

Demonstration of the



# Ecotown

Framework

**The Case of San Vicente, Palawan, Philippines**



Demonstration of the

# ECOTOWN

Framework

**The Case of San Vicente, Palawan, Philippines**



**IN THE KNOW**

# San Vicente: A Promising Tourist Haven

As one of Palawan's untapped treasures, San Vicente's pristine beaches, fine white sand, crystal blue waters, lush rainforest, rich biodiversity and exotic islands are starting to captivate local and foreign tourists. As such, this hidden paradise is being mounted as the Philippines' next tourism hotspot.

**Location**  
Northwestern side of Palawan,  
186 km from Puerto Princesa

**Total land area**  
165,798 hectares

**Category**  
1<sup>st</sup> class municipality

**No. of barangays**  
10  
(Alimanguan, Binga, Caruray, Kemdeng, New Agutaya, New Canipo, Poblacion, Port Barton, San Isidro and Sto. Niño)

**Total population**  
30,565 (2010)

**Population growth rate**  
6%

**No. of households**  
6,460 households  
(average size of 5 members)



## What San Vicente is proud of...

**22 islands and islets** within its municipal boundaries serving as tourist attractions

**Largely untapped** beaches, coral reefs, water falls, forest cover and mangrove areas are home to 23 of the 25 wildlife species found in Palawan

**24 ethno-linguistic resident groups**, each with their own distinct dialects and cultural heritage

**Protected areas** occupying 71,977 out of 165,797 hectares: mangrove forest, protected areas proclaimed under the National Integrated Protected Areas System (NIPAS), wilderness, watershed and park reservation and bird sanctuary

## ECONOMICS

# How do people live in San Vicente?

## They farm.

San Vicente is a farming community concentrated on rice production, largely for household consumption.

- More than thirty percent (30%) of the total workforce are engaged in farming activity.
- Rice production (78%) is the primary agricultural activity. Coconut production (10%) comes second.
- Ninety percent (90%) of the farm households were found to be engaged in at least one crop: rice (only 9%) and 1% were found to be involved in two or more crops, respectively.
- Majority of the rice produce does not make it to the market as it is consumed within the households. As a matter of fact, San Vicente has a deficit in rice supply; it imports from its neighboring municipalities in Palawan.



## They fish.

While rice harvest mainly goes to feed the local population, earnings from fish catch tend to fill in the pockets of fisherfolks, thus serving as a major source of income for many households.



- Bequeathed with a rich fishing ground (estimated at 1,344.78 km<sup>2</sup>) as a coastal municipality, fishing constitutes a major source of livelihood for the municipality.
- Almost 50% of the total workforce are engaged in fishing.
- Fishing vessel owners and municipal fisherfolks using motorized boats enjoy easy and direct access to its fishing grounds, even those who own municipal non-motorized vessels.
- Most of the fish catch makes its way to the market, with only at most 10% of the catch being consumed by the households.
- Other fishery-based activities include various businesses engaged in fish, squid and other marine products buying, trading, and exporting, the buying or selling of dried fish, pearl and seaweed farming.

## DEVELOPMENT GOALS

# What kind of future does San Vicente aspire for as a municipality?

Given its rich natural resource endowments and picturesque sceneries, San Vicente is driven to transform itself as a sustainable and profitable world-class tourism destination that affords equal value to economic growth, culture, heritage and environment.



- The Municipality's Vision articulated in their Medium-Term Development Plan (2011-2015) is: *"By 2015, San Vicente will be a better place to live."*

- The Municipality's Mission is grounded on: *"A good governance with defined plans and policies in strengthening the LGUs' capability in providing basic services as a self-reliant and peaceful San Vicente."*

- Working on its development priorities, the Municipality continues to promote and support tourism industry to which it aspires to stand out.

- A **Tourism Development and Management Plan** is now being prepared to optimize the economic benefits of a booming tourism, which has positive spillover effects to other industries particularly infrastructure, services and energy.

- It is now on its way, working toward full development of tourism industry and all its other sectoral developmental pursuits specifically in: agriculture, cooperatives, social services, local governance, infrastructure and environment.

## How does climate change affect local development in San Vicente?

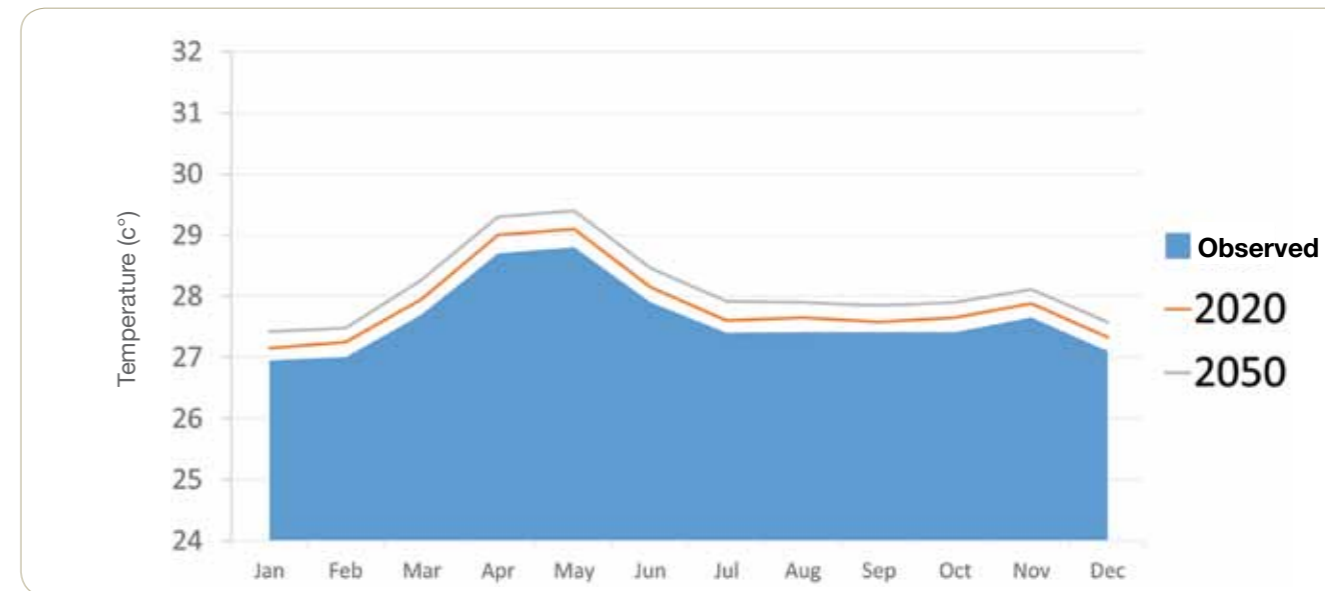
San Vicente is not spared from the harmful impacts of climate change. Increasing rainfall and temperature inflict serious damage to agriculture and fishery, which are the main sources of livelihood of its people.



### Flood & landslides

- Despite being outside the usual typhoon path, San Vicente has experienced strong typhoons in the past 30 years and climate change projections indicate that this trend will intensify.
- There was a significant increase (13.39%) in the total annual rainfall in 2011 and 2012; excessive rain has led to flooding in low-lying areas, crops and soil nutrient washout and landslides in sloping areas.

Projected change in monthly mean temperature for San Vicente Palawan



### Coastal inundation

- In the coastline of Port Barton, resorts and restaurants are located within three meters from the strandline during high tide could be displaced at the height of extreme coastal flooding.
- Coastal flooding can also inflict damage to agriculture. Saltwater intrusion can be detrimental because water with high salt concentration can adversely affect vegetation.

### Drought

- The 1998 El Niño caused coral bleaching for the adjacent northern Palawan shelf and was estimated to have damaged more than 10% of its live coral cover.
- The more recent El Niño phenomenon in 2010 is said to have had an almost comparable impact as that in 1998.

## THE RESPONSE

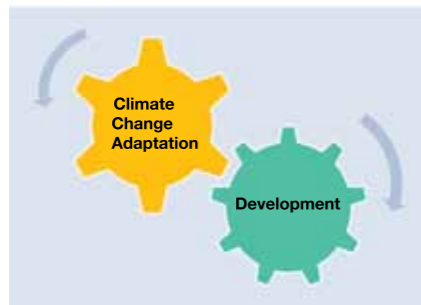
# How can San Vicente anticipate and better cope with the inevitable climatic impacts?

### What is an “Ecotown”?

The Climate Change Commission defines Ecotown as “ecologically stable” and “economically resilient” local communities.

It is a planning unit composed of municipalities located within and around boundaries of critical key biodiversity areas, which are at high risk to climate change.

Ecotown is a proactive approach to climate change, analyzing vulnerabilities and identifying appropriate adaptation measures based on science, expert advice, and local knowledge of the community’s unique conditions.



Through the **Ecotown** framework, economic growth and climate change adaptation are not recognized as two distinct processes nor can be set apart. The needs for adaptation is an opportunity, as much as it is a challenge across all sectors of the economy, to transform the way they operate.

Climate change adaptation (CCA), much like climate change mitigation, can be a driver for innovation and an engine for economic growth.

CCA plans, when integrated with green growth, can serve as a catalyst for positive economic transformation, emphasizing a better balance of growth, resource-use and equity.



# What are San Vicente's foremost vulnerabilities especially in its most important sectors?

Food security is likely to be affected by the damage of climate-related events to crops. Close proximity to the seashores puts several structures at high risk to inundation in cases of sea-level rise, while climate-sensitive diseases such as malaria and dengue can threaten public health.



What/ Who are exposed → How sensitive → What are the impacts

### Agriculture

- 2,013 ha of rice farmlands
- 992 ha of coconut farmlands
- 1,704 farmers
- 27.82% of local GDP from rice production
- 68% of rice harvest for household consumption
- 3,752 livestock

- 2,013 ha of rice farmlands
- 992 ha of coconut farmlands
- 1,704 farmers
- 27.82% of local GDP from rice production
- 68% of rice harvest for household consumption
- 3,752 livestock

- 218 farming households below poverty threshold
- 90% of farming households engaged in mono-cropping
- 428.75 ha of rain-fed areas
- 1,586.25 ha of irrigated areas
- Farmers' dependency on livestock
- Matured coconuts

- Decreased quantity and quality of yield
- Infestation
- Higher mortality of livestock
- Rice sterility
- Reduced nutshell and smaller fruits for coconuts

### Coastal and Marine

- 7,953 fisherfolks
- 164 residents that depend on tourism
- 120 km of coastline
- 140,805.5 ha of municipal fishing ground zone
- 75% live coral cover
- 832 ha of mangrove forest

- 309 fishing households below poverty threshold
- Houses in the coastline and made of light materials
- Coral species sensitive to increase in temperature
- Tourism establishments concentrated in low elevations

- Coral bleaching
- Fish migration
- Top-dying of mangrove
- Less variety in fish catch
- Decrease in fish stock
- Coastal flooding
- Coastal erosion and sedimentation
- Salt water intrusion

### Health

- 30,803 people living in San Vicente
- 46.98% of the employed population are fisherfolks
- 37.43% of the employed population are farmers

- 12,168 children aged 0-14 years old (39.5% of total population)
- 3,326 elderly aged 50 and over (10.8% of the total population)
- 51.07% of households below poverty threshold
- 28.81% of households below food threshold

- Increase in morbidity rate
- Heat stroke
- Infectious, vector-, and water-borne diseases (dengue, malaria, typhoid, etc.)
- Changes in vector ecology
- Incidence of direct physical injuries and death due to extreme events

- Decreased productivity
- Decreased income
- Increased poverty
- Food insecurity
- Malnutrition
- Decreased tourism opportunity



**RESOURCE EFFICIENCY**

# How does San Vicente make best use of its resources and is the current pace of utilization sustainable?

San Vicente's fishery sector provides the bulk of local income but overfishing and coral reef degradation threaten the sustainability of their livelihood. Agriculture is not efficient enough to provide additional savings whereas the forest barely generates revenue as it is legally protected from exploitation. These gaps will have considerable implications on future development – specifically the tourism sector.



**Agriculture**

**Coastal and marine**

**Forestry**

**Health**

**Challenges**

Rice, despite being the dominant crop, has a significantly lower land rent compared to assorted crops.

Single-cropping conditions will lead to rice production being insufficient to satisfy total demand.

Few farmers have financial savings from agricultural activities.

Overfishing inflicts damage to reef and fishery resources.

Only about half of the fishing households were able to save or keep a portion of their rents.

A greater portion of the catch of municipal fishery households consists of lower value fishes.

Since most forest covers are protected, forestry-based activities are small-scale.

Present threats include illegal cutting for boat making, lumber production, kaingin, fuel wood gathering and charcoal-making.

Forest stocks are expected to decrease if interventions are not introduced to counter the threats.

Climate change triggers the prevalence of water-borne diseases (e.g., cholera and typhoid fever).

Vector-borne diseases (e.g., malaria and dengue) are also sensitive to climatic changes.

Capacity of public health infrastructure remains limited to cater to the increasing population (including tourists).

**Implications on Future Economic Growth**

Self sufficiency in producing staple food is necessary to accommodate the influx of tourists in San Vicente.

San Vicente will lose significant tourism opportunities if its coastal resources continue to be depleted.

San Vicente cannot fully reach its full tourism potential if the forests remain simply protected as forests can also serve as a major tourist attraction if managed in an environment-friendly way.

Tourists will be discouraged to visit San Vicente if public health threats are not addressed properly.

**Opportunity for Green Growth**

Expanding the area for agricultural lands to achieve food self sufficiency to cater to the increasing demand driven by tourism.

Modernizing farming practices and technology to increase productivity.

Extending core protection zones, rehabilitating the depleted corals, and implementing moratorium on catching herbivores.

Running after encroachment and illegal fishing of external commercial vessels.

Opening up some parts of the forest area as revenue-generating national parks and agricultural lands under sustainable ecological management.

Sustainably extracting other raw materials from the forests as a new source of livelihood.

Upgrading and expanding the health system to make it more accessible and responsive to the growing population and evolving health threats.

Intensify public health education as a preventive mechanism.



## PRIORITIZATION

Based on the systematic assessment of San Vicente's resources and vulnerabilities, what are the viable options in place to adapt to climate change?

The task of prioritizing adaptation measures involves working on a set of criterion which reflects the technical, economic, social and environmental aspects of a menu of options, with consideration on the given local conditions and implementation capacities. This is critical to planning due to limitation in resources to finance all identified adaptation options.

Through multi-criteria analysis, several options were prioritized based on the following criteria: effectiveness, cost, technical feasibility, social/cultural feasibility, required time, and sustainability and overall impact.

## Agriculture

## Coastal and marine

## Health

### Technical / Infrastructure

- Construction of additional automatic weather stations
- Construction of small-scale irrigation facilities

- Establishment of sea walls and dikes in Port Barton
- Setting up of early warning system
- Mangrove deforestation

- Water supply systems (to level 1, 2)
- Insecticide impregnated bed nets
- Rapid treatment strips for malaria and water tablets
- Fans and cooling facilities

### Governance and Policies

- Training to introduce alternative livelihood (non-timber forest product)
- Establishment of farmers' field schools and programs

- Total fish-catch monitoring
- Monitoring of illegal fish catch practices
- Organizing and strengthening fisherfolk organizations
- Coral rehabilitation (i.e., undertake herbivore seeding, establish the necessary mix of marine habitat types to enhance coral resiliency)

- Promoting regular health weighing and monitoring
- Training on early detection/treatment of infectious, water/vector-borne diseases

### Practices

- Introduction of new crop varieties, including hybrids, to increase tolerance and suitability of plants to temperature, moisture and other climatic conditions
- Alteration of cropping pattern/calendar and practices

- Training for alternative livelihood
- Promotion of private sector involvement in coastal planning and management
- Trainings and orientation on disaster risk reduction and management
- Enhanced public information campaign
- Policy for water resource use conflict resolution

- Public health and hygiene training for the youth
- Implementation of zoning ordinance influenced by hazard or risk maps
- Increased enrolment in health financing facility (PhilHealth)

### What is 'Climate Proofing'?

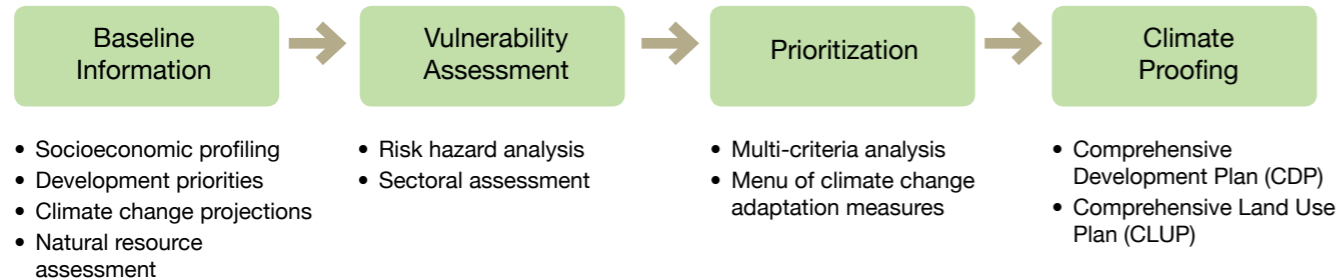
- A methodological approach aimed at incorporating issues of climate change into development planning.
- Enables development measures to be analyzed with regard to the current and future challenges and opportunities presented by climate change.
- Can be applied in planning phase or when revising plans. Properly implemented, it makes a plan or investment more "climate-proof."

### CLIMATE PROOFING

## How can San Vicente implement the proposed tailor-made adaptation measures?

### By climate proofing the development plans.

Planning, as an essential part of local governance, defines the direction of the local government in meeting its development goals. Mainstreaming climate change into the local development planning requires the participation of various stakeholders to achieve a mix of perspectives on development issues and their linkage to climate change.



### THE ROAD AHEAD

## Ecotown, Climate Resilience, and Green Growth

Though climate change presents daunting challenges, it can serve as a strong catalyst to positive green growth transition. The necessity of identifying and implementing the appropriate adaptation measures, highlighted in the Ecotown framework, holds promising outcomes toward achieving climate-resilient green growth.



- Green Growth is the only way forward to achieve sustainable development and alleviate poverty in the long term. It cannot be sustained without resilience to climate change impacts and natural disasters.
- The Ecotown Framework Demonstration Project supports key aspects of Green Growth by reducing vulnerability to climate change, thereby enhancing resilience, as well as prioritizing adaptation measures that are framed within the local economic development model.



- Climate proofing is just an initial step toward becoming an Ecotown. San Vicente can rightfully consider itself as an Ecotown if it successfully implements the adaptation measures proposed in its revised local development plans.
- San Vicente can serve as a role model for other LGUs in demonstrating Green Growth as a solution to achieve climate-resilient growth and sustainable local development. It can also initiate the shift of Green Growth momentum from the LGU to the provincial, national and sectoral level, thereby embedding Green Growth as a core strategy in development planning.



#### ABOUT THE CLIMATE CHANGE COMMISSION

The Climate Change Commission, an independent and autonomous body that has the same status as that of a national government agency, is under the Office of the President of the Philippines. It is the lead policy-making body of the government which is tasked to coordinate, monitor and evaluate the programs and action plans of the government relating to climate change pursuant to the provisions of the Republic Act No. 9729 or the Climate Change Act as amended by Republic Act No. 10174 or the People's Survival Fund.

#### ADDRESS

Room 238 Mabini Hall, Malacañang Compound, San Miguel, Manila, Philippines

#### CONTACT

T: +63.2.735.3069 | 736.3144

E: [info@climate.gov.ph](mailto:info@climate.gov.ph)

[www.climate.gov.ph](http://www.climate.gov.ph)



#### ABOUT THE GLOBAL GREEN GROWTH INSTITUTE (GGGI)

GGGI is a new kind of international organization — interdisciplinary, multi-stakeholder and driven by the needs of emerging and developing countries. It has been established by several forward-thinking governments to maximize the opportunity for “bottom-up” (i.e., country- and business-led) progress on climate change and environmental challenges within core economic policy and business strategies. GGGI is dedicated to pioneering and diffusing a new model of economic growth in developing and emerging countries, known as “green growth,” that simultaneously targets key aspects of economic performance, such as poverty reduction, job creation and social inclusion, and those of environmental sustainability, such as mitigation of climate change and biodiversity loss and security of access to clean energy and water.

#### ADDRESS

19F Jeongdong Building, 15-5 Jeong-dong, Jung-gu Seoul 100-784, Republic of Korea

#### CONTACT

T: +82-2-2096-9991

F: +82-2-2096-9990

[www.gggi.org](http://www.gggi.org)

