



# t e c h n i c a l   r e p o r t

**Participatory Climate Vulnerability and Risk Assessment (PCVRA)  
for Adaptation Mitigation Initiatives in Agriculture (AMIA) Villages**



# ILOILO



**AMIA Villages in the  
Municipality of  
San Rafael,  
Province of Iloilo**



**JULY 2023**



# technical report

Participatory Climate Vulnerability and Risk Assessment (PCVRA)  
for Adaptation Mitigation Initiatives in Agriculture (AMIA) Villages

## AMIA Villages in the Municipality of San Rafael, Province of Iloilo

International Institute of Rural Reconstruction  
Department of Agriculture - Adaptation Mitigation Initiatives in Agriculture  
(DA-AMIA REGION 6)



# Contents

## **San Rafael, Iloilo**

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Background	<b>5</b>
Methodology	<b>6</b>
Provincial Profile	<b>7</b>
Municipal Profile	<b>8</b>
Executive Summary	<b>11</b>
Recommendations	<b>15</b>

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## **Barangay Profile**

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Barangay Poblacion	<b>16</b>
Barangay Ilongbukid	<b>30</b>
Barangay San Andres	<b>44</b>

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## A. Background

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Climate change poses a serious threat to the Philippines, putting development at risk and further endangering poor communities. The country's agri-fishery sector is particularly vulnerable. To combat these dangers, the Department of Agriculture introduced the **Adaptation and Mitigation Initiative in Agriculture (AMIA)**. This program aims to empower local communities in the agri-fisheries sector and help them adopt sustainable livelihoods and effectively manage climate risks. Climate change has varying impacts depending on the location and context, making certain sectors more vulnerable than others.

Development efforts should prioritize those who are most at risk, including small-scale farmers who rely on the climate, marginalized groups, and individuals lacking resources and access to information.

The **Participatory Vulnerability and Climate Risk Assessment (PCVRA)** promotes community empowerment through the creation of an information base that enables planning and action.

PCVRA aims to provide a better understanding of climate change to the community and inform them of the conditions and factors affecting their vulnerability. It also identifies the levels of risks to the community's livelihood and their capacity to adapt to the manifestations of climate change.

The main objective of the PCVRA is to identify the effects of climate change within the local populace and determine the nature of these climate-induced dangers in order to gain greater insight into their potential consequences and their effects on the community's vulnerability.

The **International Institute of Rural Reconstruction (IIRR)** facilitated PCVRA to provide local decision makers with comprehensive knowledge about climate-related risks and vulnerabilities, empowering them to develop effective solutions for addressing its impacts across multiple levels, ranging from households and farms to ecosystems and landscapes.

The outcomes of the PCVRA don't directly solve issues faced by rural communities. Instead, it becomes a basis for developing community-based strategies for adaptation. It is also used in decision-making processes involving various stakeholders. Ultimately, these efforts aim to improve the well-being of underprivileged individuals who are greatly impacted by climate change.

## B. Methodology

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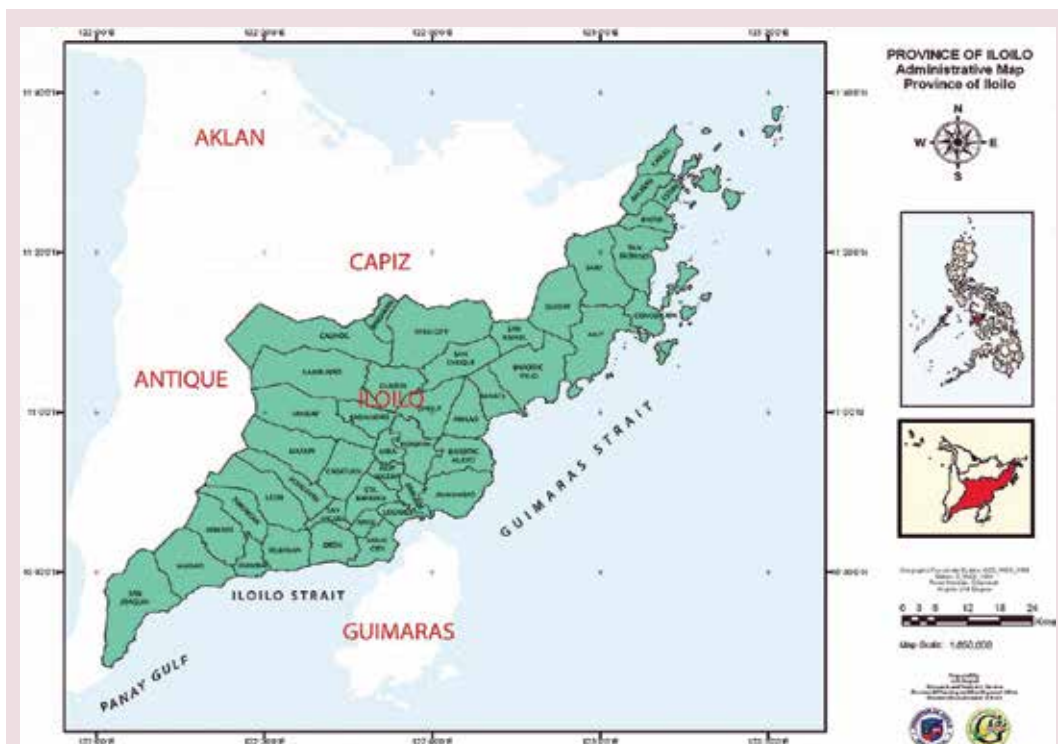
Various sectors, including barangay council members, the Sangguniang Kabataan Chairman, barangay health workers, daycare workers, church representatives, school staff, businessmen, farmers, and fisherfolk were present at the event. The activity commenced with a short introduction followed by a discussion of the significance of PCVRA and its associated tools and techniques.

The following PCVRA instruments were used for information gathering:

1. **Timeline.** The group discussed past occurrences of climate hazards and the methods they utilized to manage them. They also strategized techniques to boost their resilience and improve their overall livelihood.
2. **Spot Map.** The community conducted a Spot Map exercise that pinpointed areas deemed vulnerable to hazards and risks. They also identified livelihood areas that are most affected by these dangers. Resource units, including crops, livestock, households, and natural resources, were discussed thoroughly with an emphasis on utilizing them effectively to meet the community's needs.
3. **Seasonal Calendar.** Showcases changes in weather conditions that have occurred over the past 5, 15, and 30 years. It encompasses details related to temperature, weather, crops, and livelihood.
4. **Livelihood Matrix.** It is a comprehensive breakdown of income-generating ventures. The participants are prompted to reflect on their involvement in these ventures and distinguish between gender-specific roles and decision-making responsibilities. The matrix is segmented into three primary age groups: Youth (aged 15-30), Middle Age (aged 31-59), and Senior Citizens (aged 60 and above).

5. **Resource Flow.** Identify the inflow (revenue earned from their means of livelihood) and outflow (costs incurred) of resources.
6. **Venn Diagram.** Utilized to depict the various institutions, associations, and individuals from the government and private sector that provide access to essential services. These categories are shown in proportions, with figures indicating the level or strength of each partnership with the community.

## C. Provincial Profile



### Basic Information

**Type:** Province

**Region:** Region 6 (Western Visayas)

**Municipalities:** 42

**Highly urbanized cities:** 1

**Cities:** 1

**Barangays:** 1,721

**Coastal/landlocked:** Coastal

**Marine waterbodies:** Sulu Sea, Visayan Sea, Jintotolo Channel

**Area (2013):** 4,997.64 km<sup>2</sup> (1,929.60 sq. mi)

**Population (2020):** 2,051,899

**Density (2020):** 411/km<sup>2</sup> (1,063/sq. mi)

**Figure 1. Provincial Map of Iloilo.**

Iloilo province is in the southern and the northeastern portion of Panay Island. It is bounded in the north by the Province of Capiz and Jintotolo Channel, by Panay Gulf and Iloilo Strait in the south, in the east by Visayan Sea and Guimaras Strait, and the province of Antique in the west. Its land area is 4,997.64 km<sup>2</sup> or 1,929.60 sq mi.

The topography of the province of Iloilo varies from flat lands and rolling hills to mountain peaks and ranges. The mountain range lies along the border between Iloilo and the provinces of Antique and Capiz and roll down into flat plains towards the coastal towns. Almost one-third of the entire province is considered flat. There are seventeen types of soil found in the province. Generally, the soil is fertile and suitable for almost all types of agricultural crops. The loam type of soil is predominant and conducive to farming. More than a hundred rivers and creeks traverse the entire province and these are identified as possible sources of irrigation water. The Jalaur river basin records the highest annual flow and is considered as the major source of irrigation water in the area. The province has potential underground water supply, which is mostly tapped for domestic use.

In the 2020 census, its population stands at 2,051,899. This represented 25.79% of the total population of the Western Visayas region, 9.97% of the overall population of the Visayas island group, or 1.88% of the entire population of the Philippines. Based on these figures, the population density is computed at 411 inhabitants per square kilometer or 1,063 inhabitants per square mile. It has 23 municipalities.

It is dry from December to May and wet from June to November along the southern-northern part of the province and in a portion of the central municipalities. There is no distinct wet and dry season in the Iloilo-Capiz border. The annual rainfall for 2021 is 2,342.6 mm. The minimum temperature is 21.8 °C (February 19, 2021, 7:30 A.M.) and the maximum temperature is 38.0 °C.

### Secondary Road

- Passi-Sn Rafael-Lemery-Sara Rd

### Tertiary Road

- Barotac Viejo-Sn Rafael Rd
- San Rafael-Dumarao Rd

## D. Municipal Profile

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San Rafael comprises nine barangays, namely: Aripdip, Bagacay, Calaigang, Ilongbukid, Poblacion, Poscolon, San Andres, San Dionisio, and San Florentino. This municipality has the least number of barangays in the entire province and is traversed by Hin-ayan Creek, which supplies water to the farmlands.



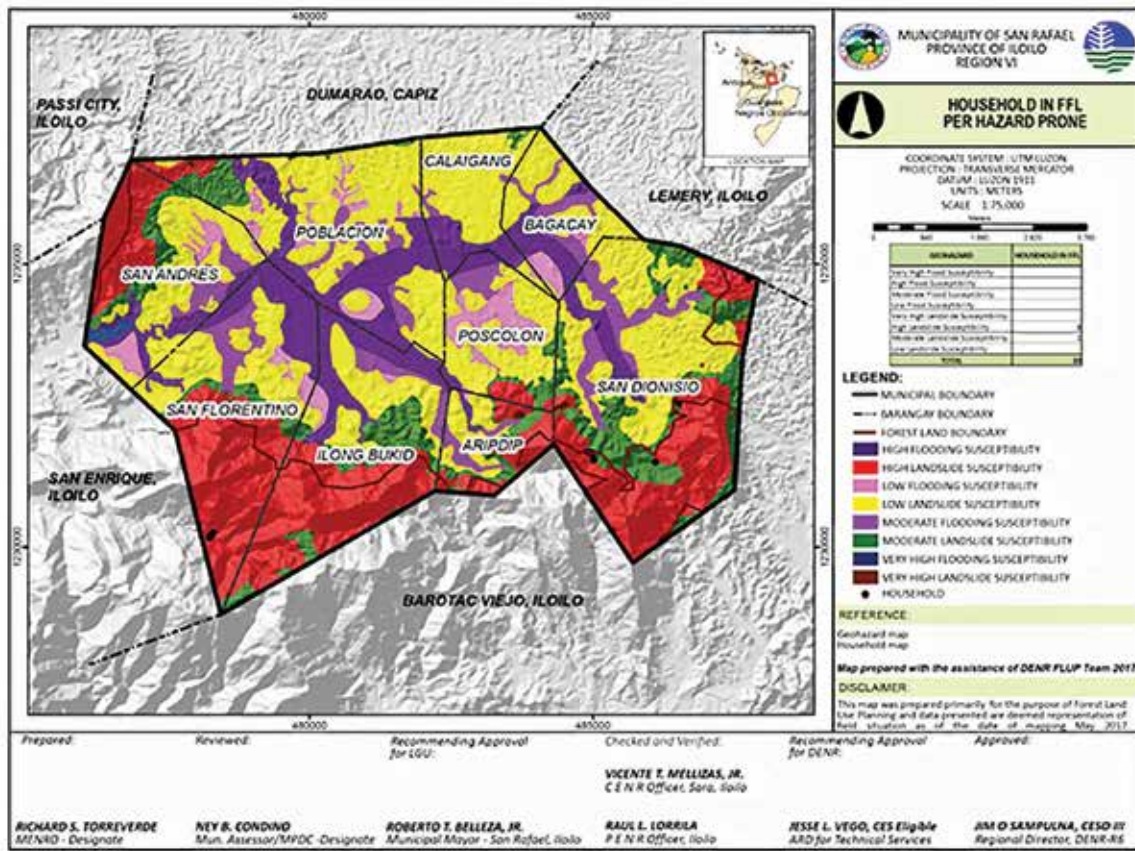


Figure 2. Municipal Map of San Rafael.

## Topography and Slope

San Rafael has a total land area of 14,578 hectares with 1,969.50 hectares classified as forest land. It is located in the northern part of the Province of Iloilo, and lies in the geographic coordinates of 122° 46' 00" to 122° 53' 00" east longitude and within 10° 7' 00" to 10° 12' 00" north latitude. San Rafael is bounded on the east by the municipalities of Lemery and Ajuy, on the west by the municipality of San Enrique and Passi City, on the north by the municipality of Dumarao and province of Capiz, and on the south by the municipality of Barotac Viejo. It is approximately 72 kilometers from Iloilo City.

The municipality is mountainous and rugged. The mountain ranges are located along the borders of Barangay Ilongbukid and Barangay San Florentino; and Barangay San Andres, Bagacay, San Dionisio, and Barangay Aripdip of which the areas are categorized into different slopes. Approximately 25.47 square kilometers has slopes of 0-3%, 12.73 square kilometers has slopes 3.1-8%, 6.73 square kilometers has slopes 8-18%, and 14.39 square kilometers has slopes 18% and above.

The approved Forest Land Use Plan (2018) serves a guide in the demarcation of protection and production zones of the forestlands in the municipality. A total of 1,357.12 hectares in five barangays are classified as forest lands. All forest lands are regarded as public domain thus, such lands belong to the State under the 1987 Philippine Constitution.

The establishment of the protection zone was based on several parameters such as soil type, elevation, topography, slope, and existing vegetative cover. The protection area will have coverage of 1,228.98 hectares. These areas are generally located in Barangay Aripdip, Ilongbukid, San Florentino, San Andres, and San Dionisio. The demarcation also provides concrete information in the possible issuance of tenure instruments should it be necessary. 398.09 ha will be allocated for biodiversity conservation, maintenance, and eco-tourism development.

The production area for the proposed management zone, as identified by DENR, will have an area of 128.14 hectares, wherein 100 hectares of it will be allotted for agroforestry, 20 hectares for Cacao and Coffee Plantations, 7 hectares for Bamboo River Bank Stabilization and remaining 1.14 hectares will be allotted for forest trail roads.

## Climate and Rainfall

Northern Iloilo's climate is classified as Type III, characterized by no very pronounced maximum rain period, with a short dry season lasting only from 1-3 months, either during the period from December to February or from March to May.

## Population

According to the latest 2020 Census of Population and Housing by the Philippine Statistics Authority, the population of San Rafael currently stands at 17,795. This makes up 0.87% of the population of the Province of Iloilo (excluding Iloilo City) which stands at 2,051,899. San Rafael is the second least populous municipality in the province.

The 2015 PSA Census shows the population of San Rafael grew to 16,532 from the 2010 Census of 14,655. However, the 2015 population of San Rafael is less than 1% (or 0.9%) of the total population of the Province of Iloilo. San Rafael is fifth among the least populous cities and municipalities of Region VI, excluding Iloilo City.

## Economic Activity

The town is mainly agricultural and produces rice, sugar cane, coconut, corn, root crops and vegetables. Before, it was also a source of cogon shingles being sold outside especially to the surrounding municipalities since cogon grows abundantly along the mountainsides.

## E. Executive Summary

### BARANGAY POBLACION

Description of Hazards	Impacts	Capacity of the community
<p>With three (3) - Yolanda, Frank, Agaton - of the strongest typhoon hitting the barangay for the past years, typhoon has been considered as the main climate-related hazard that threatens the area.</p> <p>Wind intensity was so strong and the rain it brought resulted to 2-3 days of flooding.</p> <p>Drought has also hit the area that lasted for 6-7 months, but this happened once.</p>	<p>Rice fields, in particular those in Sitio Iloco are prone to flood, that completely wipes out production.</p> <p>Floods, as a secondary hazard due to typhoon, affects livestock. A significant number were drowned during the 3 typhoons.</p> <p>Winds meanwhile destroyed fruit trees and vegetable areas.</p> <p>Power lines were knocked off and took time to be restored. Last typhoon resulted to more than a month of no power. This has significantly affected commerce in the area.</p> <p>Meanwhile for drought, water scarcity was felt. Water for agriculture was not enough and resulted to hunger for many who are dependent on agricultural-based livelihoods.</p>	<p>Local governments has response programs in place where they provide advisory before typhoon (rekorida) evacuation areas, and relief goods.</p> <p>The Office of the Municipal Agriculture also provides support in facilitating insurance especially for corn, rice and banana. In additional the office provides seeds after a hazard event.</p> <p>As an AMIA village, farmers have access to support such as small water impounding ponds (SWIP), harvester, vermi facilities, transplanter, storage house, and solar dryer. Although only members (Iloco Farmers Association) can avail of these services. Most production process is also mechanized. AMIA has been conducting trainings.</p> <p>A number (at least 5%) of farmers are engaged in small-aquaculture with their backyard fishponds with tilapia/mudfish using water from the Hinay-an River, that more often over flows during torrential rains.</p> <p>Farmlands are mostly rented (50%), 30% owns their land and the 20% is public land. Average ownership is 1.06 hectares.</p> <p>Age of farmers in the area ranges from 30 to 60 years old, however only the old farmers and association members are RSBA registered, around 15% are not registered. New and young farmers are not registered.</p> <p>Farmers Association is active that gets support from the DA including BFAR, such as farm inputs and facilities mentioned above.</p> <p>MFIs are also plenty with Cardbank and Dungganon coupled with presence of cooperatives such as Gibato, Dumarao, Bugasong Coop in Sara.</p> <p>Some roads are cemented while other areas are still rough road. Irrigation is available where 40% have access. This is attributed to Hinay-an watershed and Hinay –an river that traverses the area.</p> <p>Production and post-harvest are available with tractors, transplanters, floating tiller, mechanical dryer (50 pesos/sack).</p>

**BARANGAY ILONGBUKID**

Description of Hazards	Impacts	Capacity of the community
<p>Typhoons Yolanda, Odette, Frank, Paeng and Ruping that hit the area was characterized as strong winds and heavy rains. Floods occur in the barangay during long period of downpour. Flood takes 6 hours to subside.</p>	<p>Agricultural products such as crops and animals were affected. Cost of production for livestock are totally lost, especially those engaged in upgraded swine.</p>	<p>Irrigation is not an issue as river and creeks are accessed for irrigation. 2 dams (Dam 1 and DAM 2) were built in the area. Specifically, it provides irrigation to 40-45 farmers in Sitio Balik-an. 50 % of the farm lands have access to irrigation while another 50% are rainfed. The dams are NIA Project that are managed by Ilong Bukid Uswag Irrigation Association. This association support members with access to reaper hand tractor, corn sheller water pumps private and dryers. The DA also provides support with livelihood assistance, rice seeds and fertilizers subsidy</p> <p>A number of farming households are engaged in inland aquaculture (fish ponds). They are receiving tilapia fingerlings from BFAR tilapia fingerlings</p> <p>Most access roads are cemented (90%), only a few (10%) are rough roads. Though roads are narrow that only motorbikes can access.</p> <p>Age range of farmers is 18-70 years old. 90% are registered in the RSBA. However, a number of farmers consistently fail to comply with insurance policies for their crops. The DA has conducted numerous training on sustainable farming approaches.</p> <p>Lending institutions are existent in the barangay (Dungganon, ASA, Cardbank). DTi Negosyo Center is also available. In general farmers are not into savings.</p>

**BARANGAY SAN ANDRES**

Description of Hazards	Impacts	Capacity of the community
<p>Typhoon Yolanda was strongest to hit the area with its very intense wind and rain.</p>	<p>The government provided cash and food packs for assistance and listed the damages to livelihoods. The barangay led clearing operations.</p> <p>Community members looked for alternative sources of livelihood such as working in construction sites and other hard labor.</p>	<p>Main roads are mostly cemented, however those going to farms and inner part are rough roads and difficult to access during rainy season.</p> <p>2 sitios have access to irrigation (SWIP) with a total area of 8.5 hectares.</p> <p>Farmers have access to tractors provided by PHILMEC. The DA has been providing seed and input support.</p> <p>Most production and post production facilities (harvester, solar and mechanical dryer, milling) are rented out by private owners at a low rate.</p> <p>However, there are no storage, and processing facilities.</p> <p>Farming age is 18 -70 years old. High rate of registration to RSBA has been noted.</p> <p>Presence of MFIs such as Cardbank, Dungganon, Taytay sa Kauswagan, ASA, where almost 30% of farmer population access the services of these MFIs.</p> <p>The barangay has a forest area roughly totaling to 100 hectares; however, land conversion has started with cultivation of corn and small scale-mining.</p> <p>Agricultural soils have been observed to be acidic which they attribute to the constant flood and landslide. Reliance to commercial inputs by farmers was mentioned.</p>

## AMIA Program

The Adaptation and Mitigation Initiative in Agriculture (AMIA) is a comprehensive and forward-thinking program designed to address the complex challenges and opportunities within the agricultural sector in the context of climate change and environmental sustainability. AMIA is primarily focused on promoting agricultural practices that are both adaptable to changing climatic conditions and mitigative of greenhouse gas emissions.

Climate change poses a significant threat to global food security and agricultural sustainability. Rising temperatures, altered precipitation patterns, and increased frequency of extreme weather events have the potential to disrupt crop yields, affect livestock production, and compromise the livelihoods of millions of farmers worldwide. Furthermore, agriculture is a notable contributor to greenhouse gas emissions through practices such as deforestation, soil degradation, and inefficient land use.

The AMIA emerged as a response to these pressing challenges. It was conceived with the understanding that the agricultural sector can be both a victim and a solution to climate change. AMIA aims to bridge the gap between agricultural adaptation and mitigation' efforts by integrating them into a holistic framework.

AMIA seeks to enhance the resilience of agriculture to climate change by implementing climate-smart practices. This includes using drought-resistant crop varieties, improving water management, and developing early warning systems for extreme weather events.

In addition to adapting to climate change, AMIA places a strong emphasis on mitigating the environmental impact of agriculture. It promotes sustainable farming practices that reduce greenhouse gas emissions, such as reduced tillage, agroforestry, and the use of renewable energy sources.

AMIA is rooted in a community-centric approach. It recognizes that the success of adaptation and mitigation strategies relies on the active involvement of local farmers, communities, and relevant stakeholders. The program engages with farmers to co-create and implement solutions that are tailored to their specific needs and contexts.

AMIA collaborates with various stakeholders, including government agencies, non-governmental organizations, research institutions, and the private sector. These partnerships facilitate knowledge sharing, capacity building, and resource mobilization to support the program's objectives.

Research and innovation are at the core of AMIA. The program actively encourages the development and dissemination of cutting-edge agricultural technologies, practices, and policies that can enhance adaptation and mitigation efforts.

AMIA acknowledges the need to scale up successful adaptation and mitigation strategies and replicate them across different regions and agricultural contexts. This approach enables the program to have a more extensive impact and contribute to global sustainability goals.

To ensure the effectiveness of its initiatives, AMIA maintains a robust monitoring and evaluation system. Regular assessments are conducted to measure the impact of adaptation and mitigation strategies on agricultural productivity, environmental sustainability, and the well-being of rural communities.

## AMIA in San Rafael, Iloilo

The program started in San Rafael in 2022. Organizing farmers was a key activity that resulted to 8 farmer associations (FA) with one umbrella organization, the Sanyog San Rafael AMIA Village Farmers Association. Below are the 8 barangay level FAs:

- a. **Ilong-Bukid Dam 1 Communal Irrigation Association** (Male - 14, Female - 6)
- b. **Ilong-Bukid Dam 2 Communal Irrigation Association** (Male - 3, Female - 2)
- c. **Balabag Buranan Farmers Association Inc.** (Male - 1, Female - 4)
- d. **Poblacion Vegetables Planters Association** (Male - 2, Female - 6)
- e. **Iloco Daan Banwa Farmers Association** (Male - 3, Female - 10)
- f. **San Andres Farmers Association** (Male -13, Female - 18)
- g. **Apo Farmers Association** (Male - 4, Female - 8)
- h. **Iloco Farmers Association** (Male - 9, Female - 12)

Initiatives were introduced by advancing alternative livelihoods that are climate smart such as:

- a. **Livestock Production**
  - 1) Babuyang walang amoy: stocks were provided and support to initial inputs
  - 2) Production of native breeds like native pig production (20 heads native pig (2 boar and 18 sow) and native chicken production (Individual - 150 heads native chicken, communal - 50 heads native chicken. Aside from stocks, facilities (e.g. poultry house), and equipment (e.g. incubator) were provided.
- b. **Organic vegetable production** where materials were provided (e.g. 48 plastic drums with 200 liters capacity, 4 100m water hose, 40 300m water hose, 140 vermicast, garden tools, assorted vegetable seeds)
- c. **Vermicomposting material** (e.g. 25kg ANC, Vermi facility)

## Discussion

With adequate access to water sources with presence of rivers and creeks, the Department of Agriculture together with NIA was able to establish small water impounding ponds (SWIP) in key areas. The PRA conducted in 2022 revealed irrigation as one key issue. With access to water, a number of households in Poblacion and Ilong Bukid are able to engage in small aquaculture as alternative livelihoods. This is also very favorable to their primary crop which is rice. Cropping is already twice a year, and with better access to irrigation and high quality and short-cycle rice breeds, third cropping is possible in able to increase rice production in the municipality.

Production and post production are also available. However in Barangay San Andres, these are privately controlled compared to the two other barangays where these services are available to member of the farmer associations.

Registration to RSBA is high. However, a number of farmers fail to accomplish requirements like reporting or registering their crops 15 days after planting. This has resulted to low insurance coverage.

Farming labor is relatively young with an average age between 18-70 years old. However registration to RSBA of new and young farmers needs urging as rate of membership is low in this age group according to the community.

Farmers associations has been organized with the AMIA program. But the number of membership seem low. Targeting and encouraging participations, especially of new and young farmers is wanting.

## F. Recommendations

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1. Flood as secondary hazard from typhoon has been identified as the primary hazard that will likely to recur given the climate trend. There is a need to mitigate the impact of the hazard. CIS has not been mentioned in the FGDs. Timely climate information is critical for farmers decision.
2. Utilizing existing FAs to reach out more farmers especially small-holders and farm laborers.
3. Integrate RSBA registration and insurance processes into FA services.
4. Intensify aquaculture as alternative livelihoods.

# Barangay Poblacion

## 1. Introduction

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### 1.1. Barangay Profile

Brgy. Poblacion is a barangay in San Rafael, Iloilo and is one of the municipality's largest barangays at 1,476.3524 hectares. It has seven sitios, namely, Sitio Buranan, Sitio Balabag, Sitio Linusot, Sitio Iloco, Sitio Tinukpan, Sitio Kilomitrahi, and Sitio Bigo.

As of the 2020 census, it has a total population of 4,460 people, representing 25.06% of the total population of San Rafael. In 2015, it had a population of 4,324 people broken into 974 households, with an average of 4.44 people per household.

### 1.2. Household Classification

- Lower class 50%
- Middle class 50%

### 1.3. Livelihood Status

The community relies on agriculture for their source of income. They engage in farming and plant rice (90%), corn (25%), and sugarcane. Aside from having these sources of livelihood, 50% raise pigs in their backyard while 99% raise chickens. 10% have fishponds.

70% of rice are rainfed, while 30% use irrigation through a small water impounding system project of the DA where at least 20 farmers can access from Sitio Iloco.

Aside from engaging in agricultural activities, there are those who earn their livelihood through professional capacities as teachers, emergency responders, and as law enforcers. Some are engaged in construction work. There are also families who receive support from members who work overseas.

All roads in the sitios are not yet cemented, making it difficult to transfer agricultural produce in large scale, such as through trucks.



## 1.4. Sectoral Involvement

### a. Rice

Poblacion has a total rice area of 355 hectares with an annual production of 1,299.1 tons. Records reveal that there are 280 farmers involved in rice farming.

Men completely dominate most of the tasks regarding rice planting, although they share some of the responsibility with women in seed selection, land preparation, seed broadcasting, and drying.

Both have an equal role in applying for crop insurance, harvesting, and marketing/storing seeds. Both also decide equally in most of the tasks that they share, except in seed broadcasting and drying where men still get to decide most of the time.

The youth and the elderly are also significantly involved in all aspects of planting rice, except in clearing/monitoring which excludes the youth.

### b. Corn

Corn has a total area of 21 hectares with 102.9 tons annual production and 23 farmers are fully engaged in this crop production.

Men and women equally share roles and decisions in most activities regarding planting corn, except in spraying herbicides and monitoring crops which is left entirely to men. Men also take the lead in land preparation (80%) and drying (20%). On the other hand, women take the lead in planting (80%), harvesting (60%), and marketing/selling (80%).

All sectors get to participate in most of the roles, except in seed selection, which does not include the youth, and in drying, which exempts senior citizens. Those aged 31 to 59 years old take the lead in all the roles. The youth are more involved (30%) in spraying herbicides than seniors (20%), as well as in planting (30% vs. 10%) and in harvesting (30% vs 10%). Seniors are more involved in PCIC insurance, monitoring (40% vs 10%), harvest preparation (40% vs 10%), and marketing/selling (40% vs. 10%). They take turns in having more involvement in the first and second application of fertilizer (40% vs 10%), which is led first by the youth and then later by the seniors.

### c. Sugarcane

Both men and women participate in the activities for planting sugarcane. They decide and do things equally when it comes to variety selection, harvest preparation, harvesting, and hauling and selling. However, some roles are entirely left to one group. While men and women decide equally in weeding and in the first site plowing, the first is entirely done by women, while the latter is entirely done by

men. Men have total control in land preparation, the second and third site plowing, and monitoring, while women dominate roles and decisions by 90% for the preparation of sugarcane cuttings and fertilizer application.

All age sectors participate in all the activities. Those aged 31 to 59 years old lead in most activities, except in variety selection where they only get 40% participation while seniors participate at 50%. Seniors also get to participate more than the youth when it comes to land preparation (40% vs. 10%), and harvest preparation (30% vs. 10%), however, the youth participate more than the seniors in the rest of the activities.

## 2. Climate Change Perception

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### 2.1. Climate Hazard

Brgy. Poblacion identified strong typhoons as its main climate-related hazard. They faced Super Typhoon Yolanda in 2013, Typhoon Frank in 2018, and Tropical Storm Agaton in 2022.

The barangay experienced more typhoons five years ago than it did 15 and 30 years ago. Rain has increased in frequency and in volume. They no longer have dry months in March and April but experience rain all throughout the year, with the highest volumes in June and July, and later from October to December.

They have also experienced drought in 1986 and in 2014 which lasted for 6 to 7 months.

### 2.2. Impact

Super Typhoon Yolanda destroyed many houses and the community lost access to electricity and the internet for a month.

It affected the prices of their fruit and vegetable commodities and drowned many of their animals including pigs, chickens, ducks, goats, cattle, and carabaos.

Even without storms or typhoons, strong rains can also cause Hinay-an River to overflow, mostly affecting Sitio Iloco.

The months of drought dried up their springs and caused food shortage and lack of potable water. It also caused the prices of commodities to increase. People in the community reported contracting a skin disease during these extremely dry months.

## 2.3. Coping Mechanism

500 families were evacuated to the school. The community asked for assistance from the local, provincial, and national government and were able to receive relief goods and food packs. Roads were also cleared. The people helped each other through bayanihan to repair the damaged houses. 10% received insurance claims for their corn, rice, and banana by reporting to the Municipal Office of Agriculture (MAO) who also provided the community with seeds.

Poblacion had zero casualties since they received ample warning ahead of time through the rekorida.

To cope with the effects of drought, they resorted to buying water and saving it to make it last longer. They looked for wild indigenous root crops and planted some as well for their food supply. They constructed a greenhouse so they could plant vegetables.

## 2.4. Capacity of the Community

The community can access the internet through “piso-wifi” services and by using cellular data, although telecommunication and radio still have limited reach in higher areas.

The farmers frequently engage in bayanihan and are organized under the ILOCO Farm Association which gives them access to equipment and facilities. These include a harvester, tractor, transplanter, and vermiculture facilities.

Farmers receive assistance through the DA and MAO who provide them with farm inputs such rice seeds, fertilizers, and vegetable seeds. The Bureau of Fisheries and Aquatic Resources (BFAR) also gave fisherfolk feeds and fingerlings.

Old farmers and members of the farmers’ association are registered under the RSBA and PCIC, but new members are not yet registered. To increase registration rate, the LGU has made RSBSA registration mandatory.

Loans and financial services are available through CARD Bank, Inc. and Dunganon Bank Inc. which are both microfinance rural banks. Cooperatives also operate in the area.

The community has received training in enterprise development and disaster response.

## 2.5. Initial Plan

Implications	Solutions
Super typhoon, flooding	<ul style="list-style-type: none"> <li>• Increase preparedness; install an automated weather system</li> <li>• DRRMC warning</li> <li>• Continue registration for crop insurance</li> <li>• Construct a communal storage warehouse for rice and corn</li> <li>• Provision of seeds</li> </ul>
Drought 6 to 7 months	<ul style="list-style-type: none"> <li>• Small water impounding system proposed by the National Irrigation Administration</li> <li>• Conduct training in enterprise development for other sources of livelihood</li> <li>• Continuous production of root crops</li> </ul>

## 3. Summary and Findings

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Poblacion has diversified source of livelihoods with 3 main crops - rice, corn and sugarcane. In addition, a significant number of households are also engaged in small aquaculture as an alternative source of income and food. This could translate to access to more income source and therefore capacity to save. Introducing the culture of saving through community savings is an option. Savings allows households to have easy access to finances in response to shocks brought by different hazards.

Adequate access to water source is one asset farmers can further utilize. Small aquaculture can further be expanded and as well as enhancement of rice production given the access to irrigation through SWIP. Income from rice can be improved with this access to irrigation, but more importantly introduction of CSA approaches such as low external input rice production or even introduction of some systems of rice intensification principles to decrease input cost.

## 4. Recommendations

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The active support of the local government and Department of Agriculture via their AMIA program is an asset for the community, programming can be enhanced if outcome is towards holistic resilience building.

- a. Communal facilities such as storage for rice and corn, solar and mechanical dryer
- b. Access to crop varieties that are tolerant to current climate challenge (e.g drought tolerant crops)
- c. Access to timely climate information
- d. Flood control especially to areas (sitios) affected
- e. Support programs on aquaculture to fully utilize the opportunity.
- f. With the various SWIP, rice production can further be enhanced. Low external input rice production or systems of rice intensification is a CSA option that can be tested in the barangay to decrease the production cost.

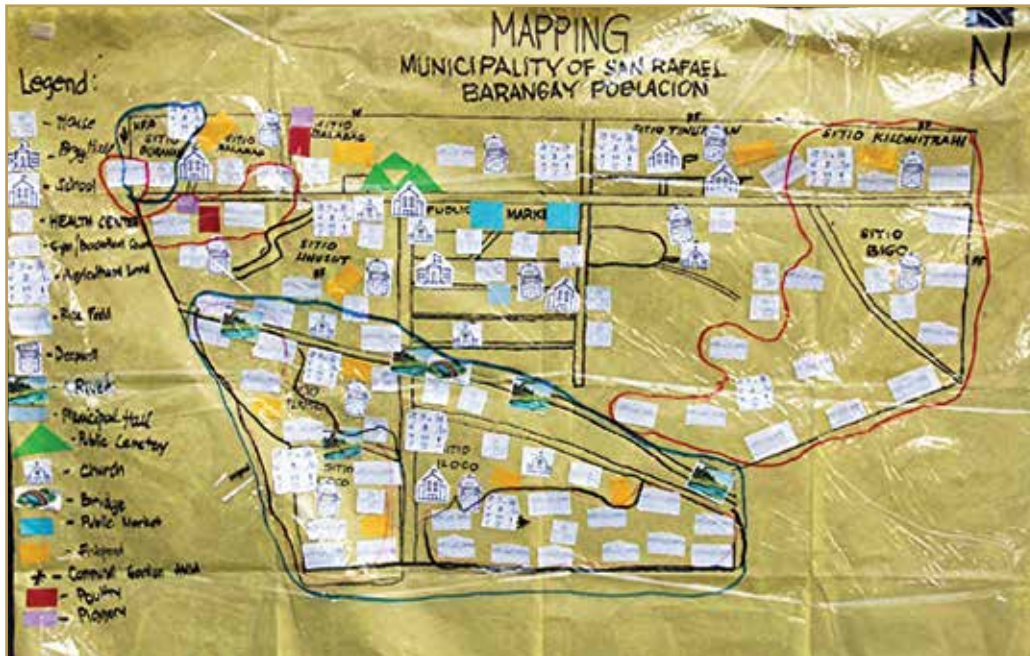


## Annex A. PCVRA Tools Used

### 1. Timeline

Super Typhoon Yolanda - November 8, 2013			
Features	Impacts on livelihood	Coping strategies implemented	Strategies in case of recurrence of the event
Strong wind, heavy rain and flood (2-3 days)	<ul style="list-style-type: none"> <li>Houses were damaged.</li> <li>Decrease in fruits and vegetable production</li> <li>Properties and infrastructures were damaged, including the public market, buildings, farm-to-market roads, etc.</li> <li>No electricity for over 3 months</li> <li>Loss of yield in rice, corn, sugarcane, banana, and coconut</li> <li>Fishponds were affected.</li> <li>Swine, poultry, and ruminant animals were drowned.</li> <li>Fruit trees and trees were uprooted</li> </ul>	<ul style="list-style-type: none"> <li>Assistance from the government (relief goods and food packs)</li> <li>Bayanihan system through clearing operation and repair of damaged properties and infrastructure</li> <li>Free seeds and farm inputs from the Department of Agriculture</li> <li>Assistance from private individuals</li> <li>Collaborative support of LGU and Barangay</li> <li>Reporting of damages among rice, corn, coconut, and banana</li> </ul>	<ul style="list-style-type: none"> <li>Increase preparedness with the help of the Barangay Disaster Risk Reduction Management Committee (BDRRMC).</li> <li>Establish an Automated Weather System</li> <li>Continuous registration in the PCIC; register new farmer beneficiaries.</li> <li>Communal storage facilities for rice and corn</li> <li>Provide planting materials like fruits and coconut seedlings</li> <li>Communal solar/mechanical dryer</li> <li>Continuous tree planting activities.</li> <li>Prepare a rescue vehicle and a first aid kit for emergencies</li> </ul>
Drought - 1986 and 2014			
Features	Impacts on livelihood	Coping strategies implemented	Strategies in case of recurrence of the event
6 -7 months (February to July ) No rain	<ul style="list-style-type: none"> <li>Springs were dried up</li> <li>Crops like rice, vegetables, and bananas were dried up.</li> <li>Food shortage and water crisis</li> <li>Price increase among commodities</li> <li>Decreased yield among crops (rice, corn, sugarcane, banana, and vegetables)</li> </ul>	<ul style="list-style-type: none"> <li>Looking for another source of water from spring and establishment of deep well.</li> <li>Limited use of food and water</li> <li>Utilized indigenous root crops as alternative food.</li> <li>Training in other livelihood programs</li> </ul>	<ul style="list-style-type: none"> <li>Establish a nursery/greenhouse for vegetable production</li> <li>Small water impounding; Solar pump (mini dam) proposed by NIA.</li> <li>Marketing training (enterprise development)</li> <li>Planting of drought tolerant varieties and root crops</li> </ul>

## 2. Spot Map



## 3. Seasonal Calendar

5 Years Ago	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<b>CLIMATE PATTERN</b> (Wet & Dry)												
<b>TYPHOON</b>			✓	✓						✓	✓	✓
<b>TEMPERATURE</b>	↓	→	↑	↑	→	↓	↓	→	→	↓	↓	↓
<b>RAINFALL</b>	Yellow	Yellow	Brown	Brown	Brown	Red	Red	Brown	Brown	Red	Red	Red
<b>LIVELIHOODS:</b>												
A. Rice 90%		Harvest			Land Prep	Planting (1st crop)			Harvest	Land Prep	Planting (2nd crop)	
B. Corn 25%		Harvest (2nd crop)		Land Prep (1st crop)				Harvest (1st crop)			Land Prep (2nd crop)	
C. Sugarcane 30%		Harvest		Land Prep	Planting season							
D. Vegetables 75%	ALL YEAR ROUND											
E. Livestock (poultry) 50%	ALL YEAR ROUND											
F. Fishing 20%	ALL YEAR ROUND											

15 Years Ago	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<b>CLIMATE PATTERN</b> (Wet & Dry)												
<b>TYPHOON</b>										✓	✓	✓
<b>TEMPERATURE</b>	↓	↓	↓	↑	→	→	→	→	→	→	↓	↓
<b>RAINFALL</b>	Low	Low	No Rain	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	High	High	Moderate
<b>LIVELIHOODS:</b>												
A. Rice 70%		Harvest			Land Prep (1st crop)	Planting (1st crop)			Harvest	Land Prep	Planting (2nd crop)	
B. Corn 20%		Harvest (2nd crop)		Land Prep (1st crop)				Harvest (1st crop)			Land Prep (2nd crop)	
C. Sugarcane 30%		Harvest		Land Prep	Planting season							
D. Backyard (Upgraded swine) 5%		Harvest			Land Prep	Planting (1st crop)			Harvest	Land Prep	Planting (2nd crop)	
E. Vegetables 60%	ALL YEAR ROUND											
F. Fishing 10%	ALL YEAR ROUND											
G. Copra 30%	ONCE A YEAR											
H. Banana 40%	ALL YEAR ROUND											

30 Years Ago	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<b>CLIMATE PATTERN</b> (Wet & Dry)												
<b>TYPHOON</b>										✓	✓	✓
<b>TEMPERATURE</b>	↓	↓	↑	↑	→	→	→	→	→	↓	↓	↓
<b>RAINFALL</b>	Low	Low	No Rain	Moderate	Moderate	Moderate	Moderate	Low	Low	High	High	Moderate
<b>LIVELIHOODS:</b>												
A. Rice 50%		Harvest			Land Prep (1st crop)	Planting (1st crop)			Harvest	Land Prep	Planting (2nd crop)	
B. Corn 4%		Harvest (2nd crop)		Land Prep (1st crop)				Harvest (1st crop)			Land Prep (2nd crop)	
C. Sugarcane 20%		Harvest		Land Prep	Planting season							
D. Upgraded Swine 5%		Harvest			Land Prep	Planting (1st crop)			Harvest	Land Prep	Planting (2nd crop)	
E. Vegetables	ALL YEAR ROUND											
F. Fishing	ALL YEAR ROUND											
G. Copra	ONCE A YEAR											
H. Banana 60%	ALL YEAR ROUND											

**LEGEND:**

<b>CLIMATE PATTERN</b>	<b>TEMPERATURE</b>	<b>RAINFALL</b>
Wet	↑ High	High
Dry	→ Average	Moderate
	↓ Low	Low
		No Rain



## 4. Livelihood Matrix

LIVELIHOOD: RICE FARMING	Roles		Decisions		Sectoral Role		
	Women	Men	Women	Men	Youth 15-30	31-59	Senior Citizen
1. Seed selecting	30%	70%	50%	50%	10%	80%	10%
2. Land preparation	20%	80%	50%	50%	10%	80%	10%
3. Seed soaking		100%	50%	50%	20%	70%	10%
4. Seed broadcasting	10%	90%	10%	90%	15%	75%	10%
5. Application of insurance under PCIC	50%	50%	50%	50%	10%	45%	45%
6. Spraying of herbicides (onwards)		100%		100%	10%	85%	5%
7. Letting water inside paddy field		100%		100%	10%	50%	40%
8. Fertilizer application (First dressing)		100%		100%	10%	80%	10%
9. Spraying of insecticides and pesticides		100%		100%	10%	85%	5%
10. Spraying of herbicides							
11. Fertilizer application (Second dressing)		100%		100%	10%	85%	5%
12. Fertilizer application (Tillering stage)		100%		100%	10%	85%	5%
13. Spraying of fungicides		100%		100%	10%	85%	5%
14. Spraying of insecticides		100%		100%	10%	85%	5%
15. Clearing/Monitoring		100%		100%	10%	85%	5%
16. Fertilizer application (milking stage)		100%		100%		60%	40%
17. Harvesting		100%		100%	10%	85%	5%
18. Drying	50%	50%	50%	50%	30%	60%	10%
19. Marketing/storing seeds	40%	60%	40%	60%	50%	45%	5%
	50%	50%	50%	50%	10%	70%	20%

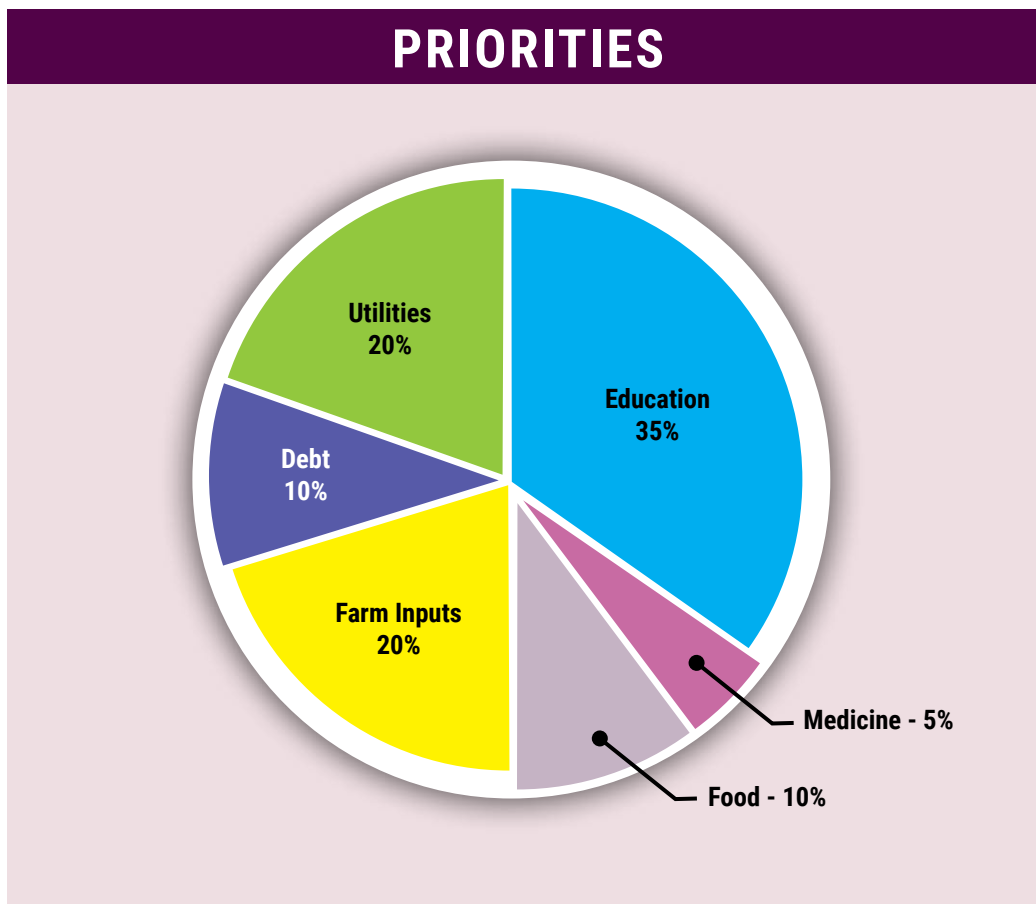
LIVELIHOOD: CORN	Roles		Decisions		Sectoral Role		
	Women	Men	Women	Men	Youth 15-30	31-59	Senior Citizen
1. Seed selecting	50%	50%	50%	50%		50%	50%
2. Land preparation	20%	80%	20%	80%	30%	40%	30%
3. Spraying of herbicides		100%		100%	30%	50%	20%
4. Planting	80%	20%	20%	80%	30%	60%	10%
5. Application of insurance under PCIC	50%	50%	50%	50%	10%	50%	40%
6. Fertilizer application (First application)	50%	50%	50%	50%	40%	50%	10%
7. Spraying of herbicides		100%		100%	30%	50%	20%
8. Fertilizer application (Second application)	50%	50%	50%	50%	10%	50%	40%
9. Monitoring		100%		100%	10%	50%	40%
10. Harvest preparation	50%	50%	50%	50%	10%	50%	40%
11. Harvesting	60%	40%	50%	50%	30%	60%	10%
12. Drying	20%	80%		100%	40%	60%	
13. Marketing/selling	80%	20%	80%	20%	10%	50%	40%

LIVELIHOOD: SUGARCANE	Roles		Decisions		Sectoral Role		
	Women	Men	Women	Men	Youth 15-30	31-59	Senior Citizen
1. Variety selection	50%	50%	50%	50%	10%	40%	50%
2. Preparation of sugarcane cuttings	90%	10%	90%	10%	30%	50%	20%
3. Land preparation		100%		100%	10%	50%	40%
4. Planting	100%			100%	30%	50%	20%
5. Fertilizer application (First dressing)	90%	10%	90%	10%	40%	50%	10%
6. Site plowing (open)		100%	50%	50%	10%	80%	10%
7. Weeding /spraying of herbicides	100%		50%	50%	40%	50%	10%
8. Site plowing (close)		100%		100%	10%	80%	10%
9. Site plowing (open)		100%		100%	10%	80%	10%
10. Weeding /spraying of herbicides	100%		50%	50%	40%	50%	10%
11. Fertilizer application (Second dressing)	90%	10%	90%	10%	40%	50%	10%
12. Site plowing (close)		100%		100%	10%	80%	10%
13. Monitoring		100%		100%	10%	60%	30%
14. Harvest preparation	50%	50%	50%	50%	10%	60%	30%
15. Harvesting	50%	50%	50%	50%	50%	40%	10%
16. Hauling/selling	50%	50%	50%	50%	50%	40%	10%

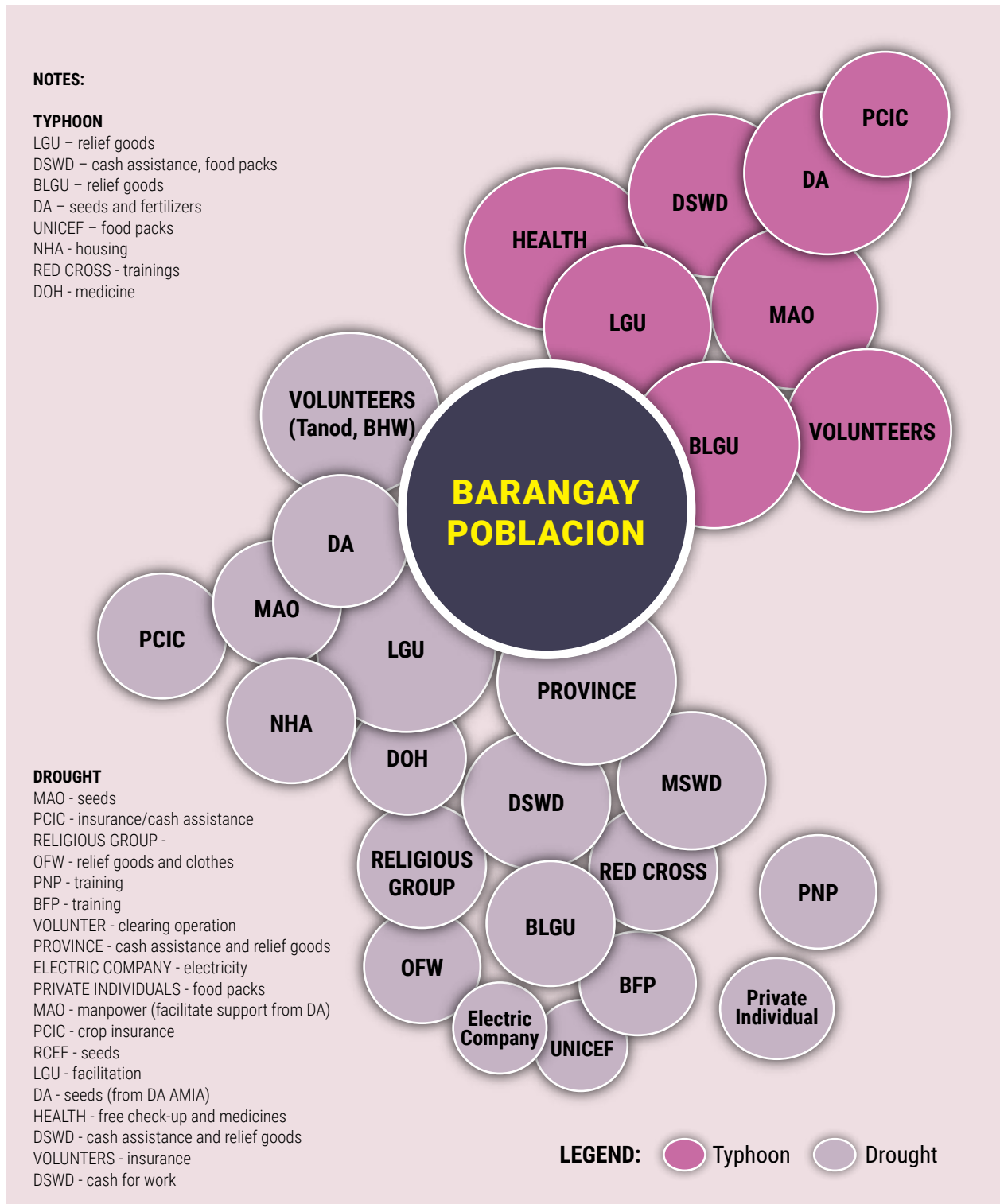
## 5. Resource Flow

LIVELIHOODS	Outflow	Income
<b>1. BANANA (1 ha)</b>	<ul style="list-style-type: none"> <li>• Banana tissue 2000 pcs x 35 = PhP 70,000</li> <li>• Seedling tray/coconut shell(bunot) 10 sacks x 400/sacks = 4,000</li> <li>• After 1 month of transplanting application of fertilizer 25 kilos = 22,400</li> <li>• 4-5 months application of fertilizer 2 sacks x 260 = 5,200</li> <li>• After 6 months application of fertilizer (Yara winner) = 2,800</li> <li>• Spray = 700</li> <li>• Polly bags 50 x 280 = 14,000</li> <li>• Labor fee for planting and harvest = 30,000</li> <li>• Application of herbicide 2 gallon x 1500 = 3,000</li> <li>• Spray 4 gallons x 1,500 = 6,000</li> </ul> <p style="text-align: right;"><b>Total: PhP 158,100</b></p> <p><b>Harvest:</b></p> <ul style="list-style-type: none"> <li>- 1800 x 10 = 18,000</li> <li>- 18,000 x 42 = 756,000</li> <li>- 756,000 – 158,100 = <b>PhP 598, 600</b></li> </ul>	<p>Outflow = PhP158,100</p> <p>Inflow = PhP756,000</p> <hr/> <p><b>Income: PhP 598,600</b></p>

LIVELIHOODS	Outflow	Income
<b>2. RICE FARMING (1 ha)</b>		
	<ul style="list-style-type: none"> <li>• Land preparation:               <ul style="list-style-type: none"> <li>- Gahit = PhP 1,400</li> <li>- Hampil = 2,400</li> <li>- Arado = 2,400</li> <li>- Labay = 800</li> <li>- Kuliglig = 2,400</li> </ul> </li> <li>• Food = 3,000</li> <li>• Seeds (4 sacks x 1,400) = 6,200</li> <li>• Fertilizer (6 sacks x 1,800) = 10,800</li> <li>• Insecticide = 1,200</li> <li>• Herbicide = 1,600</li> <li>• Foliar (1 liter) = 800</li> <li>• Spray = 1,200</li> <li>• Labor application of fertilizer = 2,000</li> <li>• Hauling = 4,000</li> <li>• Food for laborer = 2,000</li> </ul> <p style="text-align: right;"><b>TOTAL: PhP 42,200</b></p>	<p>Harvest 80 sacks x 41/kilos x 12 = PhP 39,360</p> <p>Outflow = PhP 42,200 Inflow = PhP 39,360</p> <p><b>Income: PhP 2,840</b></p>
<b>3. SUGARCANE</b>		
	<ul style="list-style-type: none"> <li>• Land preparation               <ul style="list-style-type: none"> <li>- Plowing 8 hrs x 1500/hr = PhP 12,000</li> <li>- Rastillo/ginatapan 2 hrs x 1,200/hr = 240</li> <li>- Idas 3 days x 500/day x 2 = 3,000</li> <li>- Patdan 1 laksa (10,000) x 4,500 x 8 = 36,000</li> <li>- Labor fee 10 x 300/day x 3 = 9,000</li> </ul> </li> <li>• Spray               <ul style="list-style-type: none"> <li>- Herbicide 650/liter x 1 = 650</li> <li>- Spray 240 (brand) 1 gallon = 750</li> <li>- Labor fee 600/day x 4 = 2,400</li> <li>- Fertilizer 4 sacks x 1900 = 7,600</li> <li>- Fertilizer 4 sacks x 1000 = 4,000</li> <li>- Labor fee = 1,500</li> <li>- Tudling (package) = 4,000</li> <li>- Top dressing 2 sacks x 1,900 = 2,800</li> <li>- Top dressing 2 sacks x 1,000 = 2,000</li> <li>- Panginlas/palimpyo (package) = 4,000</li> <li>- Laborer (patapas) 8 x 700/tons 8 x 8 = 64 tons x 700 = 44,800</li> </ul> </li> <li>• Truck rental 64 tons x 300 = 19,200</li> <li>• Driver tip 300/trip x 8 = 2,400</li> </ul> <p><b>Harvest:</b></p> <ul style="list-style-type: none"> <li>• 64 tons, 8 truck x 3,400 = <b>PhP 217,600</b></li> </ul> <p>(For the next planting season the capital/ expenses will lessen, resulting in a bigger income))</p>	<p>Outflow = PhP158,500 Inflow = PhP217,600</p> <p><b>Income: PhP 59,400</b></p>



## 6. Venn Diagram



# Barangay Ilongbukid

## 1. Introduction

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### 1.1. Barangay Profile

Brgy. Ilongbukid has eight sitios namely, Sitio Kalsada, Sitio Tukdaw, Sitio Luyan, Sitio Proper, Sitio Poblacion West, Sitio Balik'an, Sitio Cabugao, and Sitio Paradise.

It is located at the southwestern part of the municipality, 3.5 km from the Poblacion of San Rafael. Bordering the north is Brgy. San Florentino, on the east is Brgy. Poscolon, on the south is Barangay Aripdip, and on the west is the Municipality of San Enrique.

The people rely on the fertile land for their main source of income. Their major crops are rice, corn, and vegetables.

### 1.2. Household Classification

- Lower class – majority
- Middle class – 10%
- Upper class – 3%

### 1.3. Livelihood Status

70% of farmers in Brgy. Ilongbukid farm rice, while 30% plant corn. 90% engage in hog raising. Only 10% are landowners. 50% of their rice is irrigated while the rest is rainfed.

All sitios are raising pigs for fattening and are engaging in backyard hog raising. Sitio Cabugao has poultry farms. Sitio Cabugao has a resort.

Sitio Kalsada, Sitio Luyan, Sitio Balik'an have the biggest areas of rice field. Sitio Balik'an has two dams, an irrigation system, and Tuburan river which supplies water to the barangay's rice fields and households.

All sitios use a jetmatic pump to pump ground water to the surface.

The barangay faces challenges in transportation since only the main road is cemented. Large trucks also damage the road. Movement and transportation is difficult during rains.

Non-agricultural livelihoods are:

- Sari-sari store – 40%
- Construction – 10%
- Professional – 40%
- OFW – 30%
- Vending – 5%

## 1.4. Sectoral Involvement

### a. Rice

In rice farming, men play a major role in doing heavy activities from seed selection to marketing. Women take their place in drying activities when the men are not at home. Men usually lead as decision-makers in rice farming. However, women are responsible for budgeting their expenses. Among sectoral roles, middle aged community members are usually engaged in these certain commodities or livelihoods.

### b. Corn

In planting corn, men play a major role in doing heavy activities. Women apply the fertilizer and chemicals to the plants. Like in rice-farming, men also lead major decisions while women are expected to budget their expenses. In terms of sectoral roles, 80% of middle age members dominate the activities.

### c. Pig raising

In pig raising, men are also in charge of heavy activities. Women are engaged in feeding management and both have equal participation in marketing. In terms of sectoral role, middle age members dominate the field by 50%, the youth by 30%, and senior citizens by 20%.

## 2. Climate Change Perception

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### 2.1. Climate Hazard

Brgy. Ilongbukid experienced Supertyphoon Yolanda, Typhoon Odette, Typhoon Frank, Typhoon Paeng, and Typhoon Ruping.

### 2.2. Impact

All sitios are affected by typhoons. These events caused anxiety among community members. Sitio Paradise, Sitio Tukdaw, Sitio Sitio Kalsada, Sitio Luyan are the most vulnerable in drought Sitio Kalsada, Sitio Tukdaw, Sitio Luyan, and Sitio Balik'an are affected by flood because of overflowing of water from the river and dam. Even without typhoons, heavy rains can cause flood.

### 2.3. Coping Mechanism

Strong typhoon resulting to flood is the risk identified by the community. Based on their experiences, response after the hazard has been the way the community has been coping. The local government, CSOs and private sector has been diligently providing assistance after the disaster. Seeds are provided by the LGU and the DA.

### 2.4. Capacity of the Community

The barangay receives aid from government programs. BFAR provides them with fish fingerlings, and the DA gives rice seeds and fertilizer subsidy. Many have also received insurance claims from PCIC.

The farmers receive trainings through farmers' associations which also provide them access to pre-production equipment including a reaper, a hand tractor, a corn sheller, water pumps, and dryers. Post-harvest facilities are available to only a few private owners. These include four dryers and one mobile rice mill.

Internet connection through "piso-net" services is still weak but all of the community members have access to the internet. Most of the households rely on TV and the internet for information; only 5% use radios.



The community is working on increasing RSBSA registration through house-to-house campaigning. The community shows solidarity through bayanihan and has also organized themselves into groups which conduct their own livelihood projects with support from DA. The following groups have been identified: Ilongbukid Women’s Association (DSWD), AMIA Farmers Association, and Ilongbukid Irrigators Association.

## 2.5 Initial Plan

Implications	Solutions
Loss of agriculture-based livelihoods	<ul style="list-style-type: none"> <li>• Provide support in facilitating the registration of all farmers under the RSBA and increase awareness about the benefits of PCIC</li> </ul>
Difficulty in transporting goods	<ul style="list-style-type: none"> <li>• Improvement of farm-to market roads for better commerce</li> </ul>
Preparedness of community	<ul style="list-style-type: none"> <li>• Better evacuation plan and ensure the community is informed of this plan and structure.</li> <li>• Rescue equipment of the barangay should be improved</li> </ul>

## 3. Summary and Findings

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With floods threatening the livelihoods of the community, a need to strengthen collective action in order to increase the capacity of farmers to respond and adapt in the context of climate variability.

Results reveal that farmers are not organized, as evidenced by the low rate of RSBA registration, low capacity due to limited access to training, farmers access loans from other organizations outside of their barangay, and access to production and post-harvest support is very limited and controlled by private individuals.

The barangay need to enhance their disaster risk reduction programming towards preparedness and adaptation. Previous actions reveal that they are more focused in response (matter after the fact).

## 4. Recommendations

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- a. Establish a formal farmers' association or even a cooperative so farmers can collectively address their issues and demand and negotiate better for services.
- b. In relation to number 1, farmer organizations can build partnership with financial institutions to provide better access and rate for their members and invest in adaptive measures for their agricultural-based livelihoods.
- c. Promote and strengthen the concept of community savings and build on the current groups to expand membership.
- d. Re-program the baranga's BDRRM plan to strengthen preparedness and adaptation to the recurring hazards, instead of just responding and providing relief.



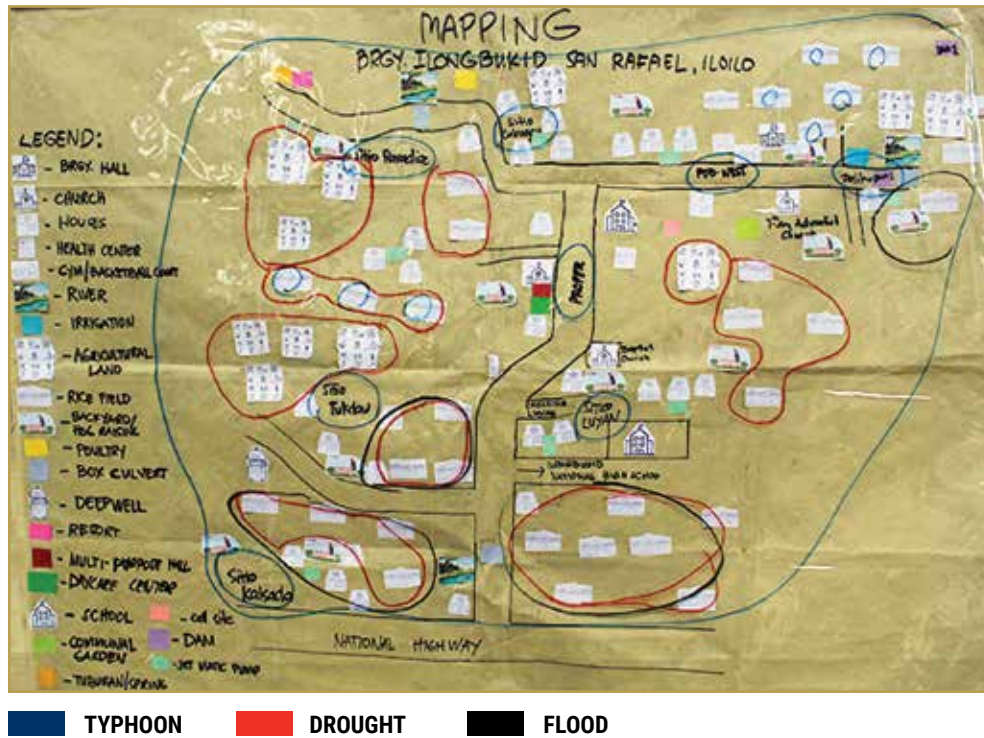
## Annex B. PCVRA Tools Used

### 1. Timeline

Super Typhoon Yolanda - November 8, 2013			
Features	Impacts on livelihood	Coping strategies implemented	Strategies in case of reoccurrence of the event
Strong wind (4 hours), heavy rain and flooding (2-3 days)	<ul style="list-style-type: none"> <li>Houses and infrastructure were damaged, including the Barangay Hall, Church, commercial building, and farm-to-market road.</li> <li>Damaged agriculture commodities like rice, corn, sugarcane, and high-value crops (vegetables).</li> <li>Damaged natural resources (trees were uprooted; soil erosion)</li> <li>Electricity and internet interruption</li> <li>Employees were stranded due to unpassable roads</li> </ul>	<ul style="list-style-type: none"> <li>Government and NGOs provided assistance by giving relief goods and food packs</li> <li>Bayanihan system (cash for work) through clearing operations and repair of damaged properties and infrastructure</li> <li>Free seeds and farm inputs from the Department of Agriculture</li> <li>Assistance from private individuals</li> <li>Collaborative support of LGU and Barangay</li> <li>Reporting and monitoring of damages among rice, corn, coconut, and banana.</li> </ul>	<ul style="list-style-type: none"> <li>Increase preparedness through DRR training (BDRRMC)</li> <li>Livelihood programs for managing livestock and poultry, fishpond and fingerlings, sari-sari stores, food processing, and vegetable gardening</li> <li>Construction of canals and dams (irrigation)</li> <li>Continuous training and seminars for farmers</li> <li>Stockpiling of food and continuous tree planting</li> <li>Reducing the price of fertilizers and seeds</li> <li>Establishing an evacuation center for animals and preparing enough medicine supplies</li> </ul>

Drought - 1983			
Features	Impacts on livelihood	Coping strategies implemented	Strategies in case of reoccurrence of the event
10 months	<ul style="list-style-type: none"> <li>Springs were dried up</li> <li>Crop failure among rice, corn vegetables, and banana</li> <li>Forage crops and grasses died</li> <li>Food shortage and water crisis</li> <li>Heat stroke among animals and people</li> </ul>	<ul style="list-style-type: none"> <li>Conducted prayer force for the community</li> <li>Construction of deep well in every household</li> <li>Aid and support from the local and national government</li> </ul>	<ul style="list-style-type: none"> <li>Locate a spring that has enough water for community needs</li> <li>Plant root crops</li> <li>Limited use of water or water conservation</li> <li>Create savings and continue registration of insurance at PCIC</li> </ul>

## 2. Spot Map



## 3. Seasonal Calendar

5 Years Ago	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<b>CLIMATE PATTERN</b> (Wet & Dry)												
<b>TYPHOON</b>				✓		✓			✓	✓	✓	✓
<b>TEMPERATURE</b>	↓	↑	↑	↑	↑	→	→	→	→	↓	↓	↓
<b>RAINFALL</b>												
<b>LIVELIHOODS:</b>												
A. Rice 90%					Land Prep	Planting (1st crop)		Harvest	Land Prep	Planting (2nd crop)		Harvest
B. Corn 40%		Land Prep	Planting (1st crop)			Harvest		Land Prep	Planting (2nd crop)			Harvest
C. Livestock and poultry 70%	ALL YEAR ROUND											
D. Sugarcane 5%	ALL YEAR ROUND											

15 Years Ago	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<b>CLIMATE PATTERN</b> (Wet & Dry)												
<b>TYPHOON</b>						✓		✓		✓	✓	✓
<b>TEMPERATURE</b>	↓	→	↑	↑	↑	↑	→	→	→	→	↓	↓
<b>RAINFALL</b>	Low	Low	Low	No Rain	High	High	Moderate	Moderate	Low	Low	Low	Moderate
<b>LIVELIHOODS:</b>												
A. Rice 50%					Land Prep	Planting (1st crop)		Harvest	Land Prep	Planting (2nd crop)		Harvest
B. Corn 10%		Land Prep	Planting (1st crop)			Harvest		Land Prep	Planting (2nd crop)			Harvest
C. Livestock 50%	ALL YEAR ROUND											
D. Sugarcane 5%	ALL YEAR ROUND											

30 Years Ago	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<b>CLIMATE PATTERN</b> (Wet & Dry)												
<b>TYPHOON</b>						✓		✓			✓	✓
<b>TEMPERATURE</b>	↓	→	↑	↑	↑	→	→	→	→	→	↑	↓
<b>RAINFALL</b>	Low	Low	Low	No Rain	High	High	Moderate	Moderate	Moderate	Low	Low	Low
<b>LIVELIHOODS:</b>												
A. Rice farming 40%					Land Prep	Planting (1st crop)			Harvest			
B. Livestock 30%	ALL YEAR ROUND											

**LEGEND:**

<b>CLIMATE PATTERN</b>	<b>TEMPERATURE</b>	<b>RAINFALL</b>
Wet	↑ High	High
Dry	→ Average	Moderate
	↓ Low	Low
		No Rain

## 4. Livelihood Matrix

LIVELIHOOD: PIG RAISING	Roles		Decisions		Sectoral Role		
	Women	Men	Women	Men	Youth 15-30	31-59	Senior Citizen
1. Construction of pen	-	100%	20%	80%	30%	50%	20%
2. Purchasing of stock	20%	80%	40%	60%	30%	50%	20%
3. Purchasing of feeds	20%	80%	40%	60%	30%	50%	20%
4. Feeding	60%	40%	60%	40%	30%	50%	20%
5. Medication	20%	80%	20%	80%	30%	50%	20%
6. Monitoring	50%	50%	50%	50%	30%	50%	20%
7. Marketing	50%	50%	50%	50%	30%	50%	20%

LIVELIHOOD: RICE FARMING	Roles		Decisions		Sectoral Role		
	Women	Men	Women	Men	Youth 15-30	31-59	Senior Citizen
1. Seed selection	20%	80%	20%	80%	10%	80%	10%
2. Land preparation	20%	80%	20%	80%	10%	80%	10%
3. Seed soaking	-	100%	-	100%	10%	80%	10%
4. Seed incubation	-	100%	-	100%	10%	80%	10%
5. Seed broadcasting	-	100%	-	100%	10%	80%	10%
6. Registering for insurance under PCIC	30%	70%	50%	50%	10%	80%	10%
7. Spraying of herbicides	-	100%	-	100%	10%	80%	10%
8. First fertilizer application	-	100%	-	100%	10%	80%	10%
9. Water management/irrigation	-	100%	-	100%	10%	80%	10%
10. Clearing of dikes	-	100%	-	100%	10%	80%	10%
11. Second fertilizer application	-	100%	-	100%	10%	80%	10%
12. Spraying of insecticides	-	100%	-	100%	10%	80%	10%
13. Monitoring	30%	70%	30%	70%	10%	80%	10%
14. Harvesting	40%	60%	40%	60%	10%	80%	10%
15. Drying	80%	20%	80%	20%	10%	80%	10%
16. Marketing/storing	-	100%	-	100%	10%	80%	10%

LIVELIHOOD: CORN	Roles		Decisions		Sectoral Role		
	Women	Men	Women	Men	Youth 15-30	31-59	Senior Citizen
1. Seed selection	-	100%	20%	80%	10%	80%	10%
2. Land preparation	30%	70%	30%	70%	40%	50%	10%
3. Planting	70%	30%	30%	70%	40%	50%	10%
4. Registering for insurance under PCIC	-	100%	20%	80%	10%	80%	10%
5. Spraying of herbicides	70%	30%	30%	70%	40%	50%	10%
6. First fertilizer application	70%	30%	30%	70%	40%	50%	10%
7. Second fertilizer application	30%	70%	30%	70%	40%	50%	10%
8. Monitoring/spraying of pesticides	70%	30%	30%	70%	40%	50%	10%
9. Harvesting	70%	30%	50%	50%	50%	40%	10%
10. Drying	10%	90%	10%	90%	50%	40%	10%
11. Marketing/storing	50%	50%	50%	50%	40%	50%	10%

### Summary:

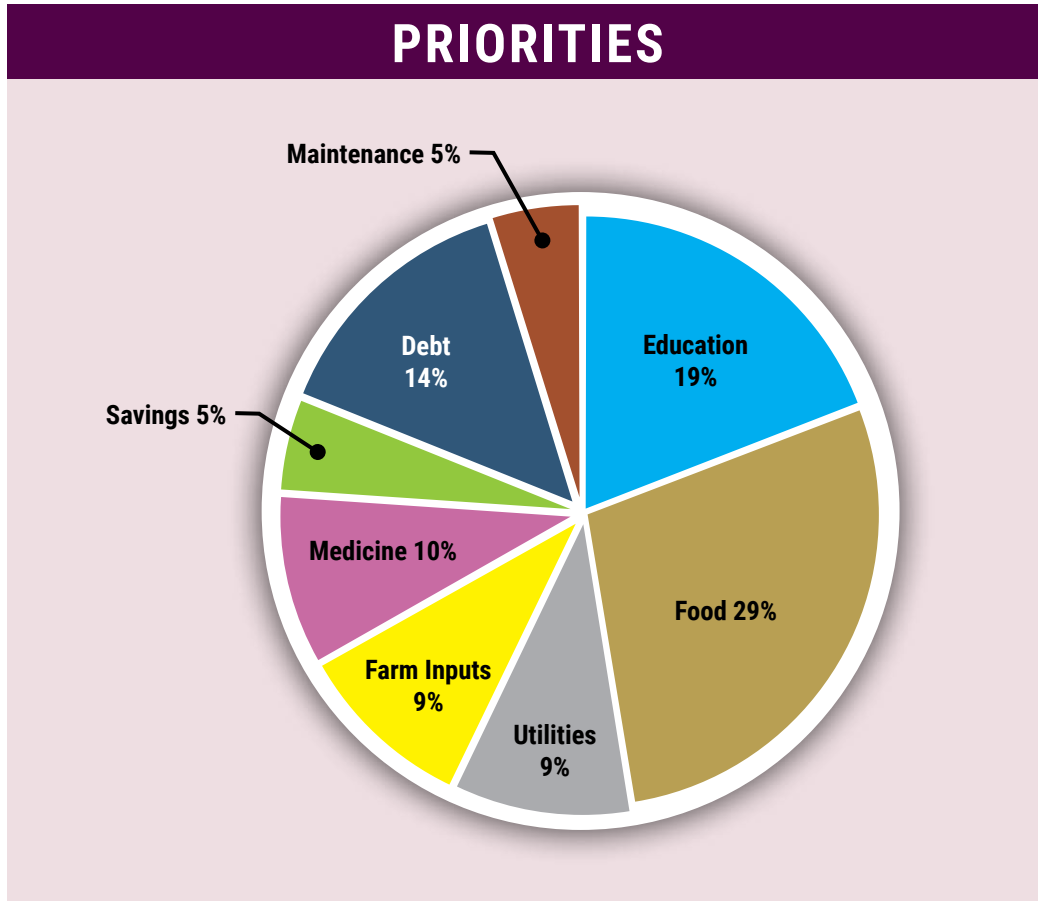
- In rice farming, men play a major role in doing heavy activities from seed selection to marketing. Women take their place in drying activities when the men are not at home. Men usually lead as decision-makers in rice farming. However, women are responsible for budgeting their expenses. Among sectoral roles, middle aged community members are usually engaged in these certain commodities or livelihoods.
- In planting corn, men play a major role in doing heavy activities. Women apply the fertilizer and chemicals to the plants. Like in rice-farming, men also lead major decisions while women are expected to budget their expenses. In terms of sectoral roles, 80% of middle age members dominate the activities.
- In pig raising, men are also in charge of heavy activities. Women are engaged in feeding management and both have equal participation in marketing. In terms of sectoral role, middle age members dominate the field by 50%, youth by 30%, and senior citizens by 20%.

## 5. Resource Flow

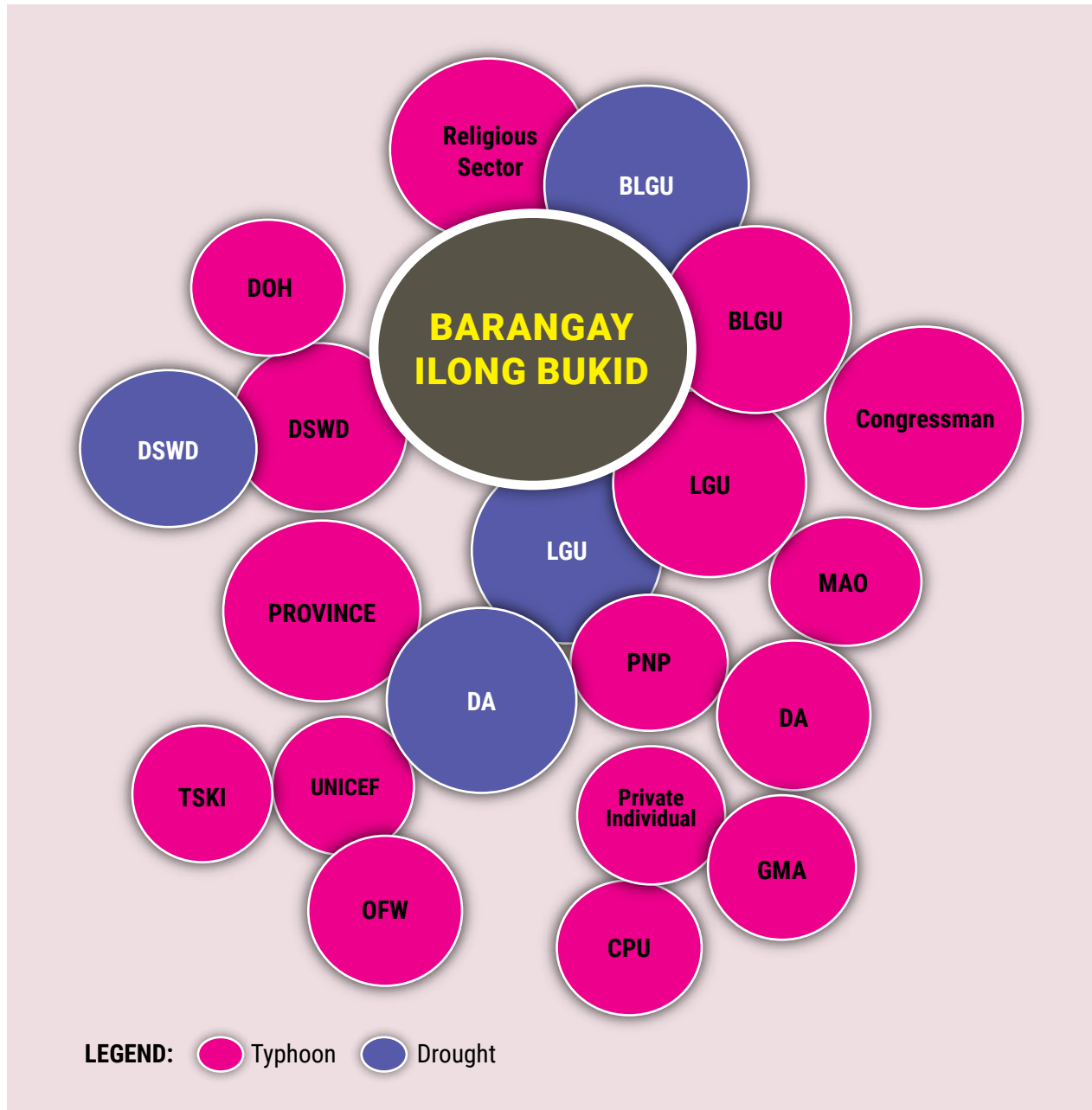
LIVELIHOODS	Outflow	Income
<b>1. RICE FARMING (1 ha)</b>		
	<ul style="list-style-type: none"> <li>● Seeds 4 sacks x 1300 = PhP 5,200</li> <li>● Land preparation:               <ul style="list-style-type: none"> <li>- Pakariskis/harrowing w/food 4x350 = 1,400</li> <li>- Tractor (Package) 2000/sack x 4 = 8,000</li> <li>- Food 3 x 1day = 500</li> <li>- Hampil 4 x 350 x 1 day = 1,400</li> <li>- Labay/pantay ng lupa labor w/food = 500</li> </ul> </li> <li>● Direct               <ul style="list-style-type: none"> <li>- Labor 350 x 1x1day = 350</li> <li>- Labor (pag gawa ng kanal) 350x4x1day = 1,400</li> </ul> </li> <li>● After 3 days               <ul style="list-style-type: none"> <li>- Spray herbicide ½ liter = 1,250</li> <li>- Labor w/ food 350x1x1day = 350</li> <li>- Bionet para sa kuhol 250/box = 250</li> </ul> </li> <li>● Basal               <ul style="list-style-type: none"> <li>- Fertilizer/urea = 1,350</li> <li>- Triple 14 = 1,800</li> <li>- Labor w/food 350x1x1day = 350</li> <li>- Spray insecticide (magnum) = 800</li> <li>- Labor w/ food 350x1x1day = 350</li> </ul> </li> <li>● Top dress               <ul style="list-style-type: none"> <li>- Triple 14 2 sacks x1800 = 3,600</li> <li>- Labor w/ food 350x1x1day = 350</li> </ul> </li> <li>● Harvest               <ul style="list-style-type: none"> <li>- Conduction 80 sacks x40 = 3,200</li> <li>- Food (12 laborer) = 1,000</li> </ul> </li> <li>● ex.30,000x Interest 10%=3000x3mons = 9,000</li> </ul>	Harvest: 80 sacks x 50/sack x15/kl = PhP 60,000  Outflow = PhP 42,400 Inflow = PhP 60,000  <b>Income: PhP 17,600</b>
	<b>TOTAL : PhP 42,400</b>	
<b>2. PIG RAISING (Fattening)</b>		
	<ul style="list-style-type: none"> <li>● 2 piglets x 3500 = PhP 7,000</li> <li>● Feeds               <ul style="list-style-type: none"> <li>- Free starter (25kilos) 2sacks x1800 = 3,600</li> <li>- Hog starter 2 sacks x 1800 = 3,600</li> </ul> </li> <li>● Vitamins = 500</li> <li>● Feeds               <ul style="list-style-type: none"> <li>- Hog grower 3 sacks x1850 = 5,550</li> <li>- Hog finisher 2 sacks x1850 = 3,700</li> </ul> </li> </ul>	Disposal/selling: 80 kilos x 120 = 9600 x 2 = PhP 19,200  Outflow = PhP 23,950 Inflow = PhP 19,200  <b>Income: PhP 4,750</b>
	<b>TOTAL: PhP 23,950</b>	



LIVELIHOODS	Outflow	Income
<b>3. CORN (1 ha.)</b>		
	<ul style="list-style-type: none"> <li>● Seeds 2 bags x 5500 = PhP 11,000</li> <li>● 1st and 2nd application <ul style="list-style-type: none"> <li>- Spray herbicide 2 gallong x 1300 = 2,600</li> </ul> </li> <li>● Land preparation <ul style="list-style-type: none"> <li>- Paggahit 14 laborerx300x1day = 3,000</li> <li>- Panggas 14 laborer x 300x1day = 4,200</li> </ul> </li> <li>● Basal <ul style="list-style-type: none"> <li>- Urea 3 bag x1350 = 4,050</li> <li>- Triple 14 2 bags x1800 = 3,600</li> <li>- 10 laborer x 300 x 1day = 3,000</li> </ul> </li> <li>● Spray <ul style="list-style-type: none"> <li>- herbicide w/labor 4 laborer x300 x 1day = 1,200</li> <li>- food for 4 laborer = 500</li> </ul> </li> <li>● Dressing <ul style="list-style-type: none"> <li>- Urea 3 bags x1350 = 4,050</li> <li>- 10 laborer x300x1day = 3,000</li> </ul> </li> <li>● Harvest (pagtipon at pagtanggap ng butil sa cobs) 10 laborer = 10,000</li> <li>● Hauling per sacks <ul style="list-style-type: none"> <li>- 300 sacks (8 tons) x30 = 9,000</li> </ul> </li> <li>● Sealer (22 sacks x50x19) = 22,900</li> <li>● Food for laborer = 1,000</li> <li>● Dryer (300 sacks-22sacks) = 278 sacks x 40 = 11,120</li> <li>● Interest/rent = 15,000</li> <li>● Interest for financer (ex. 50,000 x 3% =1500+50k) = 51,500</li> </ul>	<ul style="list-style-type: none"> <li>Harvest: 80 sacks x 50 x 21/kl = PhP 291,900</li> <li>Outflow = PhP 160,720</li> <li>Inflow = PhP 291,900</li> <li><b>Income: PhP 131,180</b></li> </ul>
	<b>TOTAL:</b>	
		<b>PhP 160,720</b>



## 6. Venn Diagram



# Barangay San Andres

## 1. Introduction

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### 1.1. Barangay Profile

Brgy. San Andres is located east of Brgy. Poblacion and south of Brgy. San Florentino. It is flanked on the west by San Enrique and by the city of Passi and the municipality of Dumarao, Capiz on the north. It is three kilometers away from Brgy. Poblacion, and it takes ten minutes to reach the barangay hall. It is accessible by all types of vehicles and public transportation.

It has a total land area of 974.0931 hectares. 764.4858 hectares is used in agriculture, 9.0218 hectares is residential, 2.4609 hectares is for institutional use, and 4.0000 hectares is for industrial use. The barangay is composed of 7 sitio - Sitio Cagcag, Sitio Santol, Sitio Apo, Proper, Sitio Nabonbon, Sitio Layon Bayo, Sitio Cabas-an.

### Population

As of the 2020 census, Brgy, San Andres has a population of 2,935. Those 15 to 59 years old, who are potential members of the work force, make up 60.44% of the population. Those aged 14 years old and below comprise 30.87% of the population, while the oldest of the population (60 years old and above) compose 8.69%.

### 1.2. Livelihood Status

Like the first two barangays, the community of Brgy. San Andres also relies on agriculture for their source of income. Almost all of them plant rice (90%) and raise pigs (90%). Many plant corn (80%) and some of them plant sugarcane (10%). 30% of them work in fish ponds.

### 1.3. Sectoral Involvement

#### a. Rice

In rice farming, men play a major role in doing heavy activities from seed selection to marketing. Women lead in drying activities when men are not at home. Men also make the major decisions in rice farming. However, women are responsible for budgeting their expenses. In terms of sectoral

role, middle age members are usually engaged in this certain livelihood. The largest rice area is found in Sitio Cabas-an.

### **b. Corn**

In planting corn, men also take the role in doing heavy activities. Women are in charge of applying fertilizer and chemicals. Men are also the primary decision-makers, while women handle budgeting and finance. Middle age community members dominate this livelihood by 80%.

### **c. Pig-raising**

Heavy duties in pig-raising and backyard farming are dominated by men. Women lead in feeding management and both have equal participation in marketing. Half (50%) of the participants in this livelihood are middle-aged, 30% are youth, and 20% are senior citizens.

## **2. Climate Change Perception**

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### **2.1. Climate Hazard**

Strong typhoons has been identified as the main climate hazard. Flood is a secondary hazard identified that affects their agricultural produce such as rice, vegetablesm sugarcane and corn. Livestock are also lost to floods. Among the 7 sitio, Sitio Apo is most affected by flood due to its location near the Hinay-an River.

Seasonal calendar reveal there are no significant changes in terms of weather pattern from 30 years ago to present, except that at present, rainy season begins in June, where previously they already expected rain by May. Temperature meanwhile has been observed to have increased during the usual months of dry season.

### **2.2. Impact**

All sitios are affected by typhoon, all their ricefield, corn, sugar cane are washed out due to flood brought by typhoon. Sitio Apo is usually worst hit due to its location and more often still affected even during monsoon months.

Agricultural produce such as crops and livestock are destroyed by flood. Damage to infrastructures has been severe that electricity took a while to restore and farm to market roads to repair.

## 2.3. Coping Mechanism

Cash for work from the local government and CSOs responding after the hazard are the usual response in order for the community to cope from the impact.

## 2.4. Capacity of the Community

In terms of their agricultural livelihoods, the barangay has diverse crops with main rice, corn and sugarcane as main source of livelihood. All sitios are engaged in backyard gardening, and have access to water source for domestic and irrigation. The barangay also have a significant area of intact forest. Alternative livelihoods from poultry from Sitio Layon Bato, Proper, and Nabonbon while fishponds for Sitios Cagcag, Santol, Apo, Nabonbon, Layon Bayo, and Cabas. These alternative source of livelihood and food is an asset for the community.

Farmers also have access to production equipments as provided by DA and majority are available but rented out by private individuals.

The high rate of registration to RSB is also advantage for the community as they can easily access DA support. Age group for farm labor is also young with a range of 18-70years old.

## 2.5. Initial Plan

Implications	Solutions
Destruction of agricultural produce due to flood.	<ol style="list-style-type: none"> <li>1. Establish early warning via climate information by establishing automated weather station to provide location-specific data.</li> <li>2. Establish mechanism for livestock evacuation.</li> <li>3. Ordinance to prevent activities like illegal logging.</li> </ol>

### 3. Summary and Findings

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The barangay and community's action against climate hazard has been on the response side as evident with the coping mechanisms they have mentioned during the hazard event. There is a need to improve their preparedness to the hazard to minimize impact to their livelihoods. This could include to better access to climate information to provide ample time for preparation.

Their access to water source for irrigation could be maximized to expand crop diversification. Providing support to expand small aquaculture should be considered by the LGU and the DA.

### 4. Recommendations

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1. Better access to climate information through the AMIA Program
2. Support for expansion of small scale aquaculture for alternative livelihoods
3. BDRRM plan should include preparedness, flood mitigation, and adaptation options.



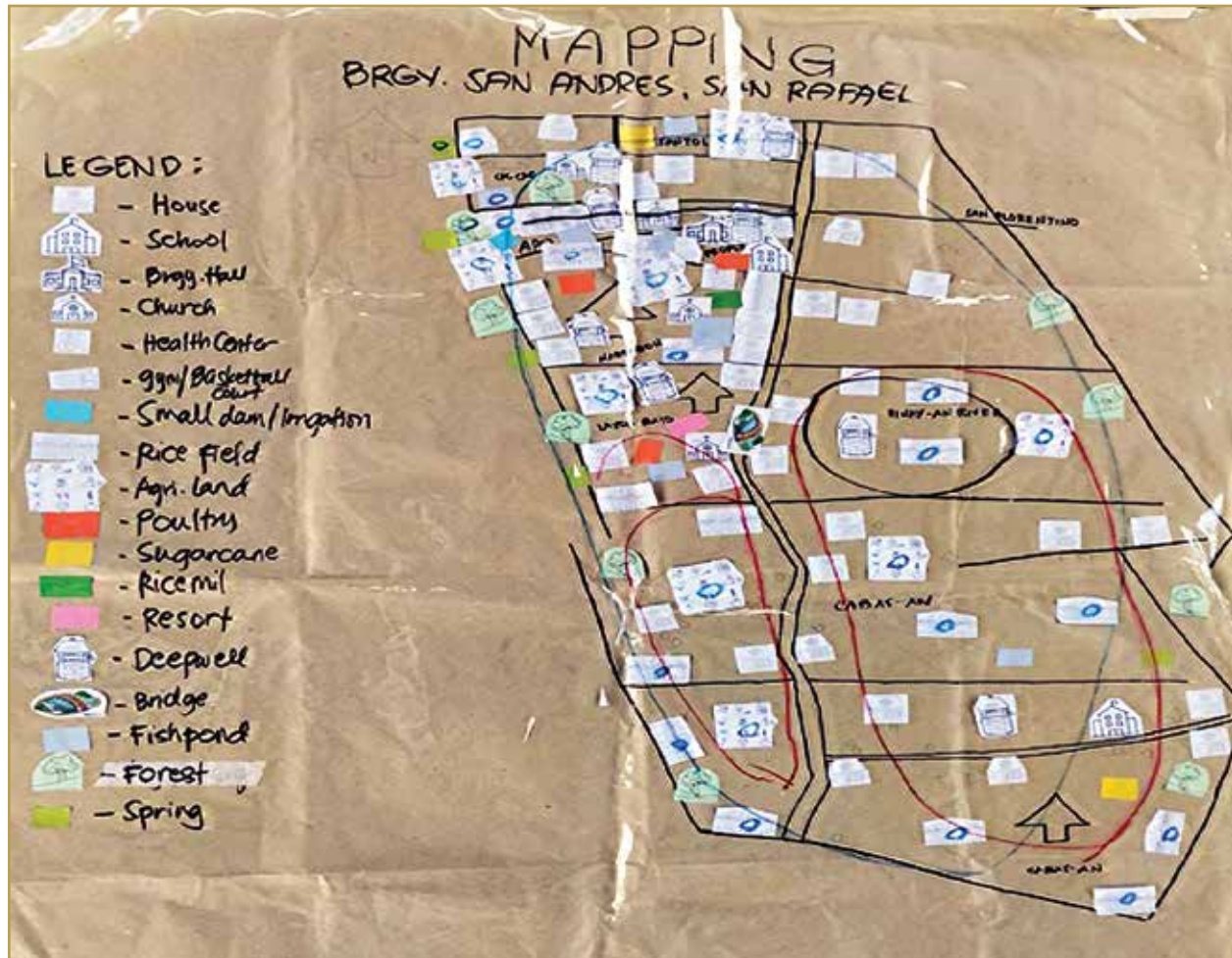
## Annex C. PCVRA Tools Used

### 1. Timeline

Super Typhoon Yolanda - November 8, 2013			
Features	Impacts on livelihood	Coping strategies implemented	Strategies in case of reoccurrence of the event
<p>Signal No.4 Strong winds (5 hours), heavy rain</p>	<ul style="list-style-type: none"> <li>Houses and infrastructure were damaged, including the schools, Barangay Hall, and gymnasium.</li> <li>Electric posts were damaged causing power interruption for 6 to 7 months.</li> <li>Damaged agriculture commodities. Rice, corn, and high-value crops and vegetables were submerged by floods.</li> <li>Livestock and ruminant animals were drowned by floods.</li> <li>Trees were uprooted and caused landslides.</li> <li>Destabilized businesses and finances</li> <li>Employees were stranded due to unpassable roads</li> </ul>	<ul style="list-style-type: none"> <li>Government and NGOs gave aids and supports. They provided cash worth PhP30k for totally damaged houses, construction materials, relief goods, and food packs.</li> <li>Bayanihan system (cash for work) through clearing operation and repair of damaged properties and infrastructure.</li> <li>Collaborative support of LGU and Barangay</li> <li>DRR training and different types of equipment.</li> <li>The barangay officials conducted tree planting in the mountainous area.</li> <li>Received medicines and hygiene kits from private donor</li> </ul>	<ul style="list-style-type: none"> <li>Regular monitoring of weather conditions through AWS (Automated Weather System)</li> <li>Establish an evacuation area for livestock, poultry, and ruminant animals for their safety</li> <li>Continuous registration of farmers to PCIC</li> <li>Ordinance for environmental protection to prevent destructive activities like illegal logging</li> </ul>



## 2. Spot Map



TYPHOON
  DROUGHT
  FLOOD

### 3. Seasonal Calendar

30 Years Ago	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<b>CLIMATE PATTERN</b> (Wet & Dry)												
<b>TYPHOON</b>										✓	✓	✓
<b>TEMPERATURE</b>	↓	↓	→	↑	→	↓	→	→	→	→	→	↓
<b>RAINFALL</b>	Moderate	Moderate	Low	No Rain	Moderate	High	High	Moderate	High	High	High	High
<b>LIVELIHOODS:</b>												
A. Rice farming 50%				Land Prep	Planting (1st crop)		Harvest					
B. Corn 40%			Land Prep	Planting			Harvest					
C. Sugarcane 50%		Harvest			Planting							
D. Livestock/poultry	ALL YEAR ROUND											

15 Years Ago	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<b>CLIMATE PATTERN</b> (Wet & Dry)												
<b>TYPHOON</b>			✓							✓	✓	✓
<b>TEMPERATURE</b>	→	→	↑	↑	→	→	→	→	→	→	↓	↓
<b>RAINFALL</b>	Low	Low	Low	Low	High	High	High	Low	High	High	High	High
<b>LIVELIHOODS:</b>												
A. Rice farming 70%	Harvest	Mungbean			Land Prep	Planting (1st crop)			Harvest	Planting (2st crop)		
B. Corn 40%		Harvest			Planting (1st crop)				Harvest	Planting (2st crop)		
C. Sugarcane 50%		Harvest			Planting							
D. Livestock/poultry 70%	ALL YEAR ROUND											

**LEGEND:**

<b>CLIMATE PATTERN</b>	<b>TEMPERATURE</b>	<b>RAINFALL</b>
Wet  Dry	↑ High    → Average    ↓ Low	High  Moderate  Low  No Rain

5 Years Ago	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
<b>CLIMATE PATTERN</b> (Wet & Dry)												
<b>TYPHOON</b>			✓							✓	✓	✓
<b>TEMPERATURE</b>	↓	↑	↑	↑	↑	→	→	→	→	↓	↓	↓
<b>RAINFALL</b>												
<b>LIVELIHOODS:</b>												
A. Rice farming 90%					Land Prep	Planting (1st crop)		Harvest	Land Prep	Planting (2st crop)		Harvest
B. Corn 80%		Land Prep	Planting (1st crop)			Harvest		Land Prep	Planting (1st crop)			Harvest
C. Livestock/poultry 70%	ALL YEAR ROUND											
D. Fishpond 30%	ALL YEAR ROUND											
E. Sugarcane 10%		Harvest			Planting							

## 4. Livelihood Matrix

LIVELIHOOD: RICE FARMING	Roles		Decisions		Sectoral Role		
	Women	Men	Women	Men	Youth 15-30	31-59	Senior Citizen
1. Seed selecting	30%	70%	30%	70%	20%	60%	20%
2. Land preparation	20%	80%	20%	80%	10%	80%	10%
3. Seed soaking	-	100%	-	100%	20%	50%	30%
4. Seed incubation	-	100%	-	100%	20%	50%	30%
5. Seed broadcasting	-	100%	50%	50%	10%	50%	40%
6. Registering for insurance under PCIC	50%	50%	50%	50%	10%	70%	20%
7. Spraying of herbicides	-	100%	-	100%	8%	72%	20%
8. First fertilizer application	-	100%	-	100%	8%	72%	20%
9. Water management/irrigation	20%	80%	10%	90%	40%	40%	20%
10. Spraying of insecticides	-	100%	-	100%	8%	72%	20%
11. Second fertilizer application	-	100%	50%	50%	10%	50%	40%
12. Monitoring	-	100%	-	100%	5%	85%	10%
13. Harvesting	30%	70%	30%	70%	20%	60%	20%
14. Drying	20%	80%	50%	50%	20%	70%	10%
15. Marketing/storing							

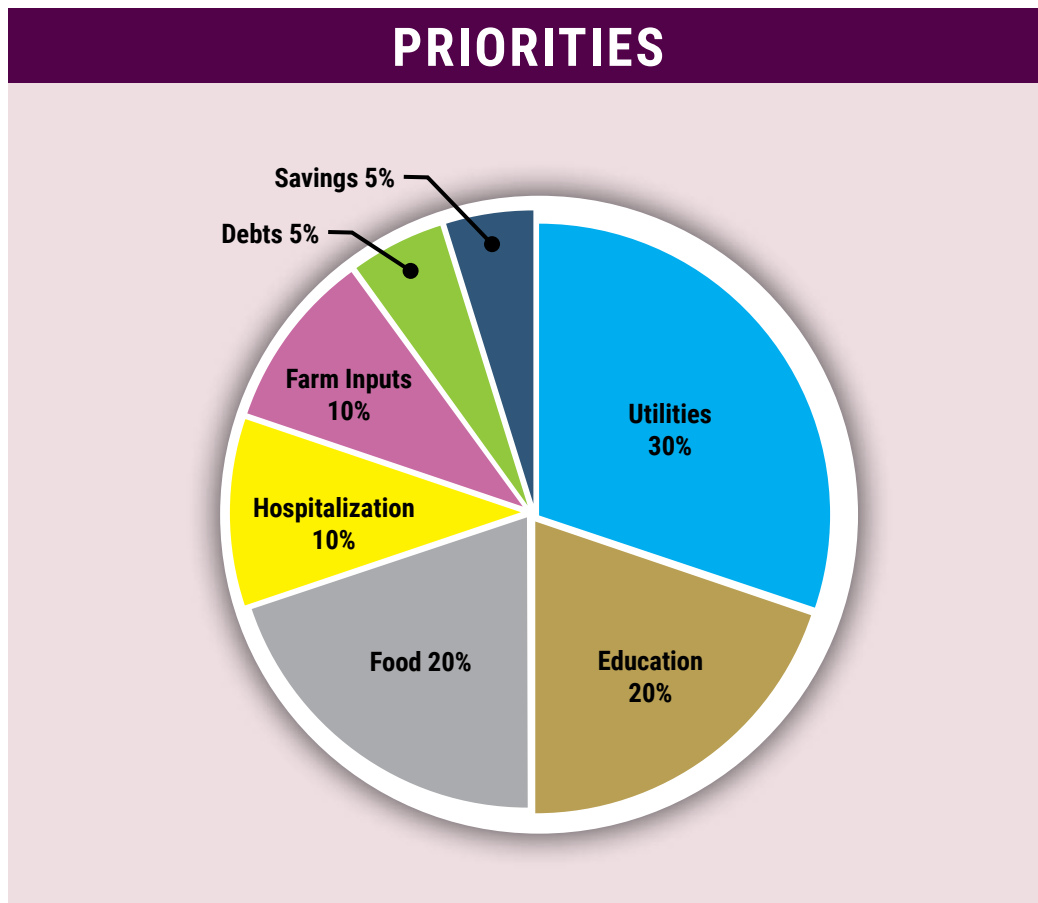
LIVELIHOOD: CORN	Roles		Decisions		Sectoral Role		
	Women	Men	Women	Men	Youth 15-30	31-59	Senior Citizen
1. Seed selecting	50%	50%	50%	50%	-	50%	50%
2. Land preparation	40%	60%	40%	60%	30%	60%	10%
3. Planting	70%	30%	30%	70%	40%	50%	10%
4. Registering for insurance under PCIC	-	100%	20%	80%	10%	80%	10%
5. Spraying of herbicides	70%	30%	30%	70%	40%	50%	10%
6. First fertilizer application	70%	30%	30%	70%	40%	50%	10%
7. Second fertilizer application	30%	70%	30%	70%	40%	50%	10%
8. Monitoring/spraying of pesticides	70%	30%	30%	70%	40%	50%	10%
9. Harvesting	70%	30%	50%	50%	50%	40%	10%
10. Drying	10%	90%	10%	90%	50%	40%	10%
11. Marketing/storing	50%	50%	50%	50%	40%	50%	10%

LIVELIHOOD: PIG RAISING (Breeding)	Roles		Decisions		Sectoral Role		
	Women	Men	Women	Men	Youth 15-30	31-59	Senior Citizen
1. Construction of pen	-	100%	20%	80%	30%	50%	20%
2. Breed selection							
3. Purchasing of stock	20%	80%	40%	60%	30%	50%	20%
4. Purchasing of feeds	20%	80%	40%	60%	30%	50%	20%
5. Feeding	60%	40%	60%	40%	30%	50%	20%
6. Medication	20%	80%	20%	80%	30%	50%	20%
7. Mating	60%	40%	60%	40%	30%	50%	20%
8. Monitoring	50%	50%	50%	50%	10%	70%	20%
9. Farrowing	50%	50%	50%	50%	30%	50%	20%
10. Cutting of umbilical chord and teeth	40%	60%	40%	60%	20%	40%	40%
11. Castration	-	100%	50%	50%	40%	40%	20%
12. Marketing	50%	50%	50%	50%	30%	50%	20%

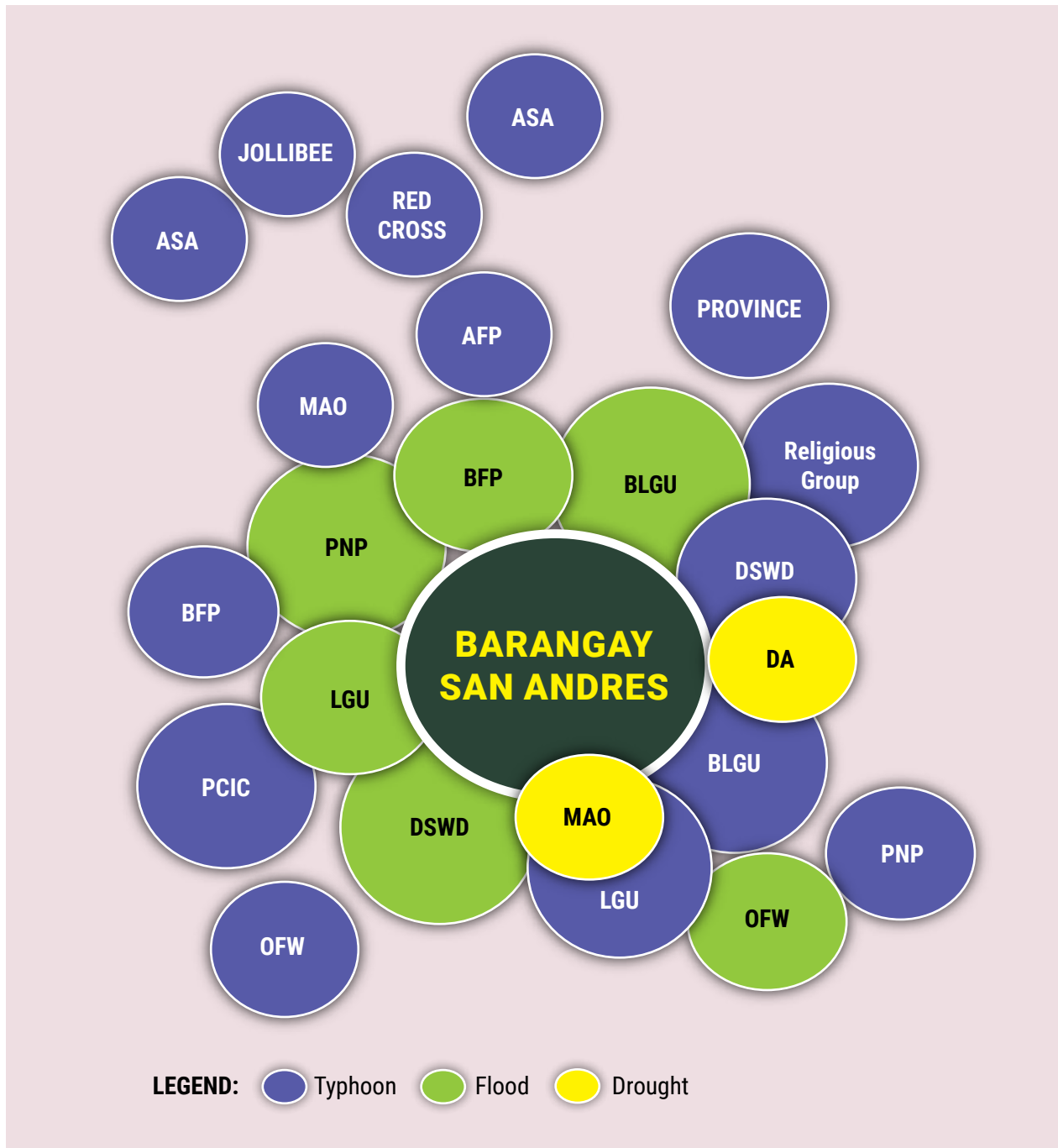
## 5. Resource Flow

LIVELIHOODS	Outflow	Income
<b>Rice Farming (1 ha.)</b>		
	<ul style="list-style-type: none"> <li>● Binhi/seeds- 4 sacks x 1300 = PhP 5,200</li> <li>● Kurodo/gasoline- 1 container (20 liter) = 1,800</li> <li>● Payment for hand tractor = 2,400</li> <li>● Labor = 800</li> <li>● Hampil/kariskis (weeding) w/ labor and food = 3,000</li> <li>● Direct seeding labor - 3 laborer 91 day = 1,100</li> <li>● Herbecide 1 liter = 1,200</li> <li>● Basal 3 sacks urea(1620) x1735 = 5,205</li> <li>● Spray insecticide = 1,000</li> <li>● Spray Tyangaw = 1,000</li> <li>● Dressing 3 sacks sulphato = 3,000</li> <li>● Harvest - Blower (25 sacks 1 sack part/ payment converted to cash) = 2,000</li> <li>- Conduction (80 sacks x 20) = 1,600</li> </ul>	<ul style="list-style-type: none"> <li>Harvested 80 sacks x 600 = PhP 48,000</li> <li>PhP 48,000</li> <li>- PhP 29,305</li> <li><b>Income: PhP 18,695</b></li> </ul>
	<b>Total : PhP 29,305</b>	
<b>Corn (1 ha.)</b>		
	<ul style="list-style-type: none"> <li>● Herbecide 4 gallon x 1300 = PhP 5,200</li> <li>● Binhi/seeds 2 bags x 5000 = 10,000</li> <li>● Paggahit - 10 Laborer x 300 x 1 day = 3,000</li> <li>- Food (lunch and snacks) = 1,500</li> <li>● Paedas - 2 Laborer (w/food) x 600 = 1,200</li> <li>● Panggas - 10 laborer (w/food) x 1day = 4,000</li> <li>● Fertilizer - Basal 8 sacks (1620) x1735 = 13,880</li> <li>- Urea 4 sacks x1400 = 5,600</li> <li>- Spray herbicide 2 gallon x1200 = 2,400</li> <li>● Payment to laborer for harvest (2 bags of binhi x 8 tons, 1000/ton) = 8,000</li> <li>● Hauling per sacks - 300 sacks (8 tons) x15 = 4,500</li> <li>- Sealer (11x50x13) = 7,500</li> </ul>	<ul style="list-style-type: none"> <li>Harvested 149 sacks x 50 x 13 = PhP 96,850</li> <li>PhP 96,850</li> <li>- PhP 66,780</li> <li><b>Income: PhP 30,070</b></li> <li>Disposal: 9 Piglets x 3 nayon/mother = 24</li> <li>24 piglets x 3,500 = PhP 84,000</li> <li>PhP 84,000</li> <li>- PhP 65,010</li> <li><b>Income + 3 mothers/nayon: PhP 19,990</b></li> </ul>
	<b>Total : PhP 66,780</b>	

LIVELIHOODS	Outflow	Income
<b>Livestock (Swine -Breeding)</b>		
	<ul style="list-style-type: none"> <li>● Piglets 3500 x 3 = PhP 10,500</li> <li>● Vitamins (10 piglets for 1 bottle vitamins) = 350</li> <li>● Deworming 1 sachet = 10</li> <li>● Feeds starter 3 sacks x1550(25 kilos) = 4,650</li> <li>● Free starter 3 sacks x 1950(50 kilos) = 5,850</li> <li>● Starter 3 sacks x 2000 = 6,000</li> <li>● Grower 4 sacks (3piglets) x 2300 = 27,600</li> <li>● Broad sow (feeds) 2,200 x 3 piglets = 6,600</li> <li>● Lactating 1½ sacks x 2300 = 3,450</li> </ul>	Disposal: 9 Piglets x 3 nayon/mother = 24 24 piglets x 3,500 = PhP 84,000 PhP 84,000 - PhP 65,010 <hr/> <b>Income +</b> <b>3 mothers/nayon: PhP 19,990</b>
	<b>Total: PhP 65,010</b>	



## 6. Venn Diagram



**IIRR Staff**

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Royden Nicolas  
Carlo Cargando

**DA-AMIA Staff**

Carmelita C. Fantilanan  
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Jocie V. Manangan  
Chrystal Jane L. Almendralejo

**Council Members and Volunteers**

Barangay Ilong Bukid Council  
Barangay Poblacion Council  
Barangay San Andres Council

**Local Government Unit**

Municipality of San Rafael  
Municipal Agriculture Office  
MA: Mr. Richard Torreverde

**Farmers Association**

Ilong Bukid Irrigators Farmers Association  
Balabag Buranan Farmers Association  
San Andres Farmers Association  
Iloco Farmers Association





# AMIA Villages in the Municipality of San Rafael, Province of Iloilo

