



# PARTICIPATORY CLIMATE VULNERABILITY RISK ASSESSMENT OF AMIA VILLAGES

Department of Agriculture  
Regional Field Office 6

## ABSTRACT

The Adaptation and Mitigation Initiative in Agriculture (AMIA) aims to empower local communities in the agricultural-fisheries sector and help them adopt sustainable livelihoods and effectively manage climate risks. The program 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. Participatory Climate Vulnerability Risk Assessment (PCVRA) is conducted at the onset to provide an informed program designing for the AMIA Villages as vulnerability is location specific. This report presents the results of six (6) PCVRA in select AMIA Villages.



International Institute of Rural Reconstruction

## **INTRODUCTION**

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).

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. It 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 as climate change has varying impacts depending on the location and context, making certain sectors more vulnerable than others.

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.

## Methodology

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. 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
6. Resource Flow. Identify the inflow (revenue earned from their means of livelihood) and outflow (costs incurred) of resources

## Process



### Training of AMIA Focal staff on PCVRA process and tools

Understanding the risks and vulnerabilities brought forth by climate change provides an inclusive assessment in mitigating its adverse effects to communities. The implications of this global phenomenon require a more solid grounding in analyzing what is happening on the ground. By putting premium on participation in every assessment, communities would be able to further secure their source of living, as well as protect their families in the years to come.

With these considerations in mind, the International Institute of Rural Reconstruction developed the Participatory Climate Vulnerability and Risks Assessment (PCVRA) methodology as an assessment tool to generate information from the community. This tool is guided by the principles of participatory rural appraisal and designed by incorporating a climate lens. It also gives emphasis to the livelihood component in the assessment of the community's climate risks and vulnerability.

Learning about this tool would help several development practitioners in understanding the struggles of every community and its mechanisms to improve climate resiliency. It enables local people to share, enhance, and analyze their knowledge of life and conditions to plan and act. Using a combination of various PRA approaches and methodologies, PCVRA could further explain the intersectionality of climate change impacts to communities, especially on human potential, ecological balance, and food security.

Early in February (February 1-3), six (6) AMIA focal staff assigned in the AMIA villages were trained on the concept and process of conducting PCVRA. The training focused on providing knowledge

on key climate change, mitigation, and adaptation concepts. The trainees also understood the tools necessary to gather relevant data and information in order to understand the level of risk and vulnerability of the community to climate related hazards.

A practicum in one of the barangays in Ivisan was conducted to provide hands-on experience for the trainees in the conduct of PCVRA.

### Conduct of PCVRA

After the training, the IIRR PCVRA team conducted the actual PCVRA together with the AMIA focal staff assigned in each AMIA Village between March to June 2023.

A total of 18 PVCRA were conducted covering 6 municipalities in 5 provinces. Sectoral representatives (farmers, fisherfolks, women, youth, PWD) were invited including barangay officials for the focused group discussion and key informant interviews.

AMIA Sites	Male	Female	TOTAL
<b>Cauayan, Negros Occidental</b>			
Barangay Masaling	5	18	23
<b>Numancia, Aklan</b>			
Barangay Aliputos	7	18	25
Barangay Laguinbanua	7	20	27
Barangay Bubog	6	19	25
<b>Dao, Capiz</b>			
Barangay Duyoc	10	12	22
Barangay Lacaron	6	11	17
<b>Anini-y, Antique</b>			
Barangay Butuan	10	12	22
Barangay Magdalena	11	14	25
Barangay Salvacion	12	12	24
Barangay San Roque	11	18	29
Barangay Nato	14	20	34
<b>Bingawan, Iloilo</b>			
Barangay Poblacion	4	9	13
Barangay Alabidhan	5	11	16
Barangay Quinar-upan	7	13	18
Barangay Quinangyana	6	9	15
<b>San Rafael, Iloilo</b>			
Barangay San Andres	6	9	15
Barangay Ilongbukid	4	8	12
Barangay Poblacion	7	10	17
<b>GRAND TOTAL</b>	<b>138</b>	<b>243</b>	<b>381</b>

While the PCVRA were being conducted, baseline information were also collected using the survey form from CRAO. Results were automatically uploaded to the CRAO database.

Site	Number of households interviewed
New AMIA Site (6 Municipalities, 18 Barangays)	632
Old Sites (6 Municipalities, 29 Barangays)	967
<b>TOTAL</b>	<b>1599</b>

## Presentation of Results

Data and information collected by the PCVRA were consolidated by the IIRR team. Discussions were completed and initial analysis and recommendations were drafted per PCVRA result. A report was drafted for presentation to select municipal and barangay officials. Select farmers also were in attendance. Feedback on the report was gathered. This was conducted in September.

AMIA Villages	Male	Female	TOTAL
Cauayan, Negros Occidental	4	3	7
Numacia, Aklan	3	8	11
Dao, Capiz	3	8	11
Anini-y, Antique	9	10	19
Bingawan, Iloilo	3	5	8
San Rafael, Iloilo	5	3	8
<b>GRAND TOTAL</b>	<b>27</b>	<b>37</b>	<b>64</b>

## PCVRA Results

[PCVRA AKLAN Numancia](#)

[PCVRA Antique Anini-y](#)

[PCVRA Capiz DAO](#)

[PCVRA Iloilo San Rafael](#)

[PCVRA Iloilo-Bingawan](#)

[PCVRA NEGROS Cauayan](#)

## Workshop with AMIA Focal

In October, to complete the process, a presentation to the AMIA DARFO6 was conducted. It was participated by 5 staff.<sup>1</sup>

The DARFO6 staff provided their additional inputs. The workshop also focused on facilitating the AMIA team's insights in the implementation and key recommendations. This is an important process as these staff are the implementers on the ground. Their insights are valuable and potential



considerations for programming for AMIA and enhance its implementation framework. Below are some of the ideas and recommendations shared by the AMIA team:

1. **Scaling of climate information.** Fully scale the early warning system using the 10-day farm weather outlook advisories so farmers can use it to inform their decisions on their production such as adjustment in schedule and irrigation utilization. Weather boards were already installed in AMIA villages and the SAGIP<sup>2</sup> system has been established by Rice Watch Action Network. Educate local communities about the importance of Automated Weather Systems and the role they play in supporting climate-resilient agriculture. Engage farmers and local residents in understanding weather data and forecasts.

To further maximize the existence of these systems, there is a need to institutionalize the partnership between the Department of Agriculture through the DAWV-AMIA and PAG-ASA to address issues of maintenance such as calibration checks, routine inspections, and repair of the Automated Weather Systems (AWS). Technology transfer should include capacity

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<sup>1</sup> Carmelita Fantilanan, Rodolfo Cabrera Jr, Jenny Labanero, Jineveb Siva, Chrystal Jane Almendralejo

<sup>2</sup> Sagip Buhay at Saka is a short messaging service (sms) designed to communicate climate-based warnings to farmers, fishers and other community members. The warnings are generally from PAGASA and translated into agriculture risk management advisories by local government partners. The service is meant to help agriculture stakeholders manage climate risks and reduce damage and losses to life and livelihoods.

building sessions of the local government and AMIA focal persons. System of data collection, validation and sharing should be defined as part of the institutionalization. Allocation of funds for supporting the whole climate information system (establishment, maintenance, trainings) should be included in both the local government and DA budgets.

Distilling the climate information on the ground requires a user-friendly format that the community can easily understand (clear language, graphics, visual aids) so they can fully use the information. Community-level trainings and workshops should be considered to further ensure climate information is fully understood and utilized.

2. **Promotion of better practices for soil health.** Soil plays a role in mitigation due to its role in sequestering carbon. Restoration of degraded soil by rebuilding its organic matter content through the practice of organic agriculture should be fully implemented in AMIA villages. The practice of raising beds is another action needed to be promoted to protect crops from flood and water logging. This practice can be coupled with introduction of flood-resistant crop varieties for cultivation on raised beds.
3. **Diversification of farms.** Encourage diversification of crops and livestock. A mix of crops and livestock can provide a buffer against extreme weather events. For example, in the event of a drought, livestock can still provide income and food security. Promotion of agroforestry as a climate-resilient practice. Integrating trees with crops can provide windbreaks during typhoons, help retain moisture during droughts, and improve soil quality
4. **Continuous capacity building on CRA**

Institutionalize regular training on new and emerging CRA technologies and approaches for farmers and AMIA focal staff. Strengthen the concept of farmer technicians to encourage farmer-to farmer scaling of knowledge and practices. Farmer technicians are critical in scaling CRA. Providing incentives such as recognition through awards and/or career development opportunities should be in place to encourage farmers be part of the extension system. In strengthening local extension system, location-specific risks to agricultural production are better addressed as farmer technicians help facilitate tailor-fit plans based on the local context.

In addition, investing in capacity building programs for local government staff to equip them with the skills needed to interpret and apply CRVA data effectively. This includes training in project design, grant writing, and implementation.



## **5. Establishing a robust participatory monitoring, evaluation and learning (PMEL)**

Establishing a participatory monitoring, evaluation and learning system for the AMIA involving not only the DA but enjoining stakeholders such as local government (municipal and barangay level) and the farmer organizations as part of the M&E process. This could be initiated by revisiting the PCVRA and the baseline results and draft implementation plans per AMIA village based on the results to be more responsive to the local context instead of a blanket programming. This way, local stakeholders are more in tune as issues on climate risks are context specific. Community input and local knowledge are invaluable for effective project design and acceptance.

## **6. Sharing of CRVA results**

Ensure that the results of the CRVA are widely disseminated and shared with local government officials, relevant departments, and community stakeholders. Conduct awareness workshops and training sessions to familiarize decision-makers with the CRVA results. This process could facilitate incorporation of results to LGU plans and even identify collaborative initiatives (e.g. infrastructure improvements, flood control measures, and sustainable agriculture practices) that addresses identified climate risks and vulnerabilities. Private sector involvement and partnerships with civil society organizations should be capitalized to expand collaboration.

Launch public awareness campaigns to inform citizens about climate risks and the importance of climate-resilient projects. An informed and engaged public is more likely to support and participate in these initiatives.

### **Support to community participatory action research**

Encourage local farm technicians and AMIA focal to collaborate on research initiatives that address climate-related challenges in agriculture. Support their efforts to identify and test innovative solutions. Promote knowledge sharing among local farm technicians, AMIA focal, and farmer partners. Encourage the exchange of experiences, success stories, and lessons learned to create a learning community.

## **7. Potential recommendations for youth involvement in agriculture through DAWV-AMIA**

- a. Highlight success stories of young farmers who have made a name for themselves in agriculture. These stories can serve as inspirational examples and demonstrate that farming can be a lucrative and fulfilling career.

- b. Offer training programs and workshops that introduce modern, sustainable, and technology-driven farming practices. Show how these techniques can make farming more efficient and environmentally friendly.
- c. Introduce digital farming platforms and apps that allow the youth to manage and monitor their farms using smartphones or tablets. Make use of data analytics and remote sensing to optimize crop management.
- d. Provide entrepreneurship training programs that teach young farmers how to develop their own agribusinesses, market their products, and secure financing for their agricultural ventures.
- e. Conduct workshops on financial literacy and agricultural finance. Young farmers should understand how to manage their finances, access grants and loans, and invest in their farms.
- f. Showcase the potential of agri-tourism and value addition in agriculture. Young farmers can learn how to diversify their income by turning their farms into tourist attractions and by processing farm products into value-added goods.
- g. Create mentorship programs where experienced farmers mentor and guide the youth. Learning from someone who has already succeeded in agriculture can be highly motivating.
- h. Encourage the youth to pursue agricultural studies by offering scholarships and grants. This not only helps them gain knowledge but also instills a sense of commitment to the field.
- i. Involve the youth in community-based agricultural projects, such as community gardens or farmer cooperatives. Encourage them to participate and see the impact of efforts on the community.
- j. Establish youth agriculture associations or clubs where young farmers can connect, share experiences, and collaborate on initiatives that interest them.
- k. Organize agricultural competitions and challenges that tap into the competitive spirit of the youth. These can include farming contests, crop yield challenges, and innovative agricultural technology competitions.
- l. Emphasize the role of agriculture in addressing environmental and climate challenges. Show how sustainable farming practices contribute to a healthier planet, which is a concern for many young people.
- m. Promote and celebrate local food culture and traditions. Encourage the youth to explore the rich culinary heritage of their region, which can foster an appreciation for local agriculture.
- n. Establish networks and platforms that connect young farmers with potential partners, buyers, and market opportunities, making it easier for them to establish themselves as successful agri-entrepreneurs.
- o. Recognize and reward the achievements of young farmers with awards and public recognition. This can motivate them to excel in their agricultural endeavors.

**8. Build on the experience of collaboration with academic institution to provide technical and research to support AMIA implementation**

The partnership initiated by AMIA to collaborate with Catholic Ming Yuan College (CMYC) for research is notable strategy to provide technical and evidence generation for AMIA villages. Academe leads research (e.g. value chain assessments, participatory action research on CRA options, cost benefit analysis, etc.) efforts that AMIA can utilize to inform their implementation strategies and research can also be maximized to capture outcomes (e.g. outcome harvesting, evaluation studies).

The Catholic Ming Yuan College (CMYC) and the Adaptation and Mitigation Initiative in Agriculture (AMIA) Village in Pontevedra, Negros Occidental have embarked on a promising research collaboration. This partnership was forged on June 9, 2022, at CMYC, Murcia, Negros Occidental, marking the beginning of a mutually beneficial research endeavor. The journey toward this collaboration began when the Department of Agriculture-Western Visayas (DA-WV) Research Outreach Station (ROS) in La Granja, La Carlota City of the province introduced the college to the AMIA project and the potential for collaboration.

Under the leadership of Center Chief Patrick Sta. Romana, the ROS has been working with AMIA since 2017, providing crucial technical support in the field of agriculture. In contrast, CMYC is a higher education institution known for offering agricultural courses, located in the municipality of Murcia.

A significant development took place on February 9, 2022, when the ROS, in partnership with CMYC faculty members, conducted an initial planning meeting. During this meeting, the research areas and commodities that students could study were identified. The agreement reached during this meeting was that 14 third-year student researchers would conduct their studies on six selected commodities, namely Native Chicken Technology Production, Native Pig Production, Soy Bean Production, Onion Production, and Squash Production.

It's worth noting that these commodities were funded by the Bureau of Agricultural Research (BAR), one of the attached bureaus of the Department of Agriculture. BAR's mission is to lead and coordinate national agriculture and fisheries research and development in the Philippines. According to AMIA Project Leader, Carmelita C. Fantilanan, the funding for these research projects is sourced from BAR and is expected to be available until December 2022.

The research studies commenced during the second week of July, coinciding with the onset of the rainy season, which is an opportune time for various cropping ventures. To facilitate the research, the CMYC student researchers have been categorized into six commodities, each with farmer practitioners from the AMIA Village who will guide and support them throughout their studies.

Furthermore, Dr. Armigenia O. Benedicto, the Dean of the College of Agriculture at CMYC, mentioned that their team will conduct an initial visit to the research sites following the pre-oral defense of the student researchers.

The key individuals involved in this collaboration include Vice President for Administration Fr. Shijie Cui, Human Resource Head Sr. Nellie M. Gillegao, Faculty Staff Irish S. Macainan, ROS Center Chief Patrick Sta. Romana, along with his staff Jabez Elican and Angel Jane Labrador, DAWV-AMIA Project Leader Carmelita C. Fantilanan, along with her staff Chrystal, and the assigned technical personnel for the study area, Jocie Manangan.

This collaboration not only holds the potential for valuable research outcomes but also exemplifies the significance of collaboration between educational institutions and agricultural development initiatives in fostering sustainability and resilience in the agricultural sector.



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