Project Design, PPMP
Develop Emergency Response Manual to ensure that all response activities are done with coordination, effectiveness and timeliness	Social/ Health	Comprehensive Emergency Response Manuals for 64 Brgys.	X			CHO/ CSWDO/ NGO	500,000.00	20% CDF/GF/ LDRRMF	Project Design, PPMP

Provision of post disaster financial assistance to affected families	Social/ Health	Provision of financial assistance (P5,000.00) for 400 affected (Partially and Totally Damaged) HHs.	X	X	X	CHO/ CSWDO/ NGO	6,000,000.00	20% CDF/GF/ LDRRMF	Project Design, PPMP
For highly vulnerable farmers and fisher folk, provide off- farm employment or other livelihood activities where possible	Social/ Health	Food and livelihood Security Programs (Food distribution during lean seasons, and work programs)	X	X	X	CHO/ CSWDO/ NGO	3,000,000.00	20% CDF/GF/ LDRRMF	Project Design, PPMP
Accumulation of all kinds of garbage and waste materials along coastlines/Clogging of canals (De-clogging / clean-up).	Social/ Health	Quarterly /per district conduct of de-clogging/ clean-up. Increased public awareness, decreased blockage. Waste Management infrastructure (8 pcs waste bins for 10 barangay per district per year) priority are coastal and flood prone	X	X	X	CSWDO/CENRO/ BLGU/ NGO	240,000.00 (Clean-up) 4,800,000.00 (Bins)	20% CDF/GF/ LDRRMF	Project Design, PPMP

MONITORING AND EVALUATION

REVIEW OF IMPLEMENTATION PLANS

The City Government of Sorsogon acknowledges the critical role of plan execution and policy enforcement in achieving targets and fulfilling its vision of a climate-resilient city and community. The successful implementation of the Enhanced Local Climate Change Action Plan (eLCCAP) 2025-2027 requires adequate resources, institutional structures, and procedural frameworks.

Under the Local Government Code, highly urbanized cities like Sorsogon have the flexibility to design and implement their own organizational structures and staffing patterns, ensuring alignment with the eLCCAP's goals and accountability to the community. To effectively carry out the eLCCAP, additional measures and tools beyond the existing Disaster Risk Reduction and Management (DRRM) Program are necessary.

Plan implementation involves establishing detailed work systems and institutional mechanisms tailored to the eLCCAP's objectives, as well as fostering partnerships and collaborative arrangements with key stakeholders. Expected outputs include an approved institutional structure, streamlined systems and procedures, investment programs, and an Information, Education, and Communication (IEC) Plan for advocacy and awareness.

ASSESSMENT AND PROGRESS TRACKING

Assessment and progress tracking play a crucial role in the eLCCAP. These processes will be overseen by the City of Sorsogon Local Climate Change Core Team, with a focus on learning from past activities—what was accomplished and how it was executed—by evaluating efficiency, effectiveness, and impact. While the eLCCAP is not designed for an extended timeframe, its strategies and plans remain flexible. Adjustments will be necessary if the existing approaches prove ineffective or if circumstances evolve.

Monitoring and evaluation serve as essential tools for city government decision-makers, providing insights when plans are not achieving their objectives or when changes in the environment require strategic modifications. This ensures that well-informed decisions can be made regarding necessary adjustments to the plan or its implementation mechanisms. Given that monitoring and evaluation are anchored on established targets and planned activities throughout the various implementation phases, defining appropriate key performance indicators and targets is essential.

2025-02-1352

25 February 2025

HON. MA. ESTER E. HAMOR
Mayor
Sorsogon City, Sorsogon

Dear **Mayor Hamor**:

This is to certify that the Local Government of Sorsogon City, Sorsogon has submitted their Local Climate Change Action Plan (LCCAP) 2025-2027 to the Climate Change Commission, pursuant to the Department of Interior and Local Government's Memorandum Circular No. 2021-068.

For concerns/clarifications, your Office may contact the Strategic Partnership Division through their email address, <spd@climate.gov.ph>, or office number (02) 8735-8144.

Thank you.

Very truly yours,

ROBERT E.A. BORJE
Vice Chairperson and Executive Director