



COMMUNITY STORIES OF RESILIENCE BUILDING IN ASEAN

**STRENGTHENING COMMUNITY RESILIENCE
THROUGH PEER-TO-PEER LEARNING**

AN ASEAN PROJECT UNDER THE AGREEMENT ON DISASTER MANAGEMENT AND EMERGENCY RESPONSE, WORK
PROGRAMME 2.0 WITH THE PREVENTION AND MITIGATION WORKING GROUP

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Canada



Community Stories of Resilience Building in ASEAN

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MESSAGE FROM THE ASEAN SECRETARY-GENERAL

LE LUONG MINH

Secretary-General of the ASEAN

THIS YEAR MARKS a milestone for the Association of the Southeast Asian Nations (ASEAN) as it celebrates its 50th year of regional cooperation. The collective effort of ASEAN member states in establishing economic and geopolitical policies, agreements, and declarations over the half a century paved the way for what it is today: an economic powerhouse, currently the 6th largest economy in the world, with a combined gross domestic product of USD 2.6 trillion and a population of 625 million.

However, this economic growth faces a number of challenges to sustainable development such as natural disaster risks, climate change, growing population, and other drivers of risks. Annually, the ASEAN region loses USD4.4 billion in damages due to disasters caused by natural hazards, which puts the region as one of the most disaster prone in the world.

In response to disaster risks, the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) was established. This legally binding regional agreement supports ongoing and planned national initiatives of ASEAN member states with regard to disaster risk reduction

and climate change adaptation. Since it came into force in December 2009 and through various initiatives, ASEAN countries have enhanced both their national and regional capacities to respond to risks and disasters.

AADMER Work Programme 2016–2020 paints an ambitious and inspirational vision of the ASEAN region—that the region become a global leader of disaster management. As recipients of super typhoons, tsunamis, earthquakes, and other shocks and stresses, it is only fitting that the region takes a stand together for a disaster-resilient ASEAN. It envisions its people having quality lives and reaching their full potential despite hazards and risks

To forge a more resilient and inclusive future, the ASEAN in partnership with civil society groups led by the AADMER Partnership Group (APG) through Oxfam and funded by the Asian Development Bank (ADB), with the support of the Integrated Disaster Risk Management (IDRM) Fund, which is financed by the Government of Canada, launched a project, *Strengthening Community Resilience through Peer-to-Peer Learning*. It aims to support the

operationalisation of the AADMER, specifically, under the ASEAN Committee on Disaster Management (ACDM) Working Group on Prevention and Mitigation. One output of this project is this compendium of ten case studies which were developed with community groups and leaders in the project's four focus countries Myanmar, the Philippines, Thailand, and Viet Nam. We hope that these case studies will inspire others to adopt and scale-up good practices developed by communities throughout the region and beyond.

In this compendium, you will read about the farmers who use diversified and climate-adaptive organic farming to heal the soil and produce safer food; agribusinesses that are integrating disaster risk management into their business plans; a community of women who have supported themselves to become entrepreneurs to secure a safer future for themselves and their families; an older people's association using their wisdom and networks to improve early warning systems in their community;

city officials engaging with communities to improve preparedness and social cohesion; safe schools which are increasing disaster awareness with children who will become our future leaders; a local community which is designing and adopting decentralised energy systems; and communities doing risk assessments and building waste management systems in response to growing waste pollution.

There are many lessons that can be learned about planning for long-term and durable solutions for community resilience and we hope that this compendium will inspire current and future disaster resilience programmes. As for the region, we will continue to build the capacity of our communities as we position the ASEAN region as a global leader in disaster management.

Lastly, our deepest gratitude to the AADMER Partnership Group, the Government of Canada, the Asian Development Bank and Oxfam for their support, and to our partners in the four countries for all their help and cooperation in making this project possible.



MESSAGE FROM THE AMBASSADOR OF CANADA TO ASEAN

H.E. MARIE-LOUISE HANNAN

Ambassador of Canada to the ASEAN

As a Pacific Nation, Canada has strongly supported the ASEAN's goal of maintaining the peace, stability, and security that have allowed Southeast Asia—and the wider Asia Pacific region—to develop and prosper.

— **THE RIGHT HONOURABLE JUSTIN TRUDEAU, PRIME MINISTER OF CANADA**

SOUTHEAST ASIA REMAINS among the most vulnerable regions in the world to natural disasters. Events such as the 2004 Indian Ocean earthquake and tsunami, as well as typhoon Haiyan in the Philippines, have deeply moved Canadians and left a lasting impression on our public consciousness.

When these disasters strike the region, they do not feel far from home for us. We feel a deep affinity for Southeast Asia as at least a million Canadians have origins in the ASEAN region, and countless more have visited the region, have friends here and feel connected.

Working to mitigate and reduce the worst effects of natural disasters is therefore of great interest to Canada. We understand that proactively mitigating and preventing these challenges is to our mutual benefit.

This is why Canada is supporting the ASEAN's efforts to create resilient communities across the region through the Integrated Disaster Risk Management Fund managed by the Asian Development Bank. Canada is pleased to

work with the ASEAN Committee on Disaster Management and its subgroups to support components of the ASEAN Agreement on Disaster Management and Emergency Response Work Programme 2016–2020.

Creating a platform where ASEAN stakeholders are able to exchange on best practices and learn from one another is an important step to strengthening community resilience across the region, as demonstrated by the Strengthening Community Resilience through Peer-to-Peer Learning Project.

We are pleased to support the development of this compendium as it serves as an important learning tool for all. Developing a culture of learning, innovation and partnerships among a diverse group of stakeholders needs to be recognized, supported, and given a space to thrive.

On behalf of the Government of Canada, we reaffirm our commitment to building bridges between communities and ensuring their resilience in the ASEAN region.

MESSAGE FROM THE PREVENTION AND MITIGATION WORKING GROUP OF THE ASEAN COMMITTEE ON DISASTER MANAGEMENT

AS WE BRACE ourselves for more extreme weather events due to climate change and as we work to prevent new risks and vulnerabilities, it is imperative that we develop innovative mechanisms and policies. This can be done by drawing from scientific as well as local knowledge by listening to the voices of communities.

At the centre of all our mechanisms is the ASEAN community. In drafting the AADMER regional framework, dialogues with civil society groups, governments, and partners were convened to reach a common understanding and ways of working together to support the framework's implementation. ASEAN believes that all sectors of the region have a stake and should be encouraged to participate in, and benefit from, the process of ASEAN integration and community building.

Strengthening Community Resilience through Peer-to-Peer Learning is a regional project that puts the voices of women and men at the centre and gathers community practices that build community resilience. The learning journeys that the project supported in Myanmar,

Philippines, Thailand, and Viet Nam show that multi stakeholder collaboration is a powerful approach that creates and shares knowledge and that communities are goldmines of knowledge and practices that are ready to be adapted to other contexts and scaled-up.

There are many lessons and practices showcased in this compendium and we hope that they will inspire decision-makers at local, national and regional levels to be inclusive of women, men, and communities in designing resilience programmes. And we hope that these ten case studies will inspire communities and community-based organizations to more fully participate in building the capacity of the ASEAN region, as we position the region as a global leader in disaster management.

We would like to thank the Government of Canada, the Asian Development Bank, the AADMER Partnership Group and Oxfam for supporting this initiative that speaks volumes about the ingenuity and resilience of our people. We extend our deepest gratitude to all the organizations that have been part of this regional learning journey.

ACKNOWLEDGMENTS

THE STRENGTHENING COMMUNITY Resilience through the Peer-to-Peer Learning, is a a regional research project implemented by ASEAN in partnership with Oxfam, specifically with the ASEAN Committee on Disaster Management, and was funded by the Asian Development Bank with support from the Government of Canada.

Oxfam would like to thank the AADMER Partnership Group and their Country Focal Points; the National Disaster Management Offices from Myanmar, the Philippines, Thailand, Viet Nam, and Lao PDR; the co-chairs of the Prevention and Mitigation Working Group; and the Disaster Management and Humanitarian Assistance Division for making this research and collaboration possible.

Most importantly, we thank the Peer-to-Peer core learners who went on this journey of discovery and contributed their inspiring stories of community resilience.

COUNTRY FOCAL POINTS

Myanmar

Lead: Jeremy Stone, Plan International

Co Leads: Chit Min Htun, Plan and Su Thandar Win, Oxfam

Philippines

Rhoda V. Avila, Oxfam

Vietnam

Lead: Vu Min Hai, Oxfam

Co Lead: Pham Thuy Dung

Thailand

Lead: Sawang Kaewkantha, FOPDEV-Help Age

Co Lead: Janevit Wisojksongkram, FOPDEV-Help Age



AMERICA

THANH NIÊN VIỆT NAM

BABYOSL

INTRODUCTION

PHOTO BY VU NGOC LINH

ASEAN'S VISION FOR A RESILIENT FUTURE

ASEAN's Declaration on Institutionalizing the Resilience of ASEAN and its Communities and Peoples to Disasters and Climate Change recognizes that the region is vulnerable to more frequent and severe disasters due to the rapid rise of natural hazards, extreme weather events, and the impacts of climate change. The declaration refers to a "new normal" which is exacting a tremendous toll on the economic, social, cultural, physical, and environmental capital of countries and communities, which can in turn stifle the region's sustainable development and efforts toward poverty eradication.¹

ASEAN has therefore embraced a broad and inclusive vision of resilience that sets out to achieve "a more resilient future by reducing existing disaster and climate-related risks, preventing the generation of new risks, and adapting to a changing climate through the implementation of economic, social, cultural, physical, and environmental measures which address exposure and vulnerability, and thus strengthen resilience."

This vision is underpinned by a wider commitment to "promote development that is transformative, inclusive, adaptive and sustainable, where peoples and communities thrive in peace and prosperity as envisioned in the ASEAN Community's Post-2015 Vision."

LEARNING FROM SITUATED PRACTICE AND GOOD PRACTICE

The Strengthening Community Resilience through Peer-to-Peer Learning Project took its inspiration from ASEAN's

vision. The project focused on communities and the actions that they are taking to enhance their resilience. The case studies presented here were gathered through four learning journeys that took place in the project's focus countries: Myanmar, the Philippines, Thailand, and Viet Nam. The learning journeys brought together community leaders who formed a group of 'core peer learners' who visited and learnt from other communities where women and men are working together and with government agencies, civil society groups and the private sector to enhance their own resilience.

Each study describes the situated practice of the community visited and sets out current good practice drawing on existing literature and is linked to a relevant priority programme of the AADMER Work Programme 2016–2020 (Table 1). Together, the studies comprise a set of community-led initiatives that, with ASEAN's continued support, can enable the region to achieve its inclusive vision of resilience.

PEER TO PEER LEARNING

It is well established that learning is a critical component of resilient systems: "the most resilient systems are characterized by their capacity to learn and adjust, their ability to reorganize after disruption, and their retention of fundamental structure and function in the face of system stress."²

And the importance of learning in responding to the challenges of disasters and climate change is reflected in the emphasis placed on learning and innovation in the AADMER Work Programme, in priority programmes one, three, and eight.³

Peer-to-peer learning is about people learning with and from each other as equals. It includes the sharing of existing knowledge and the co-creation of new knowledge. It is a collective process that connects individuals to each other and helps to build new and enrich existing networks. As an approach to learning, it embodies ASEAN’s collaborative approach. It also effectively enhances resilience by building knowledge whilst increasing the capacity of people to take innovative action by adapting approaches that work in one context to new contexts.

Collaboration is a theme of all the stories presented here—collaboration in communities and with local governments, municipalities, the private sector, international and national civil society organizations, and community groups. As a resilient community may

be defined as a community that is able to respond to unexpected and unwelcomed events in ways that enable groups and individuals to work together,⁴ peer-to-peer learning that supports working together is a valuable strategy for enhancing resilience.

Each case study includes these elements:

- A section describing the situated practice of resilience by a community,
- An overview of relevant good practice drawing from existing literature,
- A conclusion that outlines key lessons and highlights ways the good practices can contribute to the AADMER Work Programme, and
- Recommendations for the scale-up of the good practice.

TABLE 1. Summary of community stories

NO.	COUNTRY	CASE STUDY OF COMMUNITY RESILIENCE	LINK TO AWP 2.0 PRIORITY PROGRAMMES
1	Philippines	<p>The Role of Climate Resilient Agriculture in Community Resilience</p> <p>Kuatros Marias Agro Ecological Farm is on the island of Mindoro some 200 kilometres from Manila. It is the site of a diversified, organic farming system formulated to improve food security, nutrition, and natural resource management to enhance community resilience.</p>	Priority programme 3: Advance
2	Philippines	<p>Participatory Governance and Urban Resilience</p> <p>Flood and earthquake prone Marikina City is implementing a comprehensive and integrated approach to disaster risk reduction in partnership with community groups and district councils.</p>	Priority programme 2: Build Safely

NO.	COUNTRY	CASE STUDY OF COMMUNITY RESILIENCE	LINK TO AWP 2.0 PRIORITY PROGRAMMES
3	Philippines	<p>The Role of Women’s Economic Empowerment in Community Resilience</p> <p>Sta. Rita Mothers’ Club is in Lawaguin, Barangay Nagcarlan, Laguna province, southeast of Manila. The club has fostered women’s entrepreneurship and economic empowerment whilst helping members to diversify their incomes and be resilient in an area vulnerable to landslides, typhoons, and the outbreak of pests that attack coconut trees.</p>	Priority programme 4: Protect
4	Thailand	<p>Safe Schools and Community Resilience</p> <p>Pha Due school, Mae Jan District, Chiang Rai Province, is a model safe school being supported by the Office of the Basic Education Commission through a partnership with the Department of Disaster Prevention and Management (DDPM) and various civil society organizations.</p>	Priority programme 2: Build Safely
5	Thailand	<p>The Role of Elderly People in Community Resilience</p> <p>Elderly members of the community in Pong Nam Ron, Fang District, Chiang Mai Province, are working with The Foundation for Older Persons’ Development (FOPDEV) to manage disaster risk.</p>	Priority programme 3: Advance
6	Myanmar	<p>The Role of Community Champions and Collaborations in Community Resilience</p> <p>Community leaders share stories of the new relationships and innovations they are creating to increase awareness of and action for building community resilience.</p>	Priority programme 8: Lead
7	Myanmar	<p>Local Participatory Planning for Community Resilience</p> <p>Communities plan early warning systems through participatory capacity and vulnerability assessments which also empower community participation in decision-making and lead to more resilient livelihoods.</p>	Priority programme 1: Aware

NO.	COUNTRY	CASE STUDY OF COMMUNITY RESILIENCE	LINK TO AWP 2.0 PRIORITY PROGRAMMES
8	Viet Nam	<p>Livelihoods Diversification for Community Resilience</p> <p>The indigenous communities of Yen Cu commune in Bac Kan Province work with the Center for Help for Indigenous Value Promotion and Sustainable Environment to develop and adopt new farming practices to help make their livelihoods more resilient to disasters.</p>	Priority programme 3: Advance
9	Viet Nam	<p>Local Energy Planning for Community Resilience</p> <p>Nam Cuong commune in Thai Binh city works with Green ID to develop and implement local energy planning to overcome power interruptions and enhance energy self-reliance.</p>	Priority programme 3: Advance
10	Viet Nam	<p>The Role of SMEs in Community Resilience</p> <p>Agriculture SMEs work with Strengthen Resilience Options by Narrowing the Gaps (STRONG) to proactively reduce the risk of climate change and disasters on their businesses.</p>	Priority programme 4: Protect

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01

THE ROLE OF CLIMATE- RESILIENT AGRICULTURE IN COMMUNITY RESILIENCE

PHILIPPINES

OVERVIEW

As producers of food, farmers should never go to bed hungry.

— FARMER JON SARMIENTO

Disasters and climate change are having an increasing impact on agriculture in the ASEAN region, affecting millions of smallholders who depend on agriculture for their livelihoods. Implementing climate-resilient agricultural practices could increase food security and farmers' income while reducing greenhouse gas emissions. This case study describes the situated practice of Farmer Jon Sarmiento of the Philippines who has developed a system of climate-resilient agriculture which enhances the natural resource base on which his farm depends and supports recovery after extreme climatic events and disasters.

KEY FEATURES



Community-
based



Knowledge
and innovation



Fostering
inclusiveness

INTRODUCTION

THE REGIONAL CONTEXT

ASEAN member states include some of the world's most disaster-prone nations. They are also among the most vulnerable to climate change due to the population's reliance on agriculture, fisheries, forestry, and other natural resources for their livelihoods and persistent social and economic inequalities.¹

Climate hazards such as temperature increases, erratic rainfall patterns, and extreme weather events (e.g. strong typhoons and severe droughts) affect agricultural production and, indirectly, food security and economic activity. Fostering climate resilient approaches to agriculture to increase food security and farmers' incomes is critical not only for the well-being of the millions of people within the region that rely on agriculture, but also for the economies of ASEAN member states.

Extreme and unpredictable weather is already taking a considerable toll on agriculture in ASEAN:

- In Indonesia, a one-month delay in the onset of the rainy season during El Niño years reduces the productivity of wet-season rice by 6.5 percent in West/Central Java and 11.0 percent in East Java/Bali.²
- In the Philippines, intensified tropical cyclones caused damage to agriculture amounting to PHP 3 billion (around USD 55 million) between 1975 and 2002.³
- Crop yield losses in Thailand due to flooding, storms, and drought amounted to more than THB 50 billion (USD 1.25 billion) between 1991 and 2000.⁴
- In recent years, thousands of hectares devoted to rice production have been damaged by frequent flooding in the Red River Delta, Central Region, and Mekong

Delta in Viet Nam. Likewise, the area of rice plantation affected by drought has more than doubled (between the periods 1979–1983 and 1994–1998).⁵

These events show the importance of developing and implementing agricultural practices that are more resilient to extreme events and are adapted to climate change.

ABOUT THIS CASE STUDY

The Philippines has 7.19 million hectares (ha) of agricultural land. The agriculture sector contributes PHP 16,115 billion (USD 317 billion) per annum to the country's gross national income and provides income to 11.29 million Filipinos.⁶ However, farmers have one of the highest rates of poverty (38.3%) in any economic sector.⁷ Agriculture in the Philippines is highly dependent on the weather, and is therefore one of the sectors most affected by climate change and extreme weather events. For example, the 2015–2016 El Niño episode resulted in drought and dry spells, affecting 400,000 ha of agricultural land and 300,000 farmers. Typhoon Haiyan devastated an estimated 600,000 ha of farmland, with 1.1 million tons of crops lost.⁸

About 99 percent of the farms in the Philippines (5.51 million in total) are smallholdings operated by households or by an individual person,⁹ whose food and livelihood depends on the farm's productivity. One such smallholder farmer is Farmer Jon Sarmiento.

Climate-resilient agriculture is a body of practice that aims to increase productivity, nutritional value, and food security; increase farmers' resilience to shocks and stresses; and reduce greenhouse gas (GHG) emissions from farming while sustaining the natural resource base. The situated practice of Farmer Jon and Kwarto Marias Agro-Ecological Farm in Barangay San Narciso, Victoria, Oriental Mindoro, Philippines of the Integrated, Diversified Organic Farming System (IDDFS) demonstrates practical

01 solutions that can inspire other small-scale farmers to transform a conventional farm into one that is climate resilient.

02 **SITUATED PRACTICE: THE KUATRO MARIAS AGRO- ECOLOGICAL FARM**

03 **INTRODUCTION**

04 Farmer Jon is a tenant farmer who, as the eldest son in his family, inherited from his father the tenancy of the 0.44-hectare Kuatro Marias farm. Along with the tenancy Farmer Jon inherited the responsibility to provide for the family. Many smallholder farmers in the Philippines cannot register their title to the land they farm. Along with this vulnerability, Farmer Jon also experiences the impacts of extreme weather on his farm and since inheriting it, he has seen enormous changes to the land he farms and its surrounding environment.


05 Farmer Jon's life journey as a child of a poor tenant farmer's family has driven his passion to develop his farm using agricultural techniques that protect natural resources to ensure long-term food security, and increase yields to improve farm income, whilst strengthening the capacity of the farm to recover from the impacts of extreme weather.

06 His self-directed study involved reading books, attending courses and living with and understanding the natural environment that surrounds him and his farm. These efforts led him to the techniques of Integrated, Diversified Organic Farming System (IDOFS), which deeply resonate with his personal value for ecology and his commitment to campaigning for non-violent environmental protection.

Farmer Jon designed his farm as an ecological farm in 1998. It became a "school for practical agriculture" in 2007 and a "Family Farm Business" in 2014. In the beginning, Farmer Jon only intended to provide food for his family. Later, he began to address the diverse social and environmental issues that Filipino farmers face.

"I first learned about alternative farming technologies in 2000. But the concept of Kuatro Marias Agro-ecological Farm was born during a farm visit that was a part of my short course in Xavier University in Cagayan de Oro in the South East Asia Regional Training Institute. The farm was run by a couple, and it was beautiful yet simple. While on the plane going home, I drafted my farm plan. When I arrived I immediately started digging the fishpond, and started to build the farm structures. Since then, I've experimented in farming. This is where my 'seed-saving' and where all the technologies being demonstrated in this farm have come from. Now, my farm is a seed bank. It has 300 varieties of rice. The seeds have different colours, shapes, and characteristics. Documenting practices, creating modules, and being a field-based platform of learning has helped me to improve the farming methods of Kuatro Marias. It is my work with PAKISAMA [the Pambansang Kilusan ng mga Samahang Magsasaka or national peasant confederation] that affirms the farming technology I am practicing, which is the IDOFS."

07 According to Farmer Jon, "The farm is designed in a way in which the work needed is accessible and appropriate to the context and capacities of the family. It does not mean that everyone has hands-on and full-time work on the farm. What is important is that each member participates in decision-making and contributes in the ways they can." Jon's wife oversees a portion of the land where she plants organic rice and raises livestock. His eldest child is the financial manager of the farm, and another child supports community organizing.



In 1980, this land was part of the Naujan Lake. I am a witness and part of the changes in its landscape for 30 years. As its terrain changes, my way of life also shifts.

To catch up with the changing times, it is also critical to transform farmers into entrepreneurs. Most farmers struggle to understand taxes, labeling, quota, quality, and supply. A small farmer cannot manage this alone, and investment is needed to create and build the capacity of community-based support systems that could support farmers to become better entrepreneurs.

— FARMER JON SARMIENTO

PHOTO BY GENEVIEVE ESCATAN



TOP. One of the core learners crosses the bridge Jon made for his farm during an immersion visit. **RIGHT.** Farmer Jon shows core learners proper spacing for planting organic rice using the systems rice intensification method. **PHOTOS BY GENEVIEVE ESCATAN**



IMPACTS

Kuatro Marias Agro-ecological Farm is designed to be more resilient to climate shocks while providing highly nutritious food and enhanced income for Farmer Jon's family. For example, when typhoon Nona devastated Oriental Mindoro in December 2015, Farmer Jon and his family were food secure. He simply had to dig up his root crops and his income was uninterrupted due to the farm's diverse enterprise model, which includes the export of high-value organic rice to Manila. If one location is impacted, he can source the rice somewhere else and continue supplying his customers.

These are the main factors that contribute to Farmer Jon's resilience:

- **Nutrition.** The farming practice in Kuatro Marias can provide Farmer Jon and his family with food for 3–6

months. Moreover, Farmer Jon consciously uses multi-cropping practices to produce “go, glow, and grow” foods (carbohydrate and fat-rich, mineral and vitamin-rich, and protein-rich foods, respectively) for healthy nutrition.

- **Disaster planning.** Kuatro Marias Agro-ecological Farm is designed based on a ‘worst-case disaster’ scenario. Farmer Jon stated that it is very useful to plant different varieties of *camote* [sweet potato], *ube* [winged yam], *taro*, or root crops as they provide food after a typhoon. He shared, “We proved this when we rebuilt this farm after it had been destroyed by typhoon Nona. We still harvested 10 kilograms of ube—those planted at the surface had been destroyed but not those planted at the bottom.” The farmer's knowledge is key to making this diverse system work. Canals and water collectors must be situated in the right places to ensure good drainage

in the rainy season and to serve as a water source in the summer.

- *Disaster recovery.* Obtaining seeds to replant devastated fields is always a major challenge for farmers in the aftermath of a disaster in the Philippines. A secure local seed system, made possible by strengthening and supporting farmers' seed conservation is a cornerstone of a resilient agriculture and food system.¹⁰ The Kwarto Marias Agro-ecological Farm, in partnership with Greenpeace, has established an in situ gene pool through storing seeds, cuttings, and tubers of crop plants that are made available to farmers in need, especially after typhoons. This provides an additional income for Farmer Jon and his family.

Kwarto Marias' ability to recover from disasters was tested after it was damaged by typhoon Nona in December 2015. For Farmer Jon, "A farmer must aspire for self-reliance right after a disaster and even envision to shelter and feed other people as well." With the help of a group of supportive people, Farmer Jon started a 23-day rehabilitation process, which he called "Clean-and-Picks." The process is based on the principles of IDOFS and included:

- using the farm plan as the basis for rebuilding
- "planting on the first day," and rehabilitating the farm elements that underpin life on the farm (e.g. the fish pond)
- using the seed bank and a nursery as a source of seeds and plants
- recycling scrap materials such as using fallen branches for fencing
- utilizing the food available from the chickens, swine, and root crops that survived to make the farm independent from government relief

- redressing weaknesses, such as replacing wind breakers that failed with native trees that are
- more resilient to typhoons
- knowing about all the plants and crops on the farm and documenting them accurately.

Overall, the farm's recovery showed that a farmer's knowledge and understanding of the plants, crops, livestock, and environment of his or her farm is essential to make a farm more disaster resilient.

THE FARM BECOMES A SOCIAL ENTERPRISE

The Kwarto Marias Agro-ecological Farm now operates as a social enterprise putting its social and environmental mission at the core of its business whilst seeking to operate in a financially sustainable manner. It uses a triple bottom-line to account for its economic, environmental, and social benefits and impacts.¹¹

“A farmer must aspire for self-reliance right after a disaster and even envision to shelter and feed other people as well.”

— FARMER JON

According to Farmer Jon, "Your savings increase instead of being spent, and that makes up your income. For instance, if you eat healthy, you don't need antibiotics, or to go to the hospital or buy ingredients for *samya* and *merienda* [Filipino snacks]. If computed, this is about PHP 5,000 (USD 100) per month. As a social enterprise, our farm is ecologically sound and community-based. The benefits are not just for my family, but for other people in the community as well. The on-site rice mill and weeding



Narra

VERMI

Vermi

UDE

IDII

CULTURE

of rice paddies require us to hire farm labour from the neighbourhood. Other members of our community market our products [and] that provides income for them as well.”

To be self-financing, the farm has diversified its sources of income by developing products like Farmer Jon’s “calamansi dew” based on Philippine lime and packaging goods made from the produce of local farmers, such as corned goat meat and free range chickens. More recently, Jon has started to promote the Kwarto Marias farm as a school for practical agriculture and tourists stay at the farm to learn about IDOFS through the “Farm in the Philippines” tourism initiative.

CHALLENGES AND LESSONS

For Farmer Jon, the key to scaling-up IDOFS is for other farmers to see how it works in practice, “Having an actual site that provides actual output and evidence is important, especially for a farmer technician. It is a ‘must’ to demonstrate techniques and technologies.”

He also emphasizes the importance of engaging young people in agriculture. His own children are involved in the farm and he trains young people in the community. He would like to see a school for practical agriculture dedicated to young farmers. He also advocates for earlier land transfer to young farmers and young farmers’ registration. “Youth farmer-interns ‘are the future’ we need to encourage young farmers to face their farms, starting with a farm plan and not take employment in chemical companies”.

IDOFS is promoted through the PAKISAMA, an umbrella organization of which Farmer Jon is a member.

OPPOSITE. Farmer Jon uses the “web of life” learning approach to show how everyone is connected and inter-dependent. **PHOTO BY GENEVIEVE ESCATAN**

The organization clusters together farmers who are willing to try IDOFS techniques and the farm model. These clusters are peer-to-peer learning groups where farmers help each other by exchanging technical knowledge, and by documenting changes taking place on their farms and any challenges they may have in using IDOFS approaches. To save on logistics and costs, clusters are organized within the same geographical location and are supported by a technical adviser provided by PAKISAMA.

Farmer Jon also argues that it is critical to transform farmers into entrepreneurs. Most farmers struggle to understand taxes, labelling, quota, quality, and supply. A small farmer cannot manage this alone, and investment is needed to create and build the capacity of community-based support systems (e.g. agriculture cooperatives) that are able to support farmers to become entrepreneurs. A barrier that Farmer Jon himself has experienced is the lack of access to financial and technical resources that would enable him to invest in the farm, improve it, or purchase equipment to add value to his farm’s produce.

A healthier natural environment, improved nutrition, the valuing of local knowledge and self-reliance, and stronger linkages among community members are all important for community resilience. But as Farmer Jon acknowledges, communities and farms also need external support to increase their resilience. “The government is important for policy and financial support to institutionalize an organic and resilient farm model. For example, when the Philippine Organic Agriculture law was passed, the campaign for IDOFS was strengthened and we had the space and opportunity to promote an organic farming culture of practice, which also raised awareness about the quality of our food. The national organic farming budget can no longer be reduced by the government because of the law.”

Government support is required to secure titles to land, enable access to financial capital, put in place social

01 protection programmes for small-scale farmers and social funds to help them manage the impact of disasters and create a policy environment that promotes innovation—these are the critical government interventions that Farmer Jon identified.

02 GOOD PRACTICE

Agricultural practices that will deliver climate-resilient results are specific to the physical, natural, cultural, and socioeconomic environment of each farm.

04 **Having an actual site that provides actual output or evidence is important, especially for a farmer technician. It is a *must* to demonstrate techniques and technologies.**

05 — FARMER JON SARMIENTO

06 Practices may include reviewing and adapting the cropping calendar, using climate-resilient rice varieties, crop diversification, using the system of rice intensification, water harvesting, seed banks, and practicing organic agriculture, among many others.¹² This means that “good practice” is more about creating an enabling environment for the adoption of climate-resilient agriculture than implementing a series of technical steps.

07 CONCLUSIONS

08 Climate-resilient agriculture aims to be adaptive to climate change and to build resilience to shocks, while increasing food security and reducing GHG emissions.

The Kuatro Marias Agro-ecological Farm demonstrates these characteristics well, being consciously designed to provide nutritious food, create an income, and provide greater food security for the family, while using adaptive measures including crop diversity and disaster resilient crops. Climate-resilient agriculture must do this without undermining the natural resource base on which agriculture depends.

Climate-resilient agriculture is also a location specific and knowledge-intensive approach. This is exemplified by Farmer Jon, who, over the years, has acquired knowledge about what to plant, where, and when, and with what other crops. It is an approach that can be scaled-up through peer-to-peer learning and with support provided by individual farmers like Farmer Jon and community groups like PAKISAMA.

RECOMMENDATIONS TO THE ASEAN

09 Climate-resilient agriculture needs to be mainstreamed into government policies and programmes, particularly into expenditure and planning frameworks. Also, local government institutions need to provide strong support to initiatives geared toward climate-resilient agriculture.¹³ Some of the key elements that could help provide an enabling environment for climate resilient agriculture in ASEAN (and elsewhere) include the following:

1. *Peer-to-peer learning to raise awareness of climate resilient farming.* Farmers are highly aware of the changes in climate that affects their production.¹⁴ Understanding that these changes are part of a long-term trend can enable farmers to create climate resilient solutions based on an understanding of their own farm and context.¹⁵ Farmer laboratories and peer



TOP LEFT. Colorful rice on display as the core learners dig in to organic food harvested from KMAF. **BOTTOM LEFT.** A core learner experiences planting rice in one of the fields at KMAF. **RIGHT.** Farmer Jon facilitates the Web of Life activity with the core learners. The web symbolizes the interconnectedness of everyone, not just to each other, but also to the environment. **PHOTOS BY GENEVIEVE ESCATAN**



Farmer Jon. PHOTO BY GENEVIEVE ESCATAN

to peer learning can help this process and catalyse innovation. Individual farmers such as Farmer Jon can help socialize climate-resilient farming and this work can be amplified by groups such as the ASEAN Climate Resilience Network and by relevant government departments who are aware of climate change, but may not have framed agricultural responses in terms of the goals of climate-resilient agriculture.

2. *Inclusive financial services.* Farmers are vulnerable to many shocks. In times of disasters, most smallholder farmers cannot access the formal financial sector for loans and insurance. Often, the interest rates are excessive and input prices are high. Requirements for

financial assistance are often tedious and farmers may lack the literacy, required documentation, and the time to access these services. They may revert to “loan sharks” or informal credit services, which require less documentation but have very high interest rates. ASEAN could research effective financial models for smallholder farmers that are currently used by member states, and amplify the most effective models across the region for wider adoption.

3. *Third party certification.* Although more countries in ASEAN are shifting to organic farming, the institutional environment to support organic farming is lacking. In the Philippines, for example, a third party certification system is not affordable. ASEAN could provide support to help establish an affordable and accessible third party certification system for smallholder farmers.
4. *National policies and programmes to promote sustainable agriculture as part of government action on climate change.* As shown by the situated practice of Farmer Jon, national governments could provide a range of support and incentives (such as the Philippine Organic Law) to encourage farmers to adopt sustainable and agroecologically sound farming practices. These include providing extension services, credit support, and market assistance, among others.
5. *Address supply and demand side barriers.* Although barriers to the adoption of climate-resilient agricultural practices are often seen as barriers faced by farmers (the demand side), there may also be constraints on the supply side. For example, providers of technology, equipment, and technical support may struggle to find investment to develop their products and services. They may also struggle to find interested farmers (i.e. customers) as policies are not in place to stimulate demand. For example, an environmental policy designed to protect riverbanks and steep

slopes through tree planting would motivate farmer groups to establish tree nurseries to supply seedlings for that purpose.

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BOX 01

CLIMATE RESILIENT AGRICULTURE AND THE AADMER WORK PROGRAMME

Resilient agriculture contributes to the ASEAN Agreement on Disaster Management and Emergency Response Work Programme 2016–2020 Priority Programme 3: Advance: A Disaster-Resilient and Climate Adaptive ASEAN Community. Specifically, Component 3 (Increasing replicable programs and models of building community resilience) includes two outputs to which the community resilience-building activities described above contribute to:

- Implementation of high-impact community-resilient and climate-adaptive programs across the ASEAN
- Incentivize the development of innovative community-based initiatives on disaster risk reduction and climate change adaptation

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02

PARTICIPATORY GOVERNANCE AND URBAN RESILIENCE

PHILIPPINES

OVERVIEW

We want to have a more holistic approach to disaster management, such as focusing on the residents' medical and psychological needs.

— KRISTIN ROXAS, MARIKINA CITY DISASTER RISK REDUCTION AND MANAGEMENT OFFICE (MCDRRMO)

Urban resilience is a priority for ASEAN countries due to the high concentration of risk in urban areas and the complex interactions between disasters, climate change, and urbanization. This case study from Marikina City, Philippines provides an example of urban resilience that demonstrates the importance of governance that empowers the participation of communities and uses forward-looking planning that links different parts of government.

KEY FEATURES



Community-
based



Demonstrates
good governance



Risk management
and vulnerability
reduction

INTRODUCTION

REGIONAL CONTEXT

More than half of the population of Asia lives in rural areas, but Asia is also the region with the fastest rate of urbanization globally. According to the Asian Development Bank, half of all the world's urban dwellers are now Asian, and another 1.1 billion people will live in the region's cities in the next 20 years.¹

Cities are engines for economic growth. The UN-Habitat estimates that cities generate approximately 80 percent of global GDP. The dynamism and vibrancy of cities stems from the concentration of government, communities, businesses, and information within cities, all of which create opportunities for growth and innovation.

However, cities also represent a concentration of disaster risk.² The near-total destruction of Tacloban City in the Philippines by typhoon Haiyan (local name Yolanda) in 2013 attests to the dangers that urban populations face during extreme events. Many cities within ASEAN member states are particularly vulnerable to disasters caused by sea level rise, floods, heat waves, and other impacts of climate change.³ Climate change interacts with the urbanization processes (e.g. rapid infrastructure development, and unplanned urban spread) to exacerbate the underlying vulnerabilities of urban communities and create new, complex, and unpredictable risks.

Strengthening urban resilience is one of the UN's Sustainable Development Goals (Goal 11: Make cities and human settlements inclusive, safe, resilient, and sustainable). Many Asian cities are being proactive in developing initiatives that are focused on climate change adaptation, disaster risk reduction, and resilience-building, with an emphasis on the capacities of local governments to respond to shocks and stresses,

BOX 01

SUSTAINABLE DEVELOPMENT GOALS

The Sustainable Development Goals (SDGs), officially known as “Transforming our World: The 2030 Agenda for Sustainable Development” is a set of 17 “Global Goals” with 169 targets between them. Spearheaded by the United Nations through a deliberative process involving its 193 Member States, as well as global civil society, the goals are contained in paragraph 54 United Nations Resolution A/RES/70/1 of 25 September 2015.

01. No Poverty
02. Zero Hunger
03. Good Health and Well-Being
04. Quality Education
05. Gender Equality
06. Clean Water and Sanitation
07. Affordable and Clean Energy
08. Decent Work and Economic Growth
09. Industry, Innovation and Infrastructure
10. Reduced Inequalities
11. **SUSTAINABLE CITIES AND COMMUNITIES**
12. Responsible Consumption and Production
13. Climate Action
14. Life Below Water
15. Life on Land
16. Peace, Justice, and Strong Institutions
17. Partnerships for the Goals

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01 understand likely future hazards, assess vulnerability, and plan and implement actions to enhance resilience. Initiatives such as the Asian Cities Climate Change Resilience Network,⁴ the 100 Resilient Cities initiative of the Rockefeller Foundation,⁵ the ICLEI Resilient Cities platform for urban resilience,⁶ and the ADB's Urban Climate Change Resilience Trust Fund are some of the ongoing programmes being implemented by ASEAN member states.

02 ABOUT THIS CASE STUDY

03 The 100 Resilient Cities initiative of the Rockefeller Foundation provides a comprehensive framework for assessing, planning, and implementing urban resilience.⁷ The framework is based on four dimensions of urban resilience: economy and society, infrastructure and the environment, leadership and strategy, and health and well-being. These four dimensions are applied to both chronic stresses (e.g. chronic water shortages, dysfunctional transportation systems) and shocks (e.g. floods, earthquakes).

04 The situated practice of Marikina City, Philippines focuses on the dimension of leadership and strategy. Marikina City government demonstrates a visionary form of collaborative leadership which uses existing regulatory and policy frameworks to create a joined-up and inclusive approach to risk reduction.

05 SITUATED PRACTICE: URBAN RESILIENCE IN MARIKINA CITY

06 INTRODUCTION

07 Marikina City is known as the shoe capital of the Philippines, producing approximately 70 percent of the country's shoes. It is one of the 16 cities that make up

Metro Manila, and is one of the most densely populated in the country, with 450,471⁸ people inhabiting a total land area of 22.64 km². Based on the 2014 fiscal report of the Philippine Commission on Audit, the city ranks eighth in the Philippine's richest cities category.

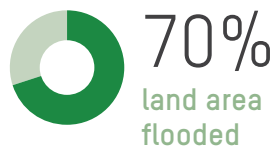
Although the city's economy is booming, it is very vulnerable to typhoons, earthquakes and floods. On average, the Marikina River floods the city three times a year and Marikina is situated on a major geological fault. There are also inequalities between the city's affluent and poor populations; the city government's Community-Based Monitoring System survey of 2012 showed that 6.65 percent of the households in the city were classified as informal settlers and one percent of the population live in makeshift housing.⁹

04 In 2009, the city was tested by typhoon Ketsana (known locally as Ondoy). The typhoon brought a month's worth of rain in one day, and the resulting flooding became one of the first large urban crises of the Philippines. Around 90 percent of Marikina residents were affected, 70 percent of the land area was flooded, and 70 percent of the operations of the city government were temporarily paralyzed. The economy of the city, and many people's livelihoods, were severely affected. Many shoe-making companies had to stop production temporarily and some went out of business altogether, causing massive layoffs.¹⁰ Incidence of waterborne diseases also increased due to the polluted floodwaters and water stress, which led to compromised sanitation and hygiene.

Using the slogan "*Bangon Marikina! Kaya Natin 'to!*" (Rise up Marikina! We can do it!) to galvanize people's collective effort to bounce back from the disaster, the city government strengthened its resolve to implement its disaster risk management (DRM) programme. Despite being the most affected area in the whole of Metro Manila, the city's infrastructure was the first to be restored (within 30 days). The city initiated additional post-recovery DRR

TYPHOON KETSANA (ONDOY)

2009 LOSS AND DAMAGE REPORT IN MARIKINA CITY



18,642
affected houses



33
deaths



Evacuees

15,000
in evacuation
centres

1,500
evacuated
outside the city



Leptospirosis
Outbreak

500
affected
residents

35
resulting
deaths


01 programmes and prioritized investments that would build citywide resilience.

02 This ability to recover, learn, and apply new interventions to build resilience is largely credited to the former mayor, Bayani Fernando, who planted the seed of resilience by creating the Marikina Disaster Risk Reduction and Management Coordinating Council in 1992. His vision helped to transform the former municipality from a 4th class municipality into a 1st class one, and made Marikina one of the best managed cities known for its good governance. His approach to governance, and that of the city's leaders who came after him, initiated a step-change in the city's planning and operations. The institutionalization of disaster risk management and risk reduction programmes has increased the city's capacity to mitigate, prepare for, and respond to typhoons, flooding, earthquakes, and everyday stresses.¹¹ The city has invested in infrastructure development to reduce the hazards of the built environment and in partnering and building the capacity of its people, in villages and households, to mitigate, prepare for, and respond to hazards.

03 LEADERSHIP AND ORGANIZATION

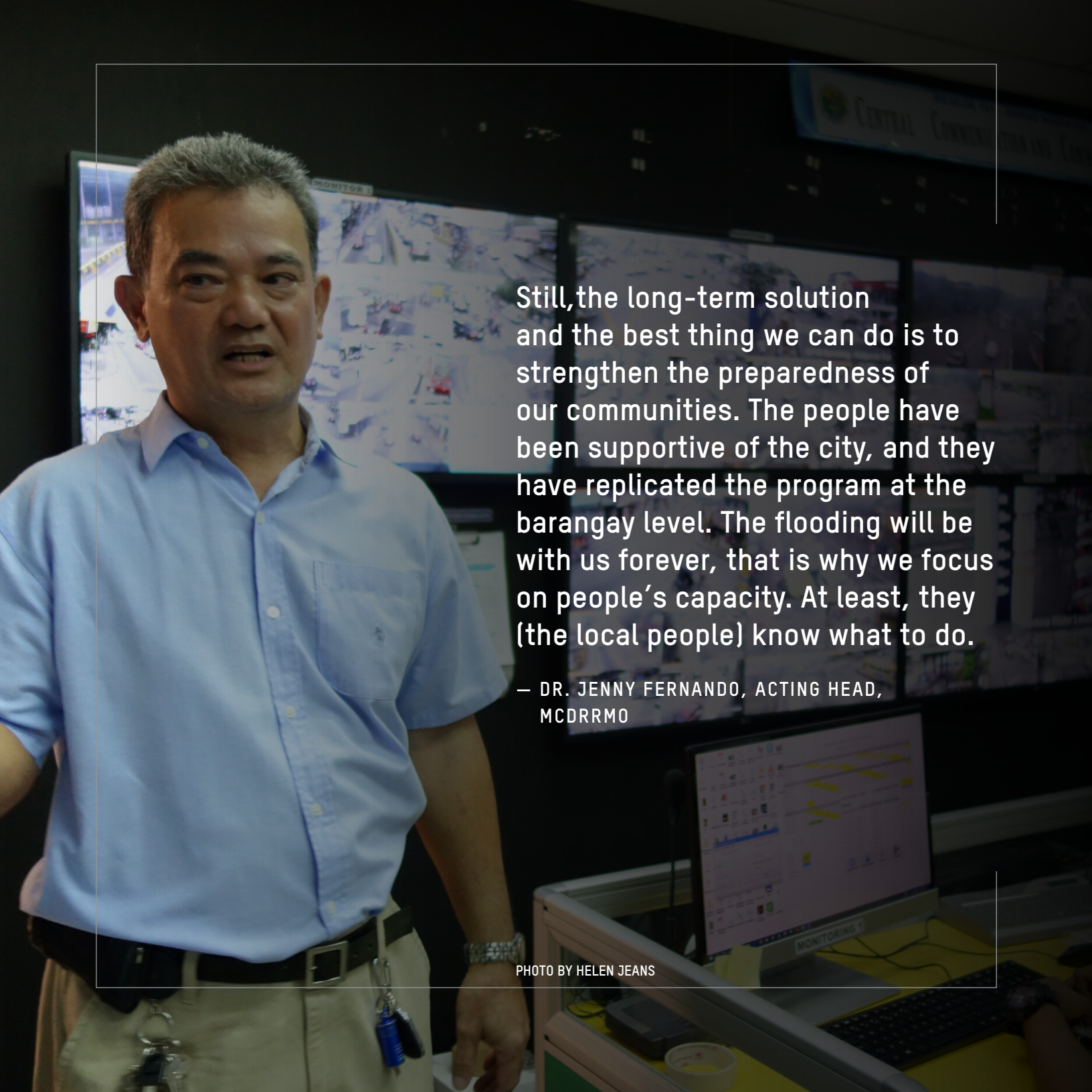
04 According to Dr. Jenny Fernando, Acting Head of Marikina City Disaster Risk Reduction and Management Office (MCDRRMO), "There are only a few unique leaders in the Philippines like our former mayor Bayani Fernando, who practices leadership with vision. A leader who created leaders, tough in sharpening the local government staff, and (who) called on people to step up in their work, to prove their worth, and to perform. (He is) consistent in pushing and supporting people so that the city government departments do their function to serve our people."

05 Under this leadership, a clear structure has been developed for disaster risk reduction. The MCDRRMO is headed by the municipal mayor and has four divisions. The operations and warning division responds to all calls within the city to assist during emergency situations and to conduct seminars and trainings on first-aid. The Central Communication and Command Center (4Cs) serves as the emergency operation center of MCDRRMO. It provides the city with a 24-hour monitoring network so that it can effectively respond to situations as needed. The Training, Information, Education division conducts trainings, seminars, and lectures to government employees, *barangays* (villages), and communities; provides information, education, and communication campaign materials regarding disasters and hazards; and facilitates earthquake and flood drills in all critical facilities. The research and planning division provides data about disaster prevention, preparedness measures, and the city's risk profile for researchers and the public.

06  There are only few unique leaders in the Philippines like our former mayor Bayani Fernando, who practice leadership with vision.

07 — DR. JENNY FERNANDO

08 The city government follows a mantra of self-sufficiency to provide efficient services for its residents and to drive down costs. The city has its own metal fabrication office, which enables it to produce its own bridges such as that seen over the Marikina River. It also has its own motor pool office, which maintains the city's vehicles. The general services office warehouse is the

A man with short, graying hair, wearing a light blue short-sleeved button-down shirt and khaki pants, stands in a control room. He is looking slightly to his right. Behind him are several large monitors displaying maps and data. One monitor in the foreground shows a computer interface with various icons and graphs. The room is dimly lit, with the primary light source being the screens.

Still, the long-term solution and the best thing we can do is to strengthen the preparedness of our communities. The people have been supportive of the city, and they have replicated the program at the barangay level. The flooding will be with us forever, that is why we focus on people's capacity. At least, they (the local people) know what to do.

— DR. JENNY FERNANDO, ACTING HEAD,
MCDRRMO

PHOTO BY HELEN JEANS



Councilor Santiago, Barangay Malanday, Marikina City tells one of the core learners stories about Barangay Tumana. **PHOTO BY GENEVIEVE ESCATAN**

main stockroom of the city; it stores cartons of goods to support people in the event of a large-scale evacuation. Another unit is responsible for the city's electricity supply and power maintenance. This allows the city to be less dependent on the main private electricity provider, the Manila Electric Company (Meralco), when the power distributor needs to undergo repair and maintenance.

Change the environment first, and people will follow.

— DR. JENNY FERNANDO

Flooding, a major issue in the city, is often exacerbated by canals which are clogged with waste including plastics. The traffic engineering unit and the city environment management office (CEMO) focus on waste management using the 3Rs approach (reduce, reuse and recycle) and together collect 99 percent of the city's garbage. Biodegradable waste is collected twice a week, and nonbiodegradable waste is collected once a week. Marikina has banned the use of plastic bags, plastic utensils, and Styrofoam since 2014. Moreover, the CEMO has an eco-savers and eco-harvesting club, which has popularized the slogan *"Munting basura, ibulsa muna"* (For the meantime, put your small trash in your pocket), a campaign to educate people to keep their trash rather than throw it in the streets. Marikina also has its own wastewater treatment system for desludging and treating water. Anti-smoke-belching is strictly imposed with fines.

The eco-savers club is part of the CEMO's initiative to manage waste at its source through instilling into students and parents the habit of reusing and recycling. Recyclable waste is gathered, valued and exchanged for school supplies. This scheme was awarded the *Galing*

Pook, a popular award for local initiatives. The city also has its own composting facility and bioreactor, where organic waste is treated to produce fertilizer. Buildings in the city have rain-harvesting mechanisms that convert rainwater into potable water.

On 20 July 2010, newly elected Mayor Del de Guzman formed the Marikina Disaster Readiness Alliance (MDRA) which is a partnership of local government units, the private sector, and citizens' groups, that work together for disaster preparedness and risk reduction. A year later, as horizontal collaboration with nearby cities and municipalities was needed to enable Marikina City to address landscape challenges, such as the management of the Marikina water basin, Marikina formed the "Alliance of 7" which brought together Marikina, Pasig, Antipolo and municipalities of Rodriguez, Cainta, and San Mateo in Rizal province to improve coordination and share knowledge and resources on disaster management. Almost a year later, Quezon City joined the group, and hence the informal name "Alliance of 7" became popular (the official name is the Marikina Watershed Environs Integrated Resource Development Alliance).

STRUCTURAL AND NONSTRUCTURAL INTERVENTIONS

The Marikina City government recognizes that resilient infrastructure is essential in dealing with hazards such as typhoons, floods, and earthquakes. Structural interventions include formulating building codes that prohibit high-rise buildings, redesigning buildings, and designing physical barriers to reduce flooding. Nonstructural interventions are as important, and enhancing people's capacities to face disaster is considered a priority.¹² The city government allocates a budget of PHP 25 million (USD 500,000) per annum for the implementation of disaster management initiatives,

The Marikina City MCDRRMO Command Centre. **PHOTO BY HELEN JEANS**



including early warning systems, evacuation planning, capacity building of community groups, and emergency response preparedness. The city's DRR fund has grown from PHP 2 million in 1992 to PHP 108 million (USD 2.13 million) in 2016. As mandated by the law, 70 percent of this fund is used for disaster preparedness.

AUTHORITIES AND CITIZENS

Years of experience with disasters has shaped the Philippines' disaster management system and the culture of Filipinos in preparedness and response. A significant shift has occurred in recent years—from merely providing relief assistance and implementing engineering strategies for disaster mitigation to an approach that is based on reducing vulnerabilities by “building safer, adaptive, and disaster-resilient Filipino communities toward sustainable

development,” as set out in the Philippine Disaster Risk Reduction and Management Act of 2010.

Marikina City government has led efforts to decentralize DRR to the barangays (village), and the response capacity of communities is an essential multiplier of the city government's efforts to create safe and resilient communities.¹³ As Dr. Fernando put it, “Still, the long-term solution and the best thing we can do is to strengthen the preparedness of our communities. The people have been supportive of the city, and they have replicated the programme at the barangay level. They are in charge of producing more response capacity to support the city, such as managing the monitoring efforts and evacuation centers; ensuring (the availability of) medical and relief (requirements) and public safety and security; and continuing coordination with the different departments of local government. The flooding will be with

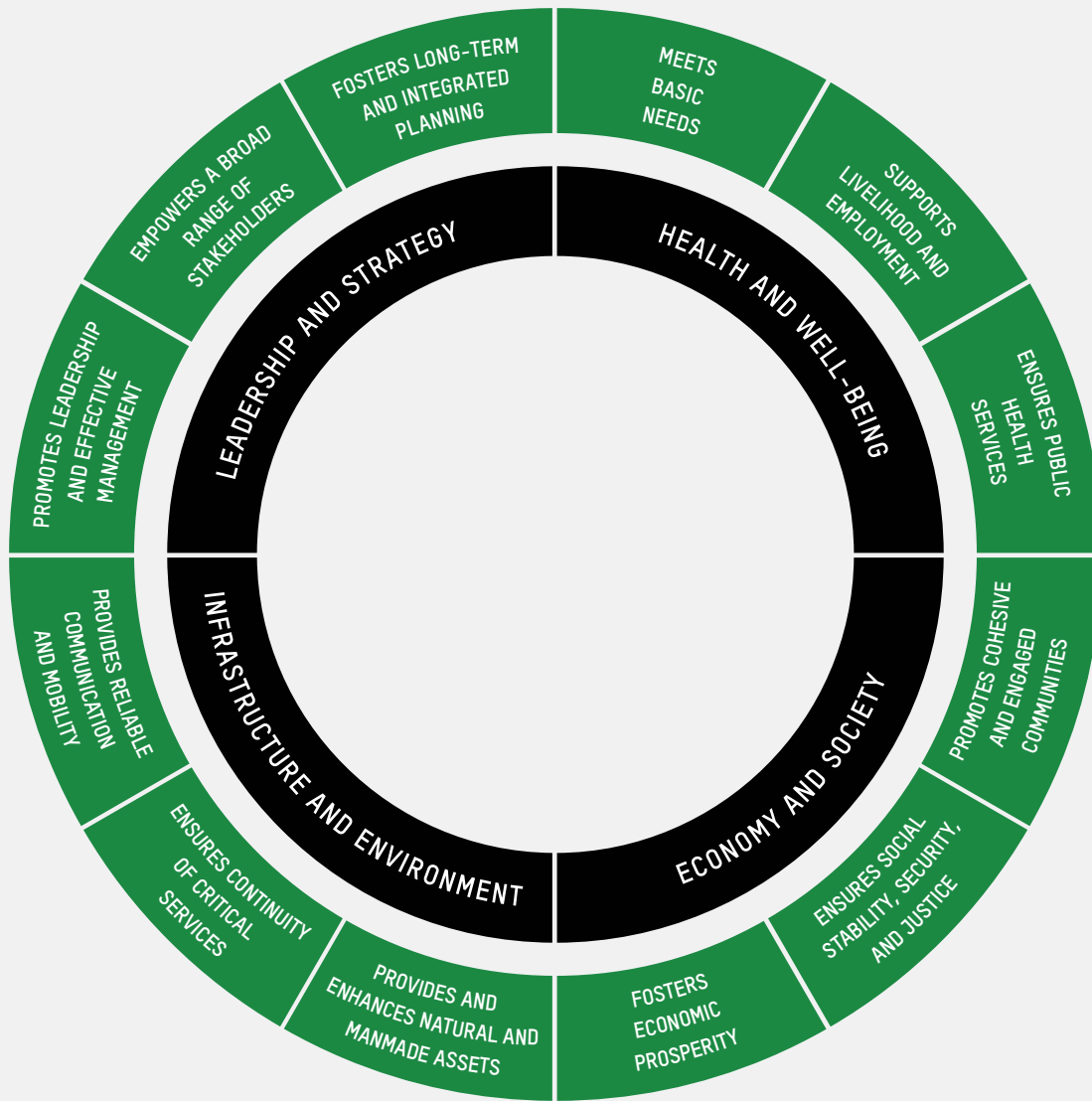


FIGURE 1. The City Resilience Framework from 100 Resilient Cities¹⁴

ENGAGING COMMUNITIES IN RISK REDUCTION IN BARANGAY MALANDAY AND BARANGAY TUMANA, MARIKINA CITY

BARANGAY MALANDAY IS among the most densely populated parts of Marikina, with 55,442 people living on only 87 ha of land. The community is exposed to frequent flooding and being only 5 km from the fault line, to earthquakes. Since typhoon Ketsana, community awareness of disasters has grown dramatically. According to Danilo Moralba, a homeowners' association officer from Purok 4-Malanday, "Before typhoon Ketsana, we were not aware of flood warnings, despite (the presence) of flood markers and water level alarm facilitated by the municipal government. We just evacuate on our own (initiative). Now, our target is (to) achieve zero-casualty. About 10,000 families or about 50,000 individuals must be evacuated in Malanday (during flood events)." All groups of the community are involved in disaster preparedness efforts, including elderly people, women, men, youth, peoples' organizations, and homeowners' associations led by the barangay council and street or "purok" (zone) leaders.

Disaster prevention and preparedness activities within the barangay include conducting evacuation drills, instructing households to raise the level of their homes above the flood levels, digging drainage dikes, and establishing a barangay emergency rescue team. There is close collaboration with the city government, which provides advice on disaster risk management. Households are categorized according to risk, and each street or

Before typhoon Ketsana, we were not aware of flood warnings, despite (the presence) of flood markers and water level alarm facilitated by the municipal government.

— **DANILO MORALBA, PUROK 4-MALANDAY**

zone has a radio to communicate and share information. The city also provides the barangay council with a "Camp Managers Registry Toolkit," which is used for setting-up evacuation areas.

Meanwhile, Barangay Tumana Captain Zifred Ancheta said, "The 45,000 population of the barangay is a combination of people from poor families and residents from Loyola Heights Village with a diverse mix of religions. About 90 percent of the people come from different sectors and regions of the country." There are many informal and transitory settlers, and 40%–50% of the residents rent properties. Over 1,000 families rely on remittances from family members working overseas. Building social cohesion is therefore critical to enhancing Tumana's community resilience. The barangay council organizes



LEFT. A typical street in urban Marikina where colorful tricycles serve as one of the modes for transport in little side streets. **TOP.** Core learners give Baranggay Tumana's preparedness system a thumbs up. **PHOTOS BY GENEVIEVE ESCATAN**

a range of community initiatives including gift-giving for elderly people at Christmas, celebrating festivals, and providing skills training at the barangay's offices to help build a shared community identity and solidarity. The barangay offices are decorated with ornaments that community members have made from brightly painted containers, which also attest to the innovative spirit of the community. The chair of the barangay said, "Before, when we distributed relief goods, residents used to fight. But now, they know how to take turns. We are able to instill in the residents that if you already had your share, (you have to) give way for others (so that they can) receive theirs." The barangay also invests in housing projects to encourage people to settle and invest in the community.

The barangay council plays an active role in disaster preparedness. For example, from March to May each year, residents are reminded to pack "grab-and-go bags," in preparation for the wettest months of June–July. And the council works with the homeowners' associations and

representatives of youth and women's organizations to when revising its contingency plans.

The barangay has an early warning system and has established evacuation centers, which are managed by the federation of youth organizations. The centers have areas assigned for breastfeeding mothers, pregnant women, people with disabilities, elderly people, and even pets.

BARANGAY ACTIVITIES

- Conducting evacuation drills
- Instructing households to raise the level of their homes above flood levels
- Digging drainage dikes
- The establishment of a Barangay Emergency Rescue Team



One of the featured practices in Marikina is urban farming. In the picture, one of the core learners happily harvested fresh eggs from the urban garden. **PHOTO BY HELEN JEANS**

us forever, that is why we focus on people’s capacity. At least, they (the local people) know what to do.”

In each barangay, 100 women and men are trained to be disaster risk responders and volunteers. This means that citizens are active protagonists in reducing risk, and that risk reduction measures can be adapted to the circumstances of each barangay (Box 1).

GOOD PRACTICE

The City Resilience Framework is based on four dimensions of urban resilience: economy and society, infrastructure and the environment, leadership and strategy, and health and wellbeing (Figure 1). Each dimension has three “drivers,” which reflect the actions that cities can take to improve their resilience. These drivers can be used to assess how resilient a city is and to prompt discussion about what needs to improve. Indicators have been created to allow urban leaders and communities to understand specific areas of strength and weakness¹⁵ and an online tool has been developed.¹⁶ Taking the leadership and strategy dimension as an example, a city like Marikina would work on these drivers:

- *Promote leadership and effective management.* Leadership has been critical in establishing and implementing Marikina City’s vision of urban resilience. The city prioritized risk reduction and established institutions with clear management responsibilities for different aspects of risk management enabling other leaders to step forward. Even with a change in leadership, disaster preparedness has become part of the city’s culture; as a collective, the city works to minimize and manage risks.

- *Empower a broad range of stakeholders.* Marikina City empowers and enhances the capacity of communities in the barangays to manage disaster risks. This has enabled local needs to be identified, understood, and responded to. (see Box 1). In addition, forming the MDRA as a multi-stakeholder entity enabled a more inclusive approach to resilience building in Marikina. The city’s initiative in forming the Alliance of 7 has led to a collective movement supporting disaster management at a wider political and geographical scale. The Alliance has supported peer-to-peer learning and the sharing of resources and expertise, and has given the Alliance a stronger voice in lobbying for key issues that contribute to resilience (e.g. watershed protection).
- *Foster long-term and integrated planning.* In Marikina, the disaster prevention and response activities are integrated into the programmes of the engineering departments, the health sector, and in building and land-use plans, among others.

CONCLUSIONS

Urban resilience rests upon a strong economy and society, appropriate infrastructure and environment, governance characterized by collaborative leadership and forward-looking strategic planning, and the health and well-being of citizens. There are many examples from the ASEAN region¹⁷ that attest to the efficacy of consciously thinking, planning, and acting to enhance urban resilience. The situated practice of Marikina City demonstrates that practical action for disaster risk reduction also contributes to enhanced citizenship and overall governance.

**BOX
03**
**URBAN RESILIENCE AND THE AADMER
WORK PROGRAMME 2016–2020**

Investing in the capacity of city authorities and other actors to assess, plan, and implement urban resilience approaches, learn from each other, and identify innovation will, in turn, contribute to the AADMER Work Programme 2016–2020. Urban resilience cuts across all areas of the Work Programme. It is also particularly relevant to Priority Programme 2 “Build Safely.” This program includes “Promoting innovative practices toward building resilient and climate adaptive cities” among its outputs, and includes activities to build the capacity of urban planners and engage urban authorities on resilience initiatives.²¹

RECOMMENDATIONS TO THE ASEAN

The AADMER Work Programme 2 proposes important actions that will enhance urban resilience, specifically under Priority Programme 2: Build Safely. The following recommendations are based on this case study:

1. *Invest in peer-to-peer learning initiatives.* The context of each city is unique so there is no “cut-and-paste” plan guaranteed to work. Studies in Viet Nam have found that it can be difficult for risk reduction plans to keep pace with a country’s rapid urbanization process.¹⁸ A structured planning process is important, but plans must be allowed to evolve and adapt to each unique context.¹⁹ Peer to peer learning that supports iterative learning and adaptive planning are critical components of urban resilience.²⁰ Although a number of initiatives are already in place to promote cross-learning under AADMER Work Programme 2.0, these could be adapted to support peer to peer and iterative learning which brings together government officials and community representatives.
2. *Support local urban groups or movements working on community resilience.* Training and supporting a cadre of local urban actors who are embedded in their own communities to be disaster risk workers and responders can help fast track and sustain resilience building initiatives.
3. *Incentivize urban resilience building.* Under Priority Programme 2.0 Build Safely, ASEAN has committed to launch the Resilient Secondary Cities Challenge to encourage new cities to plan for a more sustainable and resilient future. Initiatives supporting this could include peer-to-peer learning and the production of a compendium showcasing structures and engineering solutions that have proven to be resilient to disasters.
4. *Commit to “build back better.”* City governments, private sector actors and residents have the opportunity during post-disaster recovery to rebuild infrastructure, essential services, and organizational systems so they are more resilient. Updated building codes should be complemented with collaborative urban planning that addresses the vulnerabilities of residents including those associated with inequalities.
5. *Ensure the resilience of urban small and medium enterprises (SMEs).* Private sector services are central to the lives and wellbeing of urban communities. In ASEAN countries, whole sectors are vulnerable to a single big disaster or a series of small disasters e.g. Marikina’s shoe and garment SMEs were nearly wiped out by typhoon Ketsana. Innovative schemes including insurance and loan schemes, should be developed to enable small businesses to recover quickly from disasters.

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03

THE ROLE OF WOMEN'S ECONOMIC EMPOWERMENT IN COMMUNITY RESILIENCE

PHILIPPINES

OVERVIEW

I used to believe that I am only good for the laundry. If I did not join, I would only do laundry for my whole life.

— A MEMBER OF THE STA. RITA MOTHER'S CLUB

Women become economically empowered when they enjoy their rights to control and benefit from resources, assets, income, and their own time; and when they can manage risks and improve their economic status and well-being. This case study draws on the situated practice of Santa Rita Mothers' Club in the Philippines and illustrates how women working together can overcome barriers to their economic empowerment and build more resilient futures for themselves, their families and their community.

KEY FEATURES



Community-
based



Knowledge
and innovation



Fostering
inclusiveness

INTRODUCTION

REGIONAL CONTEXT

People who are marginalized and who have less power in society are highly vulnerable to climate change, disasters, and other risks. Vulnerability is often high among women living in poverty, who in addition to the general risks faced by poor people, must contend with gender specific inequalities. These include limited inheritance or property rights, restricted mobility (in some societies), gender-based violence, and limited rights to control income and finance.^{1,2} Together, these inequalities increase the vulnerability of poor women to shocks and stresses. Women often suffer disproportionate mortality in disasters; an example of which is the number of women casualties in the Indian Ocean tsunami.^{3,4}

Within ASEAN member states, women are more economically disadvantaged than men across several indicators.⁵ This situation is exacerbated by women's general underrepresentation in enterprises and cooperatives, by frequent *de facto* exclusion from decision-making and leadership roles, and by time-poverty due to a multitude of household tasks. Understanding these barriers and overcoming them would enable women to increase their income, have greater control over their finances and time, and have a voice in the economic decisions that affect them, all of which are also necessary for their resilience and the resilience of their families.

ABOUT THIS CASE STUDY

Resilience is about more than technical fixes, it requires social transformation in the broadest sense. Investments in resilience will not trickle-down to women if they fail to address deep-rooted gender inequality and the

disproportionate burden placed on the shoulders of women living in poverty.⁶

The situated practice of Santa Rita Mothers' Club from the Philippines, demonstrates how women working together have overcome social barriers to their economic empowerment, increased their incomes and developed more resilient futures. This case study demonstrates that women's economic empowerment is a critical aspect of resilience, because economically empowered women are better able to deal with and adapt to the shocks, stresses and uncertainties they and their families and communities face.

SITUATED PRACTICE: WOMEN'S ECONOMIC EMPOWERMENT

INTRODUCTION

About 21.9 million Filipinos live in poverty.⁷ Among the poorest and most vulnerable group are the 2.9 million women employed in the agriculture, forestry, and fishery sectors; and the nearly 330,000 women who work in family-operated farms or businesses.⁸

The Santa Rita Mothers' Club is a community-based organization created in 1980. It is named after the *barangay's* (village) patron saint and situated in an area exposed to landslides, typhoons, and the outbreaks of pests that affect coconut trees, which is an important source of livelihoods.

"The club was first organized through a coconut-related project, and we thought among ourselves, 'Why not do this?' and utilize the products from coconut. The group was 'sharpened' by experience, and we later realized that we can expand into different projects, and not only make products from coconut materials. We saw, however, that we needed more knowledge. So we attended every

01 opportunity for training. Each member would contribute PHP 1 just to support the transportation costs to get to seminars,” said Bernadette Angeles or “Ka Bennie,” the club’s founder and current President.

02 The founding inspiration of the group still remains to be its inspiration today, “This is our inspiration: To make our livelihoods and our knowledge develop and grow. It is really about helping the family because we cannot just sit and wait,” Ka Bennie further said.

03 The club is now accredited by the Department of Social Welfare and Development and Department of Agriculture and is registered as a civil society organization in the Bottom-up Budgeting of the municipality.

04 THE CLUB’S ACTIVITIES

05 Santa Rita Mothers’ Club members are mostly women farmers and small-scale traders. The club has two main income-generating activities: growing and selling fruits and vegetables and poultry production.

06 **“ This is our inspiration: To
make our livelihoods and our
knowledge develop and grow. It is
really about helping the family because
we cannot just sit and wait.**

07 — KA BENNIE ANGELES

08 The members of the Mothers’ Club farm a 0.1 hectare communal garden. This parcel of land is owned by a club member, who rents it to the group. Fifteen members of the Mothers’ Club work on the garden, rotating the various duties involved in its maintenance (planting, watering, and harvesting). The farm was designed by Ka Bennie and


other club members, with inputs from a nearby university’s agro-ecology expert. Its initial construction was funded using seed money from the Philippine Coconut Authority.

The Mothers’ Club grows 55 different vegetables and fruits in their garden. This diversity of crops helps the women to manage risks; if one crop fails due to adverse weather conditions or outbreaks of pests and diseases, there are other crops to harvest and sell. The members also grow root crops to provide food security for them and their families during typhoons. Members of the club who are professional traders buy the produce to sell in larger markets in nearby Biñan, Cavite, and Divisoria. The income received is redistributed to the club’s members.

The members make organic fertilizer from the Club’s poultry farm and use it to improve the soil in the garden. Rainwater is collected so that there is a water supply during dry summer months.

The club rears up to 8,000 chickens in a large, well-ventilated wooden structure situated in the village under the shade of trees. Members who help rear the chickens are paid for their labor. When the chickens reach the appropriate size, they are sold to San Miguel Corporation (a Filipino multinational food, beverage, and packaging company). At one time, the club had a commercial contract with San Miguel Corporation to rear 30,000 chickens. However, when typhoon Xangsane (local name Milenyol) destroyed the chicken pens in 2006, the club decided to terminate the contract although the corporation wished to continue. Ka Bennie explained, “We did not want to be indebted anymore, and San Miguel Corporation only offered loans as support. We are afraid of incurring debts. We are only poor, and if we stumble, we have nothing to pay (the loan with).”

09 Club members take every opportunity to develop their skills and understanding. Each member contributes PHP 1 to build a transportation fund so members can attend trainings and seminars run by international and national



The club was first organized through a coconut-related project, and we thought among ourselves, “Why not do this?” and utilize the products from coconut.

The group was sharpened by experience, and we later realized that we can expand into different projects, and not only make products from coconut materials. We saw, however, that we needed more knowledge. So we attended every opportunity for training. Each member would contribute PHP 1 just to support the transportation costs to get to seminars

— **BERNADETTE ANGELES, FOUNDER AND PRESIDENT OF STA. RITA’S MOTHERS’ CLUB**

PHOTO BY GENEVIEVE ESCATAN

Ka Bennie shows the core learners the club's poultry farm, which has over 8,000 chickens. **PHOTO BY GENEVIEVE ESCATAN**



NGOs, the municipal government and the provincial farmers' federation, of which Santa Rita Mothers' Club is a member organization.

IMPACTS

The club provides support to each member on a per need basis. "It is really (based) on what we discussed and agreed on. Most of those who live here are originally from here, and those who do not have their own house are migrants. We just agree to divide (the benefits) equally like siblings. In practice, this means that we rotate the benefits—if one group receives livestock, then another set of people will receive something else next time," Ka Bennie explained.

The club pays the monthly premium for members' social security (the social insurance programme of the Philippines) to provide longer term income security for each of its members. The club itself provides monetary support to members in the event of the death of a family member. They have some insurance from the coco levy fund as they are members of the coconut farmers' confederation.

Income from poultry sales is used to purchase residential land for members. Ka Bennie explained how this contributes to the long-term resilience of members' households, "Whenever there is a typhoon, our houses get destroyed. Landowners see this as an opportunity to evict our members (from the land where their houses are built on). We need to prioritize relocation, so our members

can remain on their own land when they get old, without the risk or fear of eviction.” So far, the club has acquired a total of 3,800 square meters of residential land for 22 of its members.

Members describe how the support they receive from the club goes beyond increased income. The sense of solidarity, understanding, and common interest that they find in each other has provided a kind of moral support that the women value enormously. They also shared how their sense of personal empowerment has grown as they have gained the capability to generate more income. “So people get to ask themselves, ‘What about them? Why does it still run well? They are not going hungry.’” (Anon).


When asked why the group has been successful, Ka Bennie replied, “First, it is because of our unity and solidarity. Second, it is because of our mutual agreement and understanding, and because the intention of each member is focused on it (on the mutual understanding). If we are not unified, then we will have nothing—this is all we have got. It’s also because we are happy. Like me, when I am home, I do many things. When we (the club members) get together, we are excited. It is as if we are just friends. We say, ‘Here we go, we will gather and meet again.’ When we get here, we talk about many things while working. We enjoy ourselves. Although we are poor and are struggling, we also find the time to have fun and enjoy.”

The club has also proactively accessed support from many agencies including international NGOs and a national University. This demonstrates the importance of social networks for women’s economic empowerment and resilience.

Due to the success of the Mothers’ Club, fathers and the other men in the community asked to join so the community established a new organization for men—the Lawaguin multi-purpose Cooperative.

CHALLENGES AND LESSONS

The club has faced several challenges over the years. Currently, they are focusing on strengthening the communal garden because they can sell its produce for a good price. In the past, they have tried to develop other small-scale enterprises, but had to give them up due to limited market access. Poor access to markets limits the club’s livelihood options and poses a risk to the members’ long-term resilience. The members identified product development and marketing as areas that they want to develop with support from other organizations. They also need better access to financial services, including insurance. When past typhoons have damaged the club’s chicken pens, they have not had the insurance to cover the loss of the pens or the chickens.

 **There are some members who are not interested in certain things, but we make sure that they can participate in other activities that interest them so that they would not feel excluded.**

— KA BENNIE ANGELES

The women agree that their attitudes are changing, and that their children are often more supportive of their economic and social empowerment than their husbands are. Even so, structural barriers remain an ongoing challenge for many club members. “If one will go against another, nothing will happen. The flow will not be good; it doesn’t matter how much you want for your family. If there is someone at home who is against our working away from home, then our work becomes very difficult. That is



TOP. Featured in Barangay Lawaguin office is a mural showing the map of Nagcarlan, Laguna.

RIGHT. Rhoda Avila, Philippines Country Focal Point for the P2P project, talks about the role of women as decision-makers in community resilience building. **PHOTOS BY GENEVIEVE ESCATAN**



what I see. Whenever I have to go somewhere, I prepare for what they (my family) need at home. I tell them that it is up to them to cook, clean, and attend to visitors. They know what to do. This means we are helping each other. They already know that they have to take responsibility because I have to do other things" (Anon).

Not every member of the club has been able to overcome the household-level barriers to their empowerment. "What I see in the other members is that they remain stagnant. They cannot widen their mindsets and horizons," said Ka Bennie.

Some members are engaged in an ongoing process of persuading their husbands and (sometimes) children to support them in their work outside the home. Some of the women are still challenged by their husbands while others receive no or little support. Thus, the women carry the burden of household care alongside their livelihood

activities. There are also incidents of domestic violence by husbands against wives.

The club has learned some important lessons about the resilience of their livelihoods, such as the value of having several small-scale enterprises. "Diversity is a good way to manage (business operations)... when (the) poultry business had been affected, we still had the garment business and the stores (to operate). We still have something to do together and unify in," said Ka Bennie.

Flexibility is also an important aspect of the club's approach. Ka Bennie explained, "There are some members who are not interested in certain things, but we make sure that they can participate in other activities that interest them so that they would not feel excluded." For example, some of the members are farmers and traders. Accepting that members have different skills and opportunities allows the members to contribute to the club in different

ways, with some members cultivating vegetables and others selling them.

The opportunity to participate in businesses does not, on its own, overcome all the obstacles that many women face to fulfilling their rights. Access to education and health care; gender-based violence; and social, cultural, and legal norms can all prevent women from gaining more income and economic empowerment. Again, the example of Santa Rita Mothers' Club, in which not all the participating women have managed to gain support for their work from their families, illustrates this point well.

GOOD PRACTICE

Women's economic empowerment is a critical aspect of resilience, because economically empowered women are better able to deal with and adapt to the shocks, stresses and uncertainties they and their families and communities face. It is also central to the 2030 agenda for sustainable development⁹ and in 2016, the UN's Secretary General's high-level panel on women's economic empowerment set out seven drivers of women's economic empowerment (Figure 1). The five principles set out below are based on this framework and support the development of programmes that advance women's economic empowerment and community resilience:¹⁰

- *Principle 1: Increase the voice of women in the household, in communities, in economic institutions and in political spaces.* Collective action is an important principle in women's economic empowerment., "Where people are individually powerless, there have to be strong local organizations of one kind or another."¹¹ Research has shown that women working together in agriculture-based enterprises typically earn more than their counterparts do when working

alone. In some instances, this may translate into increased freedom of movement, increased control of household expenditure, and increased decision-making power over the use of agricultural income.¹² Small, informal women-only groups such as the Santa Rita Mothers' Club enable their members to build confidence, leadership skills, and savings. Moreover, this type of collective action can help reduce the risk to individuals through pooling risks at the level of the enterprise.¹³

- *Principle 2: Take a systems approach to overturn the barriers to realizing women's economic rights.* Identify the best opportunities, and the major barriers to realizing economic rights that affect the target female population. Take a differentiated view of women that does not treat them as a homogenous mass but reflects differences in social status, income, location, ethnicity, etc. Analysis and diagnosis should be ongoing, as social, political and economic dynamics shift continuously.
- *Principle 3: Harness multiple entry points to ensure meaningful women's economic empowerment and support women's empowerment more broadly.* Identify the best entry points to women's economic empowerment according to the context. Addressing social or political empowerment may be prerequisites or provide the best entry point for women to be able to participate meaningfully in economic activities.
- *Principle 4: Build partnerships that embed ownership in local systems.* Build strategic partnerships that support and strengthen women's rights organizations. When governments, private sector companies, agricultural producers and workers' unions, women's organizations and civil society intentionally work together or form partnerships, positive change can be achieved at scale.¹⁴

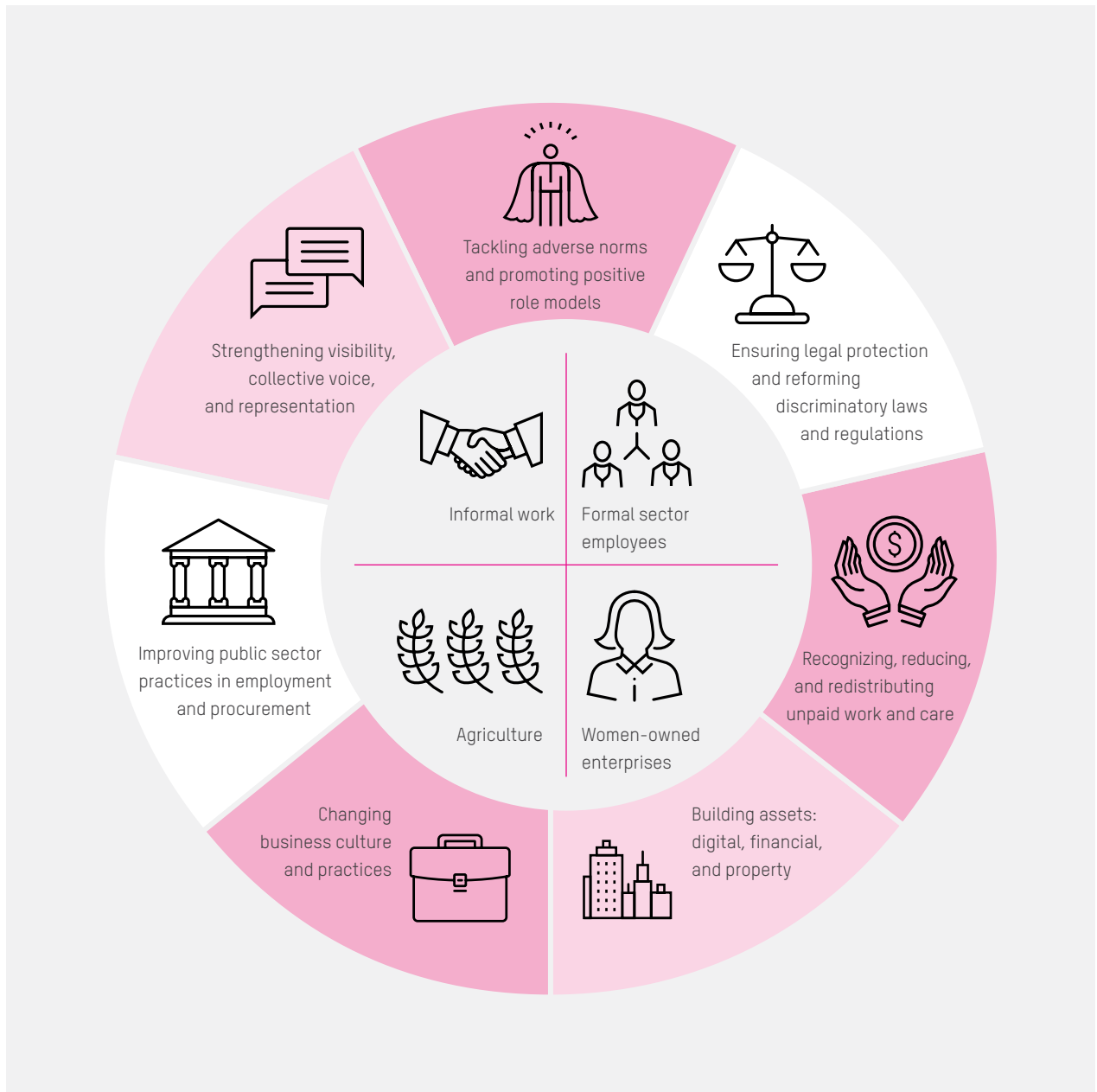


FIGURE 1. Seven Drivers of Women’s Economic Empowerment (WEE)¹⁵

- *Principle 5: Strengthen capacity to ensure programme quality.* Use tools and methods that ensure a focus on women in all stages of programme design. Ensure solid monitoring and evaluation mechanisms that go beyond measuring increases in income or number of women in jobs by assessing skills, knowledge, participation, agency, and women’s control over time, assets and resources.

RECOMMENDATIONS TO THE ASEAN

Focusing on women’s economic empowerment is a critical aspect of resilience, because economically empowered women are better able to deal with and adapt to shocks, stresses and uncertainties they face. ASEAN can strengthen women’s economic empowerment by adopting the following recommendations:

1. *Recognise and support the critical role of women’s economic empowerment for community resilience.* Women’s economic empowerment does not feature explicitly within the AADMER Work Programme 2016-20, however Priority Programme 4: Protect, recognises that access to financial services and loans in post disaster situations is required if small and medium sized enterprises and small holder producers are to be resilient. This commitment can be developed to include provisions that ensure these services are accessible to women as well as to men smallholder producers by addressing the social and economic barriers that limit women’s access, which may be specific to each of the ASEAN member states.
2. *Facilitate peer to peer learning.* ASEAN can use its existing platforms such as the ASEAN Climate

BOX 01

WOMEN’S ECONOMIC EMPOWERMENT AND THE AADMER WORK PROGRAMME

Women’s economic empowerment does not feature explicitly within the AADMER Work Programme 2016-20. However, supporting the increased resilience of women in agriculture contributes to the AADMER Work Programme 2016-20 Priority Programme 4: Protect: Protecting economic and social gains of ASEAN Community. Specifically, this is related to Component 2 (Enhancing access to finance for the private sector which includes SMEs and small holder producers) and the output:

- Building the resilience of small and medium sized enterprises microenterprises and small holder producers through accessible financial services and loans in post disaster situations.

Change Initiative (ACCI) and the ASEAN Multi-Sectoral Framework on Climate Change: Agriculture, Fisheries and Forestry towards Food Security (AFCC), to engage with and promote women’s organizations as legitimate actors who can bring unique value to resilience policy and practice. Fostering collaborations between government actors, and grassroots women’s organizations would contribute to strengthening women’s leadership and bring mainstream attention to the specific risks women face and the ways in which gender inequality erodes resilience.

3. *Broaden the way resilience is addressed.* Technical disaster preparedness and risk reduction projects should go hand-in-hand with efforts to shift attitudes and beliefs about gender, and challenge cultural stereotypes that reinforce women’s inferior social status and exacerbate their vulnerability to



TOP. One of the core learners explores the farm of the women of Sta. Rita Mothers' Club. **RIGHT.** Members of the club show their fresh harvest to the core learners. **PHOTOS BY GENEVIEVE ESCATAN**



shocks and stresses. These should include projects to build women's leadership and self-confidence, raise awareness about women's rights, and promote women's economic empowerment.

4. *Improve insurance and social protection schemes.* This case study has shown the importance of risk transfer and social protection mechanisms for small scale farmers and producers like Sta. Rita Mother's Club. There is currently a lack of evidence about how insurance initiatives help smallholder farmers to better manage disaster and climate risks. ASEAN through its Regional Risk Financing and Insurance Framework, could undertake an assessment of insurance mechanisms to assess which are most applicable to women's agriculture based enterprises and support their development and scale-up.

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04

**SAFE SCHOOLS
AND COMMUNITY RESILIENCE**

THAILAND

OVERVIEW

Children love to help. If given the chance and proper guidance, we can do anything and build our resilient future.

— SUAYHAN LUNGA, STUDENT, BAAN TON PHUENG SCHOOL

School children and schools in the ASEAN region are exposed to a range of large and small scale disasters including earthquakes, floods, typhoons and forest fires. The situated practice from Pha Due School in Thailand demonstrates how the education sector, parents, students, teachers and civil society organizations can work together to make school children and their schools safer. The safe schools programme supports students, teachers and parents to take local action to manage risks; in this way, it also develops core competencies for resilient communities, leadership and innovation.

KEY FEATURES



Demonstrates
good governance



Knowledge
and innovation



Wide applicability
in region

INTRODUCTION

REGIONAL CONTEXT

About nine out of ten children in Southeast Asia spend half of their waking hours in school.¹ However, most schools in the region are not disaster resilient and thousands of schools are damaged or destroyed each year by earthquakes, typhoons, floods, landslides, tsunamis, and other hazards.² In Cambodia, Lao People's Democratic Republic (PDR), and Thailand, the annual flooding of the Mekong River causes more than half of the schools in the affected provinces to close for days or months at a time. In the Philippines, 10.8 million students were affected by disasters in 2007–2011.³ Typhoon Haiyan damaged or destroyed close to 3,200 schools and day care centers in the Philippines. Over a million preschool and school-aged children were out of school in the immediate aftermath of the typhoon, and close to 31,600 teachers were affected.⁴

“ We talk about real issues, and we try not to use the word “disaster.”

— PHA DUE SCHOOL TEACHER

Education is a child's right. When education is disrupted, children face higher dropout rates, and higher risks of poverty, exploitation, and violence.⁵ Unmanaged disasters are likely to limit progress towards the UN Sustainable Development Goal 4: “Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.”⁶

Eight countries within ASEAN—Thailand, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, the Philippines, and Viet Nam—are responding to these challenges by implementing the ASEAN Safe Schools Initiative (Box 1).

BOX
01

ASEAN SAFE SCHOOLS INITIATIVE (ASSI)

The ASEAN Charter, launched in 2007, emphasizes the strategic importance of closer cooperation in education and human resource development among ASEAN member states. Alongside this, the institutional framework for safe schools in ASEAN is well developed, and drives and supports relevant authorities to take up the safe schools programme.

ASSI is based on partnership; it promotes the collaboration of disaster management and education authorities and civil society to achieve a comprehensive approach for school safety. The ASEAN Committee on Disaster Management endorsed ASSI in 2013, and approved it for implementation in 2014. ASSI was considered a priority of the AADMER Work Programme 2010–2015 and remains a priority initiative under the AADMER Work Programme 2016–2020 (Priority Programme 2: Build safely with a vision for scaling up and expansion in the region). Support for ASSI is now part of the ASEAN Work Plan on Education 2016–2020 (sub-goal No. 5).

In ASEAN countries, the Ministry of Education usually leads the planning and implementation of school safety activities, with support from National Disaster Management Offices or other local agencies. At sub-national levels, education administration units and local authorities have established platforms to work together on disaster risk reduction.

ABOUT THIS CASE STUDY

Making education resilient to the impacts of disasters requires the implementation of three core activities: protecting the physical infrastructure of schools, school disaster management planning, and education on risk and resilience.^{7,8} The third of these, education on risk and resilience, is demonstrated by the situated practice of Pha Due School in Thailand.

SITUATED PRACTICE: PHA DUE SCHOOL, THAILAND

BACKGROUND

Thailand is exposed to monsoons and tropical hurricanes and suffers floods, landslides, and wildfires. Among these hazards, flooding has the highest impact nationally; it regularly affects millions of people each year and causes tens to hundreds of million in US dollars of damage.⁹ However, in 2010, Thailand faced its worst drought in 20 years.

Thailand's 1999 Education Act guarantees the right of all children to education, without discrimination. In 2009, the government extended mandatory free education from 12 years to 15 years. Access to basic education is expanding. The net enrollment rate for primary school of children aged 6–11 years increased from 81.4 percent in 2000 to 90.05 percent in 2009. And the net enrollment rate for secondary school children aged 12–17 years increased from 55.4 percent in 2000 to 72.22 percent in 2009.¹⁰

Since 2007, the Office of Basic Education Commission, under the Ministry of Education of Thailand, has been working with the Department of Disaster Prevention and Management (DDPM) and civil society groups to make school safety a national programme. ASSI has established the Thailand School Safety Network (TSSN) to promote coordination, collaboration, and mutual capacity building among its members.

TEACHING DISASTER RISK REDUCTION

Pha Due School is in an isolated farming village of about 200 households in Mae Jan district, Chiang Rai province. Its seven teachers and one head teacher teach 350

PHA DUE SCHOOL

MAE JAN DISTRICT, CHIANG RAI

8 teachers 350 students

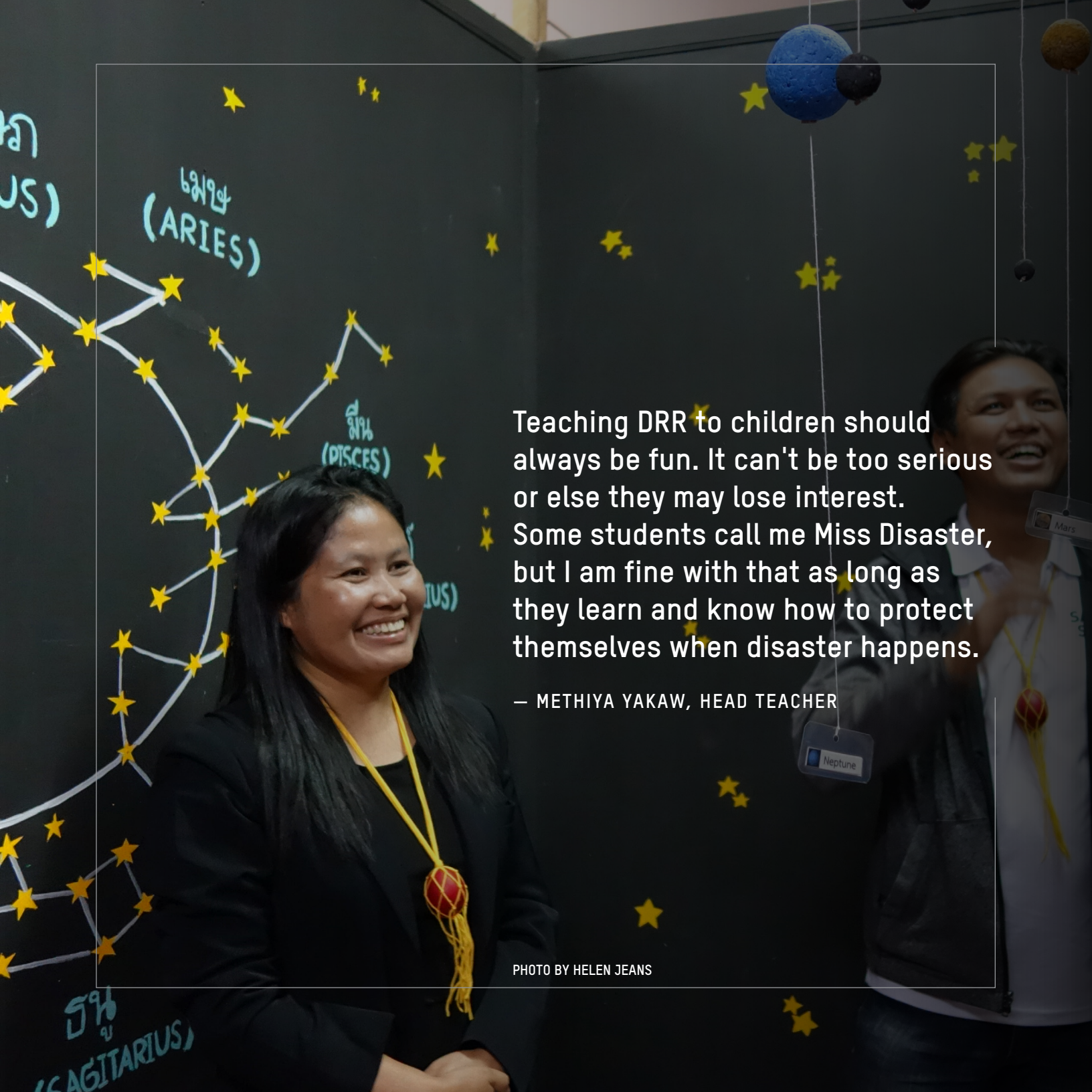
43.75 students = 1 teacher

2008 start of safe schools program

children from kindergarten to grade 6. The school has been implementing the safe schools programme since 2008, with support from the district's Department of Education and Plan International.

The teachers emphasized that disaster risk education has to be enjoyable for the students, "It can't be too serious, it has to be fun too. We talk about real issues, and we try not to use the word 'disaster'. Even so the children call me 'Miss Disaster'," joked Head Teacher, Methiya Akaw. Disaster risk reduction themes and topics are integrated into all the subjects of the curriculum and teaching them often requires going out of the classroom and into the environment and community.

Methiya explained that these activities "Encourage children to look around them, at the community and the environment, and to experiment and find answers for themselves." She added that through this, the safe schools programme goes beyond raising disaster awareness by building "new life skills needed for a changing world." For example, leadership is encouraged through appointing student leaders, who support and give feedback to the teachers during and after outdoor activities.



Teaching DRR to children should always be fun. It can't be too serious or else they may lose interest. Some students call me Miss Disaster, but I am fine with that as long as they learn and know how to protect themselves when disaster happens.

— METHIYA YAKAW, HEAD TEACHER

PHOTO BY HELEN JEANS



TOP. One of the activity sheets taken from one of the rooms in the DRR learning centre shows a family being rescued from a flood. **RIGHT.** Children happily engaged with their peers discussing DRR. **PHOTOS BY JANICE IAN MANLUTAC (TOP) AND PLAN INTERNATIONAL (RIGHT)**



The safe schools programme at Pha Due School has given expression to creativity and leadership among students and teachers. Students have crafted beautifully illustrated books and posters on disaster risk reduction, and written them in their own indigenous language. The books also feature drawings of people dressed in the traditional clothing of this region. During the peer-to-peer learning visit, young girl student leaders shared their ideas about adapting the safe schools programme in their homes and wider community using a peer-to-peer approach to bring their parents and other members of the community together to manage local risks.

The school, with the support of Plan International and parent and civic volunteers, has created an extraordinary exhibit by subdividing a school building into small rooms. Led by the Methiya, the rooms have been ingeniously decorated to illustrate key concepts from the natural sciences and disaster risk management, which also feature drawings of people wearing the indigenous

clothing of the region. Integrating disaster risk education into the school curriculum has enabled the teachers, students, and parents to integrate scientific concepts and practical approaches that address disaster risk into the community's deep sense of its own indigenous identity.

As one mother said, "The safe schools programme means that schooling is done differently. The students learn everything—scientific learning and general learning—through a hands-on approach."

COLLABORATING TO MAKE SCHOOLS SAFE

"There are new forms of disasters in the world that have become more and more frequent. So we need school leaders to be community leaders as well; safe schools create future leaders who are more aware of risks," said District Education Officer, Anuchot Yosuya. He also highlighted the holistic nature of safe schools saying, "The school environment needs to be safe. This is not

about new buildings, but about making what we have here now safe. Doing a risk evaluation of the school raises awareness. Disaster management is integrated into the courses, curriculum, and tools that teachers use to teach. This creates an environment where children can talk (about risk) to the community.”

Head Teacher Methiya, added that the shared ambition of the District Department for Education, the school head, teachers, and parents is for the school to become a model of safe school best practice. This requires working in mutually supportive partnerships. She said, “This school is successful because it is very good at coordinating—with Plan International and with the community. The Education Office also works with Plan International to support the school and the district education office provides workshops, follow-up training for teachers, and monitors schools taking part in the programme.”

The DDPM currently provides safe school learning materials and training for teachers through its regional centers and has a dedicated budget for this purpose. For the next three years, the DDPM will adopt the safe schools programme which means that support will continue when Plan International ends its support.

IMPACTS

Through the safe school initiative, the school has begun to address local hazards. For example, the smoke and fog from the land-clearing burning activities of farmers was affecting the school and the wider community. The teachers and members of the community talked to the farmers about how the smoke was disturbing the students and increasing the risk of forest fires. As a result, the farmers agreed that they would not burn near the school and would reduce their burning activities to particular times of the year. The students also know how to prevent

There are new forms of disasters in the world that have become more and more frequent. So we need school leaders to be community leaders as well.

— MR. ANUCHOT YOSUYA

and extinguish fires, and they regularly practice fire and earthquake drills.

The students’ exposure to disaster risk education gives them confidence to share risk reduction knowledge with their parents and members of the wider community, many of whom may not be literate. As the father of one student said, “When I was 20, there was no school (to teach us about DRR). We were able (to do things on our own) to help ourselves; but in the past, there weren’t many disasters. But now, with more people, there are also too many farms (that can be devastated by hazards). We have no natural ways to stop fires and landslides.”

CHALLENGES AND LESSONS

All teachers agreed that getting teachers and parents to engage early in the programme required focusing on the specific hazards and everyday risks that the school is vulnerable to, such as forest fires, landslides, earthquakes, road accidents, and food safety. Importantly, this enabled trust to be developed early on between all the stakeholders – teachers, parents, students, community members and the local authorities. Trust was identified as the most critical factor in the programme’s success.

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“ The school environment needs to be safe. This is not about new buildings, but about making what we have here now safe. Doing a risk evaluation of the school also raises awareness. Disaster management is integrated into the courses, curriculum, and tools that teachers use to teach. This creates an environment where children can talk to the community.

— MR ANUCHOT YOSUYA, DISTRICT
EDUCATION OFFICER

The head teacher had to have a clear vision for the whole school and “encourage the teachers to support each other—rather than impose a top-down approach—by creating a platform for teachers to express their ideas and be a team.” At the beginning the head teacher had to manage the different interests of the teachers (e.g. health, green energy, etc.). Competition between community groups was also an issue, making it important to work with a range of groups, build trust, and communicate well.

Although the parents value their close working relationship with the school, they also wish to work more closely with the local government to develop activities that can reduce the overall risks that the community faces from flash floods and forest fires, to new emerging risks.

Children help design disaster risk reduction books in Baan Ton Phueng School in Chiang Mai.

PHOTO BY SARANYU KAEWKANTHA/FOPDEV





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BOX 02

CHILDREN INSPIRE ACTION

Ms. Suayhan Lungya was proud and also a little surprised at the attention she received for winning the 1st prize in the Disaster Risk Reduction Student Essay Competition run by Save the Children.



During the Thailand P2P learning journey, Suayhan met one of her readers, Pathawee Axe Suksawat from Raks Thai Foundation. They were both surprised by the chance meeting and Pathawee was able to tell Suayhan that he had been deeply moved and inspired by her essay.

“I admire her very much,” said Pathawee. “The language is innocent, it is very sad. I feel it comes out from her heart.” He went on, “in the past we put elderly people and children in a ‘vulnerable group,’ but they are very strong in helping the community. We will revise our plans and ask—what can the elderly and children do? The elderly and children also have a special connection—they talk to each other easily.”

This serendipitous meeting took place at a briefing convened for the P2P learning journey by the Pong Nam Ron subdistrict administrative office. At the briefing chaired by the mayor of Pong Nam Ron, different groups talked about their contribution to keeping the communities in seven villages safe. The meeting demonstrated the strong network of organizations working together comprising schools, the military, the DDPM, people’s organizations for the elderly and youth, INGO Plan International, and the Foundation for Older Person’s Development toward a shared vision of safe and empowered communities and citizens.

The essay competition received over 300 entries which were assessed by a panel of experts from the Department of Disaster Prevention and Mitigation, the Thai Red Cross Society, and the University of Thai Chamber of Commerce.

GOOD PRACTICE FOR SAFE SCHOOLS

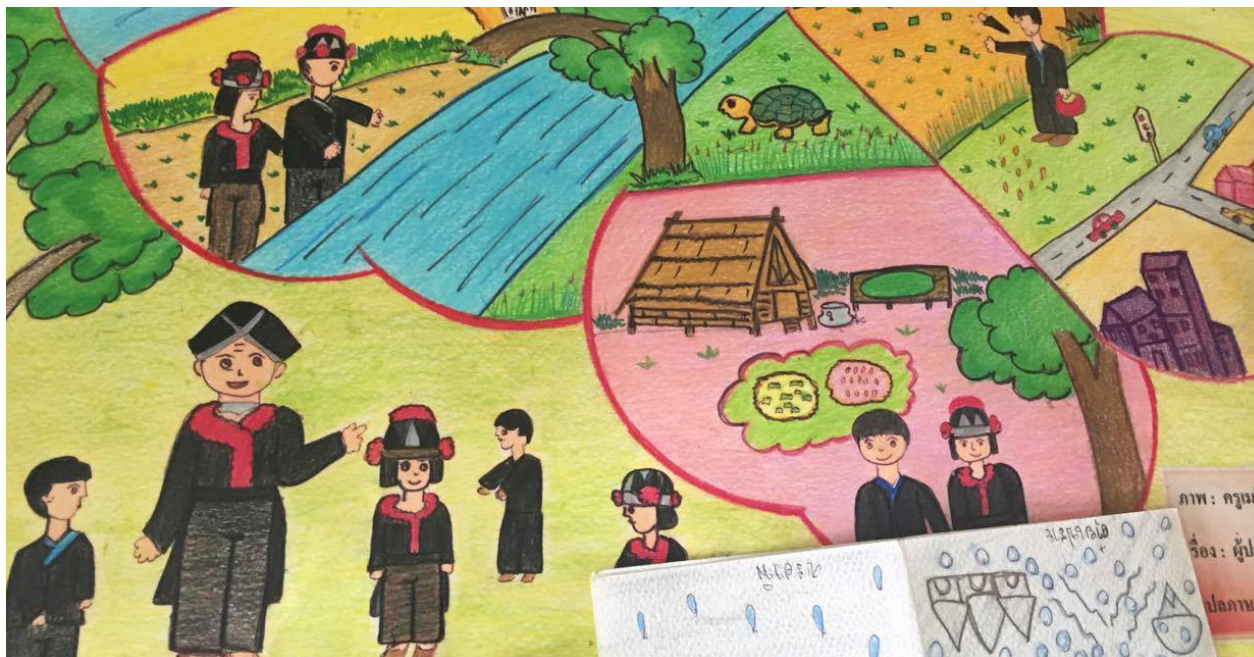
THE PRINCIPLES UNDERPINNING SCHOOL SAFETY

Safe school approaches within ASEAN benefit from having a framework that guides implementation: the ASEAN Common Framework for Comprehensive School Safety. The Common Framework was developed by ASSI (Box 1), and is based on the global framework developed by the Global Alliance for Disaster Risk Reduction and Resilience in Education Sector and the United Nations International Strategy for Disaster Reduction.¹¹

The ASEAN Common Framework for Comprehensive School Safety promotes a comprehensive approach to resilience in the education sector by embedding disaster risk reduction into education policies, plans, and programmes, which are aligned with national, subnational, and local disaster management plans.

The framework sets out four principles that guide its implementation across the many and varied contexts of the ASEAN region:

- *Schools as part of community.* Schools are integral to ASEAN communities, performing a range of social functions. This means that enhancing joint actions will benefit both the schools and the communities where they are located.
- *Local hazards and daily risks.* ASEAN member states have suffered several major catastrophic events that have severely affected the education sector. In addition, local flooding, landslides, storms, and heavy rains often damage school facilities. It is therefore important to give adequate attention to both small and large-scale hazards and risks.



TOP. This children's book, which was made for and by children, tells a story on environmental protection. **LEFT.** Children pose for a picture before performing their traditional dance. **RIGHT.** Solar systems and constellations are showcased in the Science Room of Pha Due School. **PHOTOS BY JANICE IAN MANLUTAC**

- *Legislation, resources, and existing partnerships at the national and regional level.* Existing legislation and policies provide a solid legal framework that supports the integration of DRR into the education sector.
- *Learning settings in the ASEAN.* Education in ASEAN happens in both formal and non-formal settings, such as early childhood education, facilities in evacuation camps for displaced people, youth movements and afterschool activities.¹²

The situated practice from Pha Due School illustrates the first two of these principles. The school has engaged its community to promote joint learning and action and teachers from the school emphasized the importance of focusing on local hazards as a starting point for making risk reduction relevant to students and the wider community.

THE THREE PILLARS OF SCHOOL SAFETY

Good practice in creating a safe and secure learning environment for children involves implementing activities that contribute to the three related pillars of school safety (Figure 1). The three pillars can be adapted to the different contexts within ASEAN member states and beyond, to formal and non-formal learning situations, and to rural and urban settings.

Pillar 1: Safe Learning Facilities. This pillar is about making schools safer places for learning, safeguarding school communities from deaths and injuries due to structural damage, minimizing losses to school infrastructure, and ensuring continuity of access to school facilities. Organizations and individuals (education authorities, planners, architects, engineers, builders, and school community members) involved in site selection,

construction, and maintenance need to identify the hazards and their potential impact on planned and existing schools; to ensure that school buildings are designed to withstand hazards; and to ensure strict compliance of school construction to existing national building codes, regulations, and standards.

Pillar 2: School Disaster Management. The aim of this pillar is to ensure that schools and the education sector can plan and take necessary actions to mitigate, prepare for, respond to, cope with, and recover from disasters. This is established via national and subnational education authorities and local school communities (including children and parents/guardians) working in collaboration with their disaster management counterparts. Activities under this pillar include assessing disaster management capacity, developing guidelines and training, implementing disaster mitigation and response-preparedness measures at schools, conducting emergency response, and prepositioning equipment for effective school disaster management.

Pillar 3: Risk Reduction and Resilience Education. The aim of this pillar is to develop a culture of safety and resilience through enhancing the students' and the general public's knowledge, attitudes, and skills for disaster risk reduction. Activities include integrating risk reduction and climate change adaptation into the formal educational curriculum, developing learning materials on disaster risk, training teachers and school staff, and promoting risk reduction knowledge and skills in informal education training and activities. There is an increasing amount of high-quality material to support this pillar;¹³ however, progress in promoting risk reduction may be restricted by the heavy workloads of many teachers.¹⁴

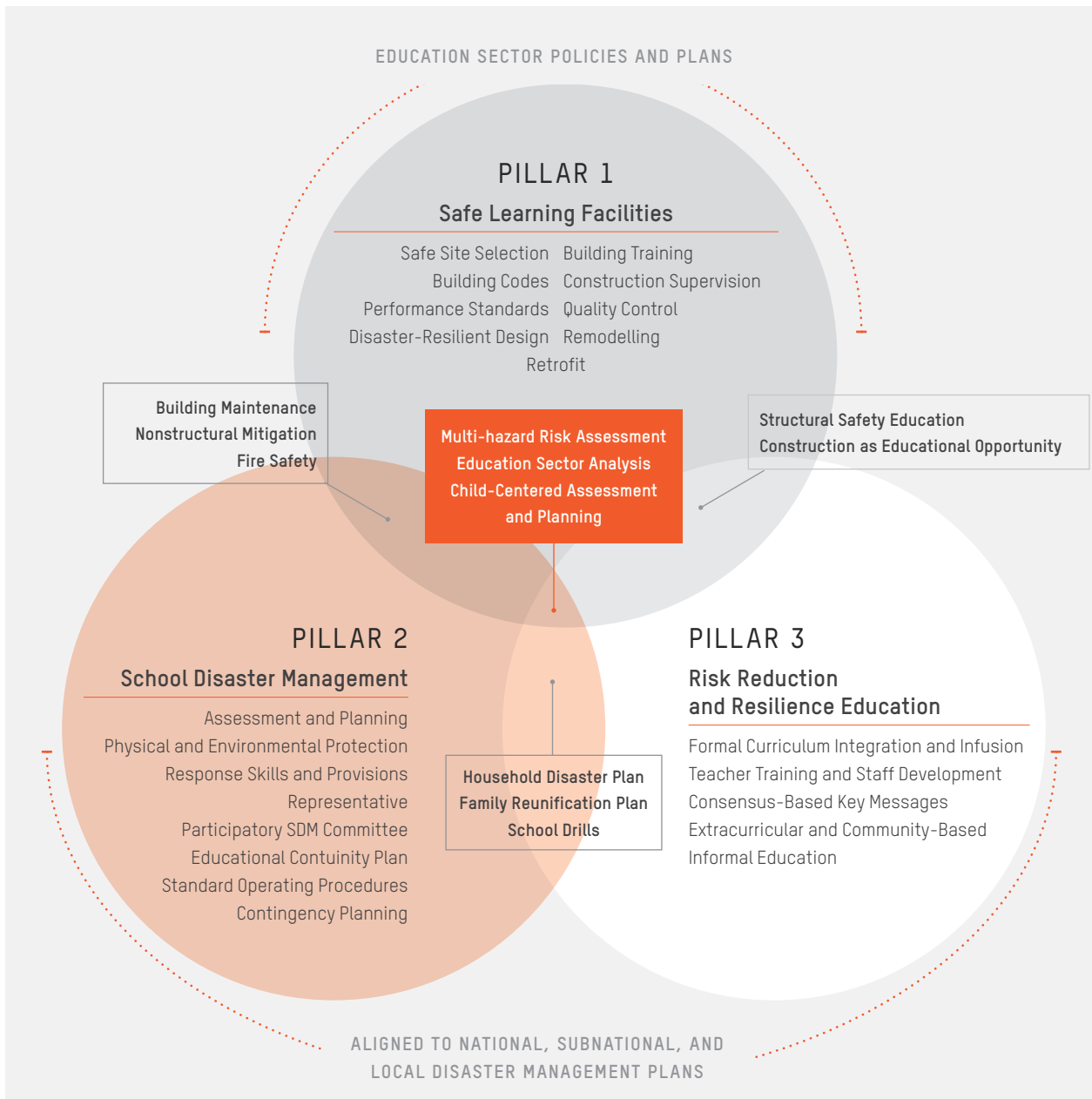


FIGURE 1. The Three Foundational Pillars of School Safety¹⁵

BOX 03

TEACHERS ARE CREATIVE LEADERS

At Pha Due School, a classroom has been converted into small units and decorated to illustrate concepts from astronomy, environmental science, and disaster risk.

It is surprising, inspiring, and the result of Ms. Methiya Yakaw's creative vision.

Ms. Methiya Yakaw is the link person for Pha Due School's participation in ASEAN's Safe School Initiative. It is one of six schools in Thailand supported by the office of Basic Education Committee and Plan International to be a pilot Safe School.

Pha Due School demonstrated that Safe Schools are more than safe schools. They empower the creative leadership of teachers, foster environmental awareness and action, support new forms of "out of the classroom activity based education," and create an opportunity to bring together scientific, local, traditional and indigenous knowledge.

They are also incubators of the more visionary generation that will be required to address the challenges of climate and other environmental change.

As Christiana Figueres, the former Executive Secretary of the UN Framework Convention on Climate Change said, "We should keep teaching children not to lose their 'imaginal cells,' as they are profoundly inspirational and help us to realize our deepest desires."

CONCLUSIONS

Safe school initiatives can contribute to a safe and secure learning environment for children and can be a mechanism to communicate disaster risk reduction to the wider community. The situated practice of Pha Due School demonstrates the need to focus on everyday risks first, and to be creative and child-friendly in talking about disasters. Partnerships are an important enabler of safe

schools and so time and resources need to be allocated to enable trusted partnerships to be developed and sustained by all stakeholders including those within and outside the school, the wider community and local authorities. The institutional structures supporting safe schools in ASEAN provide a mandate and framework of good practice that all stakeholders can be accountable to. It is also recognized that there is still some way to go before many aspects of school safety are fully implemented across the region, including safe school design and retrofitting school facilities in remote rural areas, and increased collaboration between all responsible agencies.¹⁶

RECOMMENDATIONS TO ASEAN

The establishment of a mechanism to monitor and evaluate the resilience of schools is an objective of the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme 2.0, and is currently being discussed. These recommendations for ASSI are drawn from the situated practice of Pha Due School:

1. *Peer-to-peer learning.* Although some peer-to-peer learning initiatives are being supported within ASSI countries, most do not include subnational and community based organizations and leaders. The equivalent of the Thailand School Safety Network could be explored for other ASEAN countries to support peer-to-peer learning about identified challenges such as developing leadership, trust and interagency collaboration, and integrating disaster risk into the curriculum in ways that do not overburden teachers.
2. *Promote schools as centers of disaster risk management excellence instead of disaster evacuation centers.* In some countries, schools are used as evacuation centers, which disrupts education and

damages school buildings and facilities. Instead, schools should be viewed as key actors for disaster risk reduction awareness and action for the wider community. Schools could also become the repository of learning on local disaster risk management.

3. *Support the roll-out the safe schools programme at scale by providing donor-friendly funding mechanism for ASSI.* Safe schools are a proven concept with an institutional framework. However, funding for ASSI is currently a challenge, especially for poorer local governments. New and innovative funding mechanisms should be developed to fast track safe school initiatives under the AADMER Work Plan 2.0 Build Safely programme, of which ASSI is a key priority.

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05

THE ROLE OF ELDERLY PEOPLE IN COMMUNITY RESILIENCE

THAILAND

OVERVIEW

If we can use the knowledge of older people in DRR work in Thailand, we wouldn't have to worry about natural disasters.

— BOONPENG INKAEW, ASEAN CHAMPIONS SENIOR CITIZEN AWARDEE FOR DISASTER MANAGEMENT IN COMMUNITIES

The aging population of ASEAN countries is an important consideration for the region as it works to build its resilience. One way of enhancing the resilience of elderly people and engaging them in resilience building, is through community-based disaster risk management, which is an approach that uses the existing knowledge, relationships, and assets of communities to develop and implement disaster management plans and activities. This situated practice from Pong Nam Ron Village of Fang district, Thailand demonstrates how elderly people can drive community-based disaster risk management including by bringing together community groups, local authorities, and civil society organizations to implement joint activities which are appropriate to the local context.

KEY FEATURES



Community-based



Risk management and vulnerability reduction



Fostering inclusiveness

INTRODUCTION

REGIONAL CONTEXT

Today, 66 percent of the world's population over the age of 60 is living in developing countries. This number is projected to increase to 79 percent by 2050. Most ASEAN member states exceed the world average life expectancy, which is 63.9 years of age, led by Singapore (79.4 years) and Brunei Darussalam (77.1 years).¹

Longer life expectancies are a triumph of development and improvements in health care. At the same time, the combination of more extreme climate events and disasters and increasing life expectancies will result in a greater number of older people being exposed to hazards in ASEAN member states.

It is important that the older people are involved in DRR work because we are the ones that spend a lot of time in the village.

— BOONPENG INKAEW

Older people can be disproportionately affected by disasters. For example, almost 40 percent of the people killed by typhoon Haiyan (local name Yolanda) in the Philippines were estimated to be over the age of 60, although this group make up just eight percent of the population in the affected areas.² Older people have specific vulnerabilities to shocks and stresses which are exacerbated by respiratory illness, heart disease, reduced mobility, social exclusion, reduced access to income, and dependency on health services and social protection that may be disrupted during disasters.

There is also significant underinvestment in humanitarian response for the elderly. A study by HelpAge International found that only one percent of funded projects using humanitarian financing targeted older people in 2012.³

ABOUT THIS CASE STUDY

Community-based disaster risk management (CBDRM) is an approach that aims to develop locally appropriate and locally owned strategies for disaster preparedness and risk reduction. The combination of local ownership and appropriateness leads to the sustainability of risk reduction actions that are critical for the periods before, during, and after disasters.

The starting point for CBDRM is the understanding that all communities have assets and strategies that enable them to cope with disasters. These may include knowledge of signs warning of an impending disaster, knowing where the locally safe and vulnerable areas are, experience of past disasters, methods of survival, and social relations that are vitally important in coping with crisis. "People continually adapt to crisis, coming up with creative solutions. They prioritize livelihoods and household assets rather than the quick fix."⁴

CBDRM aims to build upon these existing assets and solutions so that individuals in the community are familiar with and developing appropriate disaster prevention and response strategies. Through actively engaging at-risk communities, including older people, in the identification, analysis, treatment, monitoring, and evaluation of risks, a community can reduce its vulnerabilities and enhance its capacities to deal with disasters.

The situated practice of Pong Nam Ron village, Thailand focuses on how the active participation of elderly people, a group usually considered to be vulnerable to disasters, in CBDRM can be a highly effective way of

01 galvanizing the energy of local people and the authorities to implement appropriate risk reduction measures.

02 **SITUATED PRACTICE: PONG NAM RON VILLAGE, THAILAND**

03 **INTRODUCTION**

04 During the past two decades, long dry spells and flash flood events in Thailand have become more frequent and intense.⁵ Rainfall was below normal levels between 1990 and 1993, causing water shortages. This was followed by intense rainfall in 1994 and 1995 resulting in severe flooding. In 2005, 11 million people were affected by water shortages. In 2008, over 10 million people in rural agricultural regions were affected once again by drought. In 2011, more than one million people were affected by severe flooding.⁶ By 2015–2016, the country was experiencing one of the worst droughts in decades. Rainfall is predicted to become increasingly variable over the coming decades.⁷

05 The village of Pong Nam Ron is located in Fang, Chiang Mai province. The residents of the village are exposed to both floods and droughts. One resident of the village, 75-year-old old Boonpeng, has spent his whole life in Pong Nam Ron. He grew up and went to school there, and eventually worked in the fields growing crops. After retiring at the age of 65, Boonpeng became the leader of an older people's association and has spearheaded CBDRM efforts within his village,⁸ supported by the Foundation for Older Persons' Development (FOPDEV).

06 FOPDEV was established in 1999 as a nonprofit, nongovernmental organization, and works with partners to improve the quality of life of disadvantaged older people. At the community level, FOPDEV works with older people's groups to improve income security and coordinates with


volunteers who provide basic health care and information. At the national level, FOPDEV works to raise awareness about the issues facing elderly people and advocates on the needs of an ageing society. Among its flagship initiatives is a programme to strengthen the participation of older people in community-based disaster risk reduction. Boonpeng's work in Pong Nam Ron village and the surrounding district is a part of this programme.

07 **ACTIVITIES AND ACHIEVEMENTS**

08 On September 24, 2011, a flash flood devastated Pong Nam Ron village. Two people were killed, 58 houses were destroyed, and a bridge collapsed. It was this event that motivated Boonpeng to become involved in disaster risk management. He explained, "In our community, we get hit by natural disasters every year—small floods, bush fires, etc. But in 2011, we had a really bad flooding. After that incident, we realized that we needed to do something. I started to think that we needed to warn people in advance. We never thought that a flood like that could happen. We hadn't had a flood like that in over 100 years."

09 Boonpeng collaborated with local leaders and municipal officials to develop work on disaster risk management, including awareness raising, encouraging community engagement is disaster risk management and practical risk reduction activities including the development of hazard and vulnerability maps and risk data. The maps and data are now annually updated and are published on public notice boards for all the community to see.

10 Pong Nam Ron village has decided to prioritize the building of small dams to lessen the strength of the river current and to reduce flood risk. These dams also reserve water during droughts. Trees have been planted to protect the riverbank, and children have been taught to understand the river and the warning signs of an imminent



We started FOPDEV as an outreach programme for the elderly. But through the years, we realised that including resilience in our programming help us contribute more to our communities. It also bring us closer to the youth and others in the community through our work in DRR and specifically, our involvement with AADMER.

— SAWANG KAEWKANTHA, FOPDEV EXECUTIVE DIRECTOR AND THAILAND COUNTRY FOCAL POINT

PHOTO BY JANICE IAN MANLUTAC

The flood warning system as shown by the prevention and disaster relief officer of the local government.

**PHOTO BY SARANYU
KAEWKANTHA/FOPDEV**



flood. “Now, 10 villages have disaster risk reduction plans and these activities have made the community feel safer,” said Boonpeng.

Elderly people often have extensive networks of family members, friends, former colleagues and employers, and government officials which they can mobilize to provide support for their community based DRR activities. They are also motivated to share the professional skills and experience they have developed throughout their lifetime; in Pong Nam Ron village retirees have skills in management, logistics, and livelihood development. As Boonpeng shared, “Everyone is human, and we feel bad when we see our neighbor suffering. It is important to unite and to have a loving and caring community. Older people have more time because we no longer work. We have experience, we read the newspapers, and we watch TV. I feel sorry for victims of disasters, that is why I am

doing this work. If we are happy with our lives, we have to help others to be happy.”

Boonpeng and his colleague, Mr. Tawin Moonfei, continue to provide briefings to the residents of Pong Nam Ron village on what to do in the event of the most common disasters (i.e. flash floods, landslides, and typhoons).

FOPDEV secured a community center for the use of elderly people living in Pong Nam Ron village and the surrounding area. It is a place where elderly people can come together to support each other contributing significantly to their overall well-being. The center is also a base for elderly people to engage in small-scale, income-generating activities, which generates a small income and contributes to their social protection, especially for those with no pensions. The community center also serves as a hub for disaster risk planning and is a command management center in times of disasters.

There is a solid and long-term relationship between the elderly people's association led by Boonpeng and the local government. It is evident that the mayor of Pong Nam Ron subdistrict local administrative authority strongly supports and has high regard for the association. In the canteen, adjacent to the municipal hall, pictures and billboards of the association's activities are prominently displayed. In the village, there are specialized houses designed for older people which are in areas that will give the occupier access to strategic support from the rest of the community in times of emergencies. With funding from the local government, the community has begun to practice how to evacuate bedridden older people, pregnant women, and children in event of a disaster. The local authorities plan to share this learning with all the other villages in the area.

**Now, 10 villages have DRR plans.
All of these activities have
made the community feel safer.**

— BOONPENG INKAEW

This is only the beginning of the CBDRM work in Pong Nam Ron. The first three-year DRR plan is now complete, and another three-year plan will expand on this work using learning from the first phase.

Boonpeng sees older people as integral to DRR planning, and he aims to engage more elderly people through his association. "We are trying to recruit more elderly people to join the older people's association in the subdistrict so we can do more," he said. "It is important that the older people are involved in DRR work because we are the ones that spend a lot of time in the village. Younger

people are busy with their lives, and they leave for work. So we are the ones who can warn the community."

Boonpeng has also been invited to speak at the Department of Disaster Prevention and Mitigation (DDPM) in Bangkok to share his experience of initiating CBDRM in Pong Nam Ron. "I think if we can use the knowledge of older people in DRR work in Thailand, we wouldn't have to worry about natural disasters," he concluded.

GOOD PRACTICE IN CBDRM

SIX STEPS FOR CBDRM

CBDRM aims to reduce risks, minimize the impacts of disasters, and facilitate rapid recovery post disaster. It involves the systematic application of policies and processes to identify, analyze, assess, treat, and monitor risks and vulnerability, and the capacities of people and institutions.

CBDRM is not straightforward to implement. Ensuring the full participation of women can be difficult in places where cultural norms limit or prevent women's participation in decision making and public activities.

Training and guidance materials for CBDRM are readily available for Asia,^{9,10} for individual ASEAN member states,^{11,12} and for gender-sensitive CBDRM.^{13,14}

CBDRM activities can be implemented through six key steps:

1. *Selection of the community.* Selection criteria could include the number of people in the community and the degree of their vulnerability to hazards, the levels of poverty, the degree to which the community is served by the government and/or NGOs, the readiness of members of the community to engage in CBDRM

activities, and other considerations such as budget availability.

2. *Rapport building and understanding the identified community.* This step is about building relationships with the community and gaining a deeper understanding of its social relationships and power structures. This step often means spending significant time with the community, participating in community activities, and listening to the issues and problems of women and men
3. *Participatory community risk assessment.* Men and women should have full and equal participation in identifying the needs of specific groups, including women, children, older people, people with disability, and people with HIV/AIDS, etc. As demonstrated by the situated practice of Pong Nam Ron village, having a vulnerable group prominent in the discussions and decision making contributes to the success of CBDRM activities. More specifically, the perspective of elderly people can be a key to understanding long-term trends.
4. *Participatory action planning.* Having identified the main risks, the community is supported to identify strategies and solutions to address them. This stage results in a community plan for risk reduction and disaster response, including specific measures for women, children and the most vulnerable members of the community. The knowledge, skills, and networks of older people can be a significant asset in developing community action plans.
5. *Community-led implementation.* It is important to have a nominated organization within the community that is mandated to coordinate and manage the planned DRR measures. This can be either an existing organization within the community (e.g. the older





In the FOPDEV, the elders have a core role to play in promoting social cohesion, transfer of wisdom and historical memory, and improving early warning systems in their communities. **PHOTO COURTESY OF FOPDEV**

Provision of sustainable and community-based livelihoods is one of the core programs of the FOPDEV for keeping the elderly active and engaged with the community. **PHOTO BY JANEVIT WISOJSONGKRAM/FOPDEV**



people's association in Pong Nam Ron village) or a specially created community organization. The implementation process will include various structural and nonstructural activities (e.g. community training, disaster response drills, community early warning systems, tree planting, crop diversification, rainwater harvesting, construction of dikes, etc.). The local authority (and/or NGO) supporting the CBDRM process should play a facilitating and supporting role by providing technical assistance and financial assistance if necessary.

6. *Participatory monitoring and evaluation.* This involves the local community, local authorities (and/or NGO), and other stakeholders assessing progress made and identifying necessary follow-up actions.

CONCLUSIONS

CBDRM has a significant body of practice behind it. In Thailand, the DDPM has adopted and applied CBDRM in hundreds of communities at risk. The department has also implemented the "Mr. Warning" programme, in which trained community members are designated to warn others in flash-flood and mudslide prone villages. Moreover, it has approximately one million civil defense volunteers whose function is to assist government officials in disaster situations.¹⁵ This leadership on CBDRM can serve as an inspiration for other ASEAN member states.

CBDRM is a necessary complement to other DRR efforts because it taps into the local knowledge and resources of community members and local organizations. The situated practice from Thailand illustrates the

importance of leadership in encouraging participation and active implementation of risk reduction measures. It also illustrates perfectly that those groups that are considered to be one of the most vulnerable, in this case, older people, also have knowledge and resources that can benefit the whole community.

RECOMMENDATIONS TO THE ASEAN

The Kuala Lumpur Declaration on Ageing: Empowering Older Persons in ASEAN (adopted by the 27th ASEAN Summit in November 2015 in Malaysia) and the ASEAN Declaration on Strengthening Social Protection (adopted by the 23rd ASEAN Summit in October 2013 in Brunei Darussalam), when combined with the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Plan 2.0 (Box 1), provide a policy framework for delivering effective disaster response for the elderly in the ASEAN. The following recommendations draw on this framework and this case study:

1. *Plan ahead for the aging population.* ASEAN can lead in strengthening the capacity of government agencies, corporate bodies, civil society organizations, and relevant stakeholders in working with and responding to the needs of elderly people to make them less vulnerable to the impacts of disasters and climate change.
2. *Increase budget allocations for responding to elderly peoples' needs.* The one-percent financing allocation for elderly people during humanitarian responses should be significantly increased.¹⁶ Budget allocations during response can target the specific health care needs of the elderly, such as provision of

Older people have more time because we no longer work. We have experience, we read the newspapers, and we watch TV. I feel sorry for victims of disasters, that is why I am doing this work.

— BOONPENG INKAEW

- wheelchairs in evacuation centers and repositioning medicines commonly needed by older people.
3. *Strengthen the participation of elderly people in CBDRM.* As demonstrated by the situated practice of Pong Nam Ron village, Thailand, supporting older peoples' engagement in CBDRM can reduce their vulnerability to disasters as well as that of other community members.
 4. *Improve social support system for the elderly.* Traditionally, older Asians have the benefit of multigenerational households who support them in their retirement. However, these traditional structures are changing. The challenge for public policy is to assess the viability of family support systems, to devise programmes that are supportive or complementary, and to take into account the chronic threat of disasters and other disruptions in the region.¹⁷ Establishing elderly community centers or hubs, like the one in Pong Nam Ron village, can meet multiple needs—it provides continuing social support to elderly people while being a hub for livelihood activities and local CBDRM planning and response.
 5. *Learn from the Disaster Risk and Age Index.*¹⁸ The Disaster Risk and Age Index 2015 is a pilot initiative that allows countries to measure and assess their



Boonpeng Inkaew is a recipient of ASEAN Champion award for his work on community resilience building. **PHOTO BY WIRAPHAT WILAISILPDELEERT/FOPDEV**

progress and gaps in supporting older populations in DRR. This pilot index is based on the INFORM 2015 Index, a global, open-source risk assessment for humanitarian crises and disasters, which was developed through a collaboration between the Inter-Agency Standing Committee Task Team for Preparedness and Resilience and the European Commission. The index and methodology are readily available and are being used by NGOs including HelpAge International, which is a partner of AADMER under the AADMER Partnership Group (APG).

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BOX 01

CBDRM AND THE AADMER WORK PROGRAMME

Priority Programme 3 includes the output "implementation of high-impact community resilient and climate adaptive programs across ASEAN" that is delivered by the following activities:

- 3.1.1. Establish a mechanism to develop innovative community-based disaster risk reduction and climate change adaptation programmes and projects
- 3.1.2. Establish investment portfolio for the public to fund the projects they want to scale up

Examples of CBDRM practice, such as the one described in this case study, contribute to the AADMER Work Programme. Identifying successful examples and scaling them up is therefore of direct relevance to achieving the AADMER Work Programme.

06

THE ROLE OF COMMUNITY CHAMPIONS AND COLLABORATIONS IN COMMUNITY RESILIENCE

MYANMAR

OVERVIEW

Building a resilient community is a difficult task, but if everyone in the community helps, then we are one step closer to a safer future.

— DAW TIN TIN AYE, COMMUNITY LEADER

In February 2017, the Strengthening Community Resilience through Peer-to-Peer Learning Project supported a unique learning event in Myanmar. Community leaders were nominated by their peers to develop and share their experience of championing resilience in their communities. The community leaders worked with their communities and NGO partners to develop stories of their experience. They then travelled across Myanmar to share their stories at the Yangon International Business Center with nearly 150 people, including resilience practitioners from INGOs, donors, government officials, local entrepreneurs, and academics.

Three of the inspiring stories shared at this event are presented here. They show that community leaders play a necessary role as innovators and brokers who support collaborative, bottom-up planning and experimentation that can help transform their communities.

KEY FEATURES



Community-
based



Knowledge
and innovation



Fostering
inclusiveness

INTRODUCTION

Myanmar is rapidly changing from a closed, command economy to a market driven one with support from increasing levels of foreign investment. Alongside its political and economic transformation, Myanmar is highly vulnerable to disasters and the impacts of climate change.

Globally, it is the second most affected country by extreme weather events according to the Global Climate Risk Index,¹ and 12th out of 191 countries on the Index of Risk Management.² It is exposed to cyclones, storm surges, floods, droughts, and earthquakes. Temperatures are increasing and rainfall patterns are becoming less predictable. When cyclone Nargis struck in May 2008, official statistics estimate that 84,500 people were killed and 53,800 people went missing. The Red Cross estimated that as many as 2.4 million people were affected.³

Although significant work has already been done to prepare communities for disasters with lessons learned from cyclone Nargis, much remains to be done. Research carried out by BRACED Myanmar Alliance has shown that the risk assessments that have been carried out in Myanmar to date tend to focus on the regional or state level, with limited formal bottom-up planning processes taking place, especially those that integrate risk information into village-level planning.^{4,5}

Collaborations between government departments, international organizations, and local civil society groups, through platforms such as the Disaster Risk Reduction Working Group,⁶ are helping Myanmar to establish a stronger foundation for bottom-up planning for community resilience that can meet the immediate needs of communities, while more formal and decentralized planning systems are being established.

The situated practices of community leadership, bottom-up planning, and collaboration between

communities and local government decision-makers described in this chapter have been supported by the BRACED Myanmar Alliance. They show how collaboration is now being fostered in spaces that historically have not promoted collaborative planning.

RESILIENCE TO FLOODING AND WATER SCARCITY: ZEYA THIRI, MAWLAMYINE

Zeya Thiri ward is situated on the banks of the Athtaran River in the northern part of Mawlamyine township, Mon state. Mawlamyine, the capital of Mon state and the fourth largest city in Myanmar, has a population of about 289,388.⁸ The township is the main trading hub in Southern Myanmar.

Zeya Thiri ward is flooded during the monsoon, especially during heavy rains or when high tides breach the banks of the Athtaran River. Since most of the communities in the ward live in bamboo-walled and nipa palm-leaf roofed houses, they are highly vulnerable to flooding and many families are forced to evacuate their homes for higher land during the rainy season.

Khine Myae Saytanar Social Development Association and its community members, with support from World Vision, conducted a community resilience assessment in the ward. The assessment identified the vulnerable groups living in the ward and the main hazards affecting them and helped the community and local authorities to plan activities to enhance community level resilience.

The assessment identified that household water scarcity and seasonal flooding were the risks most important to the community. Although the City Development Committee supplies water to the ward twice a day, the amount of water was insufficient for the villagers. The villagers reported that a single household in the village spends up to MMK 9,000 (around USD 7) per

**BOX
01**
**THE BRACED MYANMAR
ALLIANCE PROGRAM**

The Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED) Myanmar Alliance programme was launched in 2015 as a three-year programme with financial support from the UK Government's Department of International Development (DFID). The aim of the programme is to enable 350,000 vulnerable people, particularly women and children, to become more resilient to climate extremes and future disasters. The programme also supports more than 2,000 government officials in Myanmar to enhance their practice of community based resilience-building.

BRACED is being implemented by an alliance led by Plan Myanmar comprising five international agencies, namely, Action Aid, World Vision, BBC Media Action, Myanmar Environment Institute, and UN Habitat. The alliance works with local partners, including the Community Development Association, Myanmar Environment Institute, Village Disaster Management Committees, and community-based organizations.

The alliance works in 158 villages in Rakhine, Kayin, Mon, and Shan states, as well as in the Mandalay, Yangon, and Ayeryawaddy regions of Myanmar.⁷

month for clean drinking water during the six monsoon months of every year. Furthermore, water shortages were forecast to worsen in the coming years.

During the resilience assessment, community members prioritized the renovation and flood proofing of the village pond to help them deal with both monsoon flooding and dry season water scarcity. The Khine Myae Saytanar Social Development Association, the community, and the local government administration collaborated to construct concrete bridges and culverts to improve drainage and post-flood water flow. A pipeline was built to

connect the town to the Athtaran River, which serves as a source of drinking water for the community. An evacuation shelter was also built for vulnerable groups along the riverbanks of Athtaran River of Mawlamyine township.

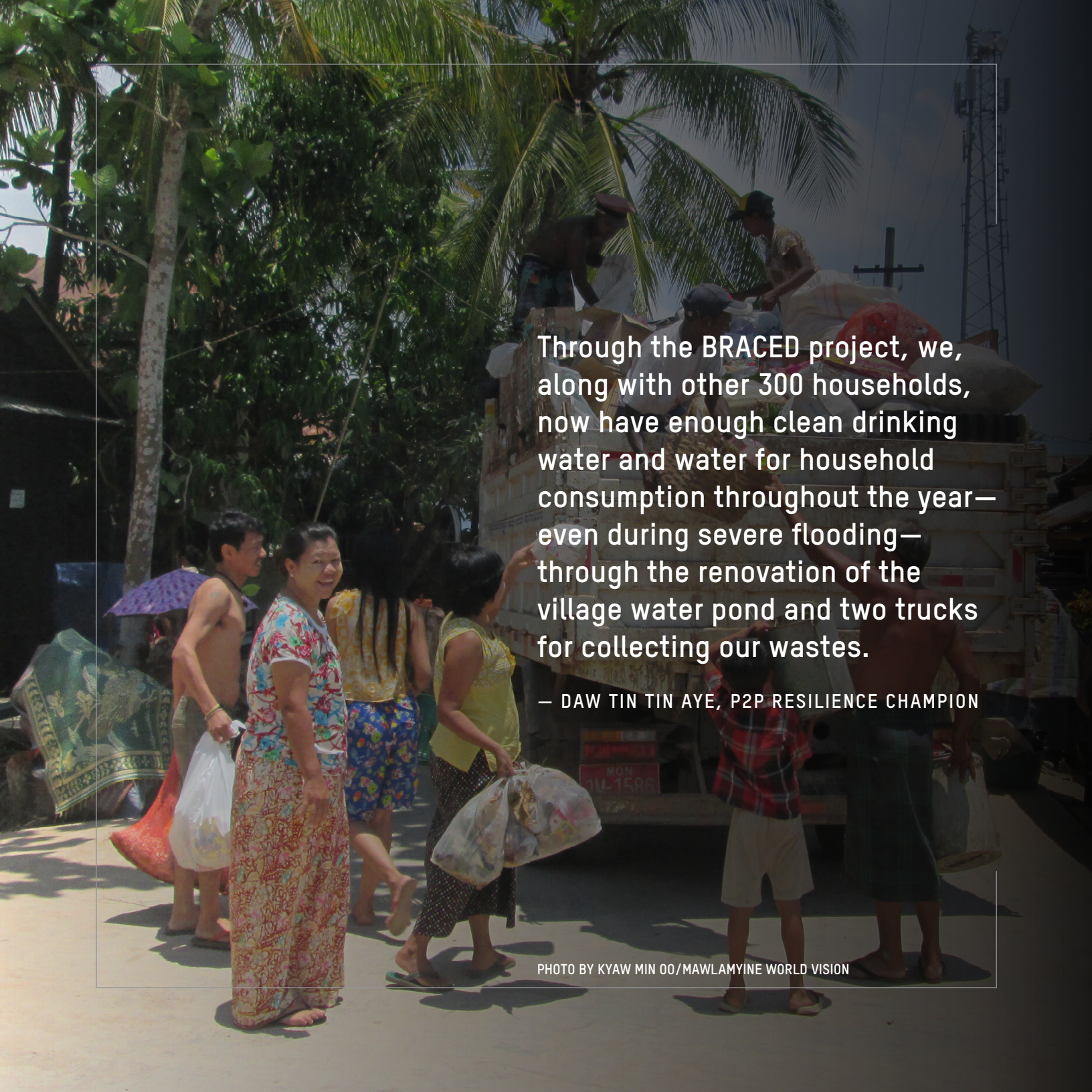
The Relief and Resettlement Department of the local government provided an excavator to complete major earthworks for the construction of the drainage systems and footpaths, whilst the community contributed its voluntary labor.

A Village Disaster Management Committee (VDMC) was formed to manage and oversee these community resilience building activities. The VDMC was given two hand speakers and information boards to help them disseminate awareness raising messages and early warnings to the community.

"Through the BRACED project, we, along with 300 households, now have enough clean drinking water and water for household consumption throughout the year—even during severe flooding—through the renovation of the village water pond," said Daw Tin Tin Aye of the Zeya Thiri village. "I believe the success of the BRACED project came from the participation and coordination of the Khine Myae Saytanar Social Development Association community members, the VDMC, the local government, and the BRACED Project," she added.

**ZERO BUDGET FARMING: THANBO VILLAGE
TRACT, MEIKHTILA TOWNSHIP**

Meikhtila township in Mandalay region is in the central dry zone of Myanmar and has a population of 309,663.⁹ The area is exposed to hailstorms, drought, strong winds, earthquakes, and tornados. Agriculture is the main livelihood, with sesame, pulses, maize grain, cotton, and groundnuts being the major crops grown. Small-scale rearing of goats, sheep, and cows are susceptible to disease and to water shortages in the dry season.



Through the BRACED project, we, along with other 300 households, now have enough clean drinking water and water for household consumption throughout the year—even during severe flooding—through the renovation of the village water pond and two trucks for collecting our wastes.

— DAW TIN TIN AYE, P2P RESILIENCE CHAMPION

PHOTO BY KYAW MIN OO/MAWLAMYINE WORLD VISION

Tae Hla Village has 52 households that are almost entirely reliant on the cultivation of crops. However, due to the unpredictability of rains during the monsoon season, the households have trouble in planning for their farming.

As part of a suite of interventions to build resilient villages under the BRACED programme, ActionAid selected 30 villages to pilot test new farming models and techniques. In Thanbo village, ActionAid tested the Zero Budget Farming approach with U Aung Myint on his farm. U Aung Myint, has a family of nine members who are all largely dependent on agriculture. Through the pilot project, U Aung Myint received technical support to enable him to make natural fertilizers using low-cost agricultural methods. Local officials from the agriculture department advised U Aung Myint about the new farming methods and on how to manage the challenges he faced with cultivation.

“ It took me three days to travel here. This is my first time to travel outside my village and to meet so many people. I am touched that they want to listen to my story.

— DAW HLA, DISASTER MANAGEMENT COMMITTEE MEMBER

While unstable weather conditions caused other farms in the surrounding areas to have lesser yields, U Aung Myint’s model plot sustained good yields under the same conditions. U Aung Myint has shared the farming techniques with other farmers who have been supported to visit his plot. BRACED hopes that the local authorities who have worked with community champions on their model plots, will be able to support other farmers who want to adopt the techniques; this will enable the rapid

scale-up of the new farming techniques in the surrounding villages.

“I hope the rest of the villagers become interested in these farming techniques. I would like to be able to get support (from the government or from NGOs) to conduct such kind of training to other farmers,” said Aung Myint of Tae Hla village

WASTE MANAGEMENT AND FLOOD PROTECTION IN SHWE MYAING THIRI

The community resilience assessment that was conducted in Shwe Myaing Thiri ward of Mawlamyine township identified weak municipal garbage collection as the major risk. Garbage collection did not reach several communities in the township, including Shwe Myaingthiri. Trash was often thrown directly into streams and drainage channels, blocking the flow of water contributing to the flooding of the township. The community also suffered from water-borne diseases, and rotting materials near the streams which affected the health and well-being of families and school children.

Following the resilience assessment, Plan International facilitated a workshop to support the development of ideas and plans that would manage these environmental hazards and contribute to community resilience. The workshop was attended by community-based organizations and government department representatives, including from the department of health.

Daw Tin Tin Aye is a prominent member of a local CBO in Shwe Myaing Thiri. She is motivated by the environmental challenges in her community and has been trained in the management of environment grants. Daw Tin Tin Aye worked with her community to develop a proposal to address the waste management and drainage clogging problems. Two activities were proposed by the community: the development of a waste management collection and



LEFT. Daw Tin Tin Aye facilitates clean handwashing with the kindergarten children from Mawlamyine. **TOP.** Attendees of P2P Learning Exchange in Myanmar signified their commitment to community resilience through handprinting, one of the sessions of the conference. **PHOTOS BY KYAW MIN OO/WORLD VISION (LEFT) AND JANICE IAN MANLUTAC (TOP)**

disposal system and the dredging of the local drainage channels.

With the support of BRACED, Daw Tin Tin Aye organized a consultation meeting with the chief of the municipal office, who had also attended the environmental workshop facilitated by Plan International. Following the meeting, the staff of the municipal office worked with Daw Tin Tin Aye to improve the community's proposal, and align it with government objectives.

As a result, Shwe Myaing Thiri ward received two trucks worth about USD 15,000. The CBO formed a committee to organize waste collection and to manage the funds which were used to maintain the trucks, buy fuel, and pay the drivers. Members of the community and the local authority contributed to the fund.

Due to the success of their proposal, the community became more confident and willing to address other issues. They submitted another proposal to the irrigation department for the construction of a retaining wall to protect a local school from the landslides that occur during annual flooding. The community and irrigation department contributed around USD 1,000, and USD 4,000 respectively to have the wall built.

KEY CHALLENGES AND LESSONS

Community-based resilience assessment is an effective tool that develops the collaborative planning capacities of both communities and local government agencies. The

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I hope the rest of the villagers become interested in these farming techniques. I would like to be able to get support (from the government or from NGOs) to conduct such kind of training to other farmers.

— AUNG MYINT, TAE HLA VILLAGE

assessment process also supports ongoing collaboration and the implementation of joint activities that meet the needs of communities.

Assessment tools need to be very accessible and time needs to be taken to ensure all participants understand the complex ideas used in them. Locally accessible formats that are translated into local languages are important.

Resilience must be presented as a tangible and achievable outcome of a project if stakeholders are to support resilience activities and feel ownership for them. Defining resilience as risk-informed development planning, has allowed resilience concepts to be accepted and developed in Myanmar.

The ongoing maintenance of community projects (e.g. buildings, agriculture technologies, drainage, and drinking water systems) is a persistent challenge. The socio-cultural and political realities that influence the way in which communities value the service or technology over the longer term, and if and how they are maintained by the authorities (or the private sector), need to be addressed as part of community resilience building.





Ma May Thet Htwe of Actionaid Myanmar facilitates resilience assessment with the community of Meikhtila. **PHOTO BY JEREMY STONE**

A woman from Kan Dae Village, Taung Up township fetches water from the community faucet.

PHOTO BY JEREMY STONE



CONCLUSIONS

The context of rapid political and economic change; high levels of exposure to hazards; and the relatively limited experience of authorities, civil society, and communities in building resilience in Myanmar bring distinctive opportunities and challenges. Although the context of Myanmar is unique, communities share the same experiences as communities in other ASEAN member states that are also highly vulnerable to disasters and climate change. Community resilience assessments (see case study 9), planning, and interventions (see case study 5) help communities and local authorities make resilience tangible, by identifying real risks and practical actions to address them. Whilst doing this, communities and local authorities in Myanmar are also developing new, collaborative planning processes and policies.

RECOMMENDATIONS TO THE ASEAN

In Myanmar, collaborative efforts are underway to find appropriate solutions to enhance community resilience. ASEAN can build on these experiences following these recommendations:

1. *Encourage member states to localize AADMER by putting in place legal frameworks that support the collaboration of CBOs and more established institutions. Strong and effective working relationships between communities, government agencies, INGOs, civil society groups, academia, media, and the private sector take time, but can produce locally relevant solutions that can be scaled-up.*
2. *Build on bottom-up, collaborative planning practices such as those used by BRACED Myanmar Alliance and*

the DDRM Working Group. This enables vulnerability and hazard assessments to inform longer-term decision making and invites equity based participation across sectors and stakeholders, ensuring the ownership and meaningful participation of women and men and communities in decision-making processes.

3. *Support peer to peer learning* by providing safe spaces and mechanisms for dialogue and the exchange of experiences between local actors and the wider community. As the evidence provided by community resilience champions are invaluable, affirmative action should be used to support their participation in knowledge exchange at subnational and regional levels. Learning initiatives designed by ASEAN that aim to develop its indigenous and local organizations, need to provide appropriate support to ensure community champions can fully contribute. ASEAN can lead on this through the AADMER Work Programme 2.0, specifically under the Priority Programme No. 8 LEAD: Knowledge management and learning exchanges.

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07

**LOCAL PARTICIPATORY PLANNING
FOR COMMUNITY RESILIENCE**

MYANMAR

OVERVIEW

We have organized women's groups to prevent and be prepared for upcoming disasters and to save the lives of women, elderly, and children during emergencies. We feel we are recognized now.

— DAW HLA, NAUNG TONE VILLAGE, SOUTHERN SHAN STATE

Risk assessment is a priority for reducing disaster risk within ASEAN member states. Risk and vulnerability assessment (RVA) methodologies, such as participatory capacity and vulnerability assessment (PCVA), can directly complement national and regional investments by supporting communities to identify and analyze community level risks. This provides a basis for communities and local authorities to develop joint plans and actions to reduce risks and vulnerabilities. As the situated practice of Shan State in Myanmar demonstrates, the PVCA process can also enhance the agency of women and men and support them to develop more resilient livelihoods.

KEY FEATURES



Community-
based



Fostering
inclusiveness



Increased access
to contingency
resources
and support

INTRODUCTION

THE REGIONAL CONTEXT

The ASEAN Agreement on Disaster Management and Emergency Response (AADMER) has four pillars—risk assessment and awareness, prevention and mitigation, preparedness and response, and recovery.¹

Risk assessment and awareness is widely understood to be integral to disaster risk reduction. However, in most ASEAN member states, disaster risk assessment is fragmented across various agencies, resulting in assessments that are limited by their focus on one sector or specific geography or hazard. As communities interact with many sectors and systems, natural and political, and are exposed to a mix of hazards, this narrow, sectoral focus does not allow the dynamic reality of communities to be well understood.² This inadequate understanding of vulnerability dynamics can hamper the development of forward-looking change processes that are required to address disaster risk and climate change in the longer term.³

In recent years, the practice of vulnerability and risk assessment has developed from the description and quantification of the impacts of climate-related hazards, to understanding the complex linkages between climatic and other environmental, socio-economic, institutional and political stressors, as well as attention to agency and decision-making.⁴

Several countries in Southeast Asia (i.e. Cambodia, Indonesia, Lao People's Democratic Republic, the Philippines, Thailand, and Viet Nam) have used community-based and participatory approaches to assess hazards and vulnerabilities, with the assistance of civil society organizations.⁵ Community-based, participatory approaches to risk

BOX 01

DEFINITION OF TERMS

Hazards, also referred to as risks, are natural events e.g. earthquakes and volcanic eruptions or human-made events including climate related hazards such as extreme weather, drought, flood, and sea level rise and non-climate related hazards including civil conflict, rapid devaluations of currency, chemical or nuclear accidents, or infrastructure failure such as widespread power outages.

Vulnerability, simply put, is the degree to which something is susceptible to hazards. Women and men, children, and elderly people are susceptible to hazards in different ways and to different degrees i.e. vulnerability is socially differentiated. Natural systems and livelihoods are also susceptible to hazards in different ways.

and vulnerability assessment that enhance agency and local level decision-making, and which enable a context specific description of risks and vulnerabilities to be developed, can be complementary to national and subnational risk, hazard, vulnerability, and capacity mapping and assessment.

One well developed methodology for community-based risk and vulnerability assessment is the participatory capacity and vulnerability assessment (PCVA). PCVA is an integral part of disaster preparedness and contributes to the creation of community-based disaster risk management (CBDRM) programmes.

ABOUT THIS CASE STUDY

This case study draws on the work of civil society organization, DEAR Myanmar and the Strengthening Emergency Preparedness (SEPS) programme which is

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being managed by a consortium comprising Christian Aid, Member Dan Church Aid, and the Regional Integrated Multi-Hazard Early Warning System for Africa and Asia. The SEPS programme is working with communities in marginalized areas. As part of the programme, DEAR Myanmar has been supporting village disaster committees in Shan state to carry out participatory capacity and vulnerability assessments with community members and government institutions.

“ It is important that more women come forward and get involved. Thus, as a leader, I always encourage the women from my village to get involved in village development activities.

— DAW HLA

Core to the PVCA methodology is the recognition that women and men have always taken steps to improve their lives, however difficult their situation may be and they have capacities to cope with disasters. The methodology is rooted in the belief that enabling communities and local level decision-makers to genuinely participate in knowledge creation, learning and decision-making leads to increased empowerment and accountability. PVCA methodology has drawn on a wide range of participatory learning techniques and tools that are designed to channel participants' ideas and views into a structured process of analysis, learning, and action planning, with the overall aim of reducing a community's disaster risk. These techniques and tools also ensure that people with less or no power in a community, including women and


girls, people with disabilities, people from marginalised groups, etc., can participate fully in the assessments, discussions and decision-making of the PVCA. In this way, PVCA also facilitates community collaboration, strengthens the empowerment of marginalised groups and supports the whole community to be more disaster and climate change resilient. The tangible outcome of a PVCA, is a set of agreed actions which if implemented, can reduce the vulnerability of a community to a mix of risks that have been prioritized by them.

SITUATED PRACTICE: COMMUNITY PREPAREDNESS IN SOUTHERN SHAN STATE, MYANMAR

BACKGROUND

Shan State in Myanmar is among the least developed and complex areas of the country. The state includes remote, mountainous areas that are prone to landslides, torrential rains, floods, forest fires, and erratic rainfall. Most of the smallholder farmers in the area practice slash and burn agriculture, and grow paddy, corn, vegetables, and fruits. They also raise livestock, including buffalo, cows, chicken, and ducks. Transportation is difficult, limiting access to markets and services.

DEAR Myanmar aims to reduce the impacts of risks on smallholder farming including those caused by the excessive use of agrochemicals, and disasters. It is experienced in supporting Myanmar's rural farmers to use environmentally sound farming systems and techniques and in providing humanitarian services to vulnerable people living in hazard-prone rural areas.

A woman wearing a white bucket hat, a black and white long-sleeved shirt, and a colorful patterned sarong is walking through a lush green field. She is smiling and holding a large bundle of harvested green beans. The field is filled with rows of similar green plants, and there are trees in the background.

Food is very important especially during disaster. This is why we continue to look for ways on how to grow our crops with better yield.

— A COMMUNITY FARMER IN LABUTTA TOWNSHIP

PHOTO COURTESY OF ACTIONAID MYANMAR



TOP. Community from Hpar Pu Village maintains this man-made canal to prevent flooding in the area.

RIGHT. A village disaster management committee member surveys the community in Zeyar Thiri ward, Mawlamyine. **PHOTOS BY JEREMY STONE (TOP) AND COURTESY OF PLAN INTERNATIONAL (RIGHT)**



ACTIVITIES AND ACHIEVEMENTS

As the local partner to the Strengthening Emergency Preparedness (SEPS) programme, DEAR Myanmar has been setting-up and supporting village disaster management committees (VDMC), to carry out PVCAs. The PVCAs have enabled villages to assess the local level impacts of the torrential rains that are experienced in the region, especially how the rain increases the risk of landslides which can destroy farmland.

Daw Hla, a Kayan woman from Naung Tone village, Phekon township in Southern Shan State, is a member of the new VDMC and her village religious committee, and the leader of the village women development committee. Daw Hla explained, “According to the result of the assessments, our community has mostly encountered landslides caused by torrential rains which destroy farmlands. And our water supply in the community is insufficient due to

deforestation, which is caused by farmers’ slash and burn activities. Crops are also destroyed due to flooding, leading to food insecurity. Changes in the weather patterns are making this even more complex, with people encountering health problems as well.”

The PVCA process has supported Daw Hla to bring women into community planning processes. Daw Hla shared, “I am a widow of five children, but I really want to develop our region. It is important that more women come forward and get involved. Thus, as a leader, I always encourage the women from my village to get involved in these development activities.”

As a result of the PVCA process, the VDMC has developed early warning systems and disaster risk reduction plans. As Daw Hla explained, “We have discussed where we can get water, how to grow trees, and why deforestation happens. [We] find solutions to improve women’s lives, and to save the lives of women, elderly

people, and children during emergency situations.” Daw Hla added, “We have organized women’s groups to prevent disasters from happening and to be prepared for them.”

Through the PVCA process, DEAR Myanmar has supported the VDMCs to coordinate with local authorities. The Department of Hydro-meteorology made weather and climate data accessible to the VDMCs, and the Department of Agriculture provided technical advice to villagers on adapting crops and agricultural practices to weather forecasts. The General Administrative Department of the township and the village authorities also collaborated with the VDMCs.

The process has also fostered a greater sense of agency among members of the community. Daw Hla said, “I am a traditional birth attendant residing in a hard-to-reach area. Before, I have never imagined myself able to converse with a township authority as a member of village disaster management committee, who explains about the hazards of the area. I think this is a great opportunity to create change for our Kayan people and to establish a comprehensive development plan in our area. We feel that we are recognized now.”

CHALLENGES AND LESSONS

The remoteness of the area has meant that the communities living there have had very little formal knowledge of risk management and climate change. DEAR Myanmar’s long experience of working with remote communities was critical to the project’s success. The organization was also able to engage with local authorities and ensure their participation in the PVCA process. This not only made essential knowledge available for the PVCA, but has also enabled disaster awareness and preparedness initiatives to be integrated into the broader development activities of the region.

GOOD PRACTICE WITH FOCUS ON RISK AND VULNERABILITY AWARENESS

PCVA can play a key role in disaster risk reduction. It helps women and men and communities to more fully understand disaster risks and collaborate with each other and local authorities to put in place local level disaster risk reduction plans and actions.

The bottom-up approach of PVCAs can directly complement the planning processes of subnational and national institutions. It is also the type of community-level activity that can help ensure the effectiveness of AADMER priority programme 1 Aware: Risk assessment and improve risk awareness of ASEAN Community.⁶

Good practice in implementing PCVA can be summarized in these five key steps:⁷

1. *Preparation.* This includes drawing up the terms of reference for the PVCA process, identifying the aims and objectives, deciding which communities to work with, selecting the facilitation team, allocating the necessary resources, and planning the logistics.
2. *Collecting secondary data.* The implementing organization needs to gather existing data on the community’s physical location, demographic composition, social structure, economic profile, history of disasters, and changes to weather patterns. It also needs to understand the institutional frameworks and policies relevant to the community including any local or sub-national development plans that may affect the community and area.

Information on the organizations and institutions working on disaster risk reduction and/or climate change adaptation in the location is also relevant. As shown in the situated practice of Shan State, the Department of Hydro-meteorology, Department of

BOX 02

VULNERABILITY AND RISK ASSESSMENT (VRA) TOOL

Oxfam's Vulnerability and Risk Assessment (VRA)⁸ tool develops a holistic, landscape-wide understanding of vulnerability. It brings together actors across various levels of governance, including from communities, to jointly identify and analyse the root causes of vulnerabilities for distinct social groups and supports the design of climate change adaptation and risk reduction strategies and initiatives that are gender responsive.

The VRA methodology has been implemented in twelve countries including the Philippines and by other aid and research organizations, such as the International Rescue Committee (IRC), the University of Cape Town and the University of Botswana.

Agriculture, General Administrative Department of the township, and village authorities were involved in providing information and technical assistance to support community resilience planning and action.

3. *Beginning work with the community.* The main purpose of this step is to generate a shared understanding of the community's demographic composition, social and political structures, livelihoods, and resources. This stage promotes community ownership of the process, and provides a solid foundation for the subsequent stages of the PCVA.
4. *Analyzing hazards, impacts of climate change, vulnerability, and capacity.* This part of the PCVA process enables community members to analyze their vulnerability to risks and their capacity to cope with and adapt to them. The community identifies and describes the hazards that affect them, including how these have changed over time. They also reflect

on why community members are negatively affected by these hazards and identify vulnerable groups.

5. *Prioritizing risks.* This step includes the assessment of which hazards present the highest risk to the community and vulnerable groups within it. In this step, the community prioritizes the different risks they face; this prioritization then forms the basis of the risk reduction plans and actions. As described in the situated practice example in Naung Tone village, the community prioritized the risk to their crops from landslides, lack of water in the dry season, and changing weather patterns. Lastly, the community find solutions that will enable women and men and vulnerable groups to reduce their vulnerability and the impacts of hazards on them and their livelihoods.

CONCLUSIONS

The AADMER Work Programme includes outputs on risk assessment and awareness that are focused on improving the technical and institutional capacity of, and coordination between, national and regional authorities within ASEAN countries (Box 1). Delivering these outputs would mean that better information on risk and vulnerability (including early warning) would be available to decision-makers, planners and the public. However, to be effective, disaster risk reduction plans and activities and early warning systems must be embedded in, owned and understandable by, and relevant to the communities they serve.

A disaster risk reduction and early warning system is only as good as its weakest link; thus, the accurate warnings generated and communicated by scientific and government institutions must meet the communities' needs, patterns of vulnerability, and capacity to respond.⁹



Securing ponds as a communal source of water by keeping it clean is one approach for water security in this village. **PHOTO COURTESY OF PLAN INTERNATIONAL**

**BOX
03**
**RISK ASSESSMENT AND RISK
AWARENESS IN THE AADMER
WORK PROGRAMME**

The impact of PCVA, as shown by the situated practice from Myanmar, results in community risk assessment and can support greater awareness of risks among community members. This relates to Priority Programme 1 “Aware: Risk assessment and improve risk awareness of ASEAN Community.” The program has three components:

- Strengthened capacity of the ASEAN in risk and vulnerability assessment,
- Improved availability of data and information on regional risk and vulnerability, and
- Enhanced mechanism on risk data utilization and information sharing.

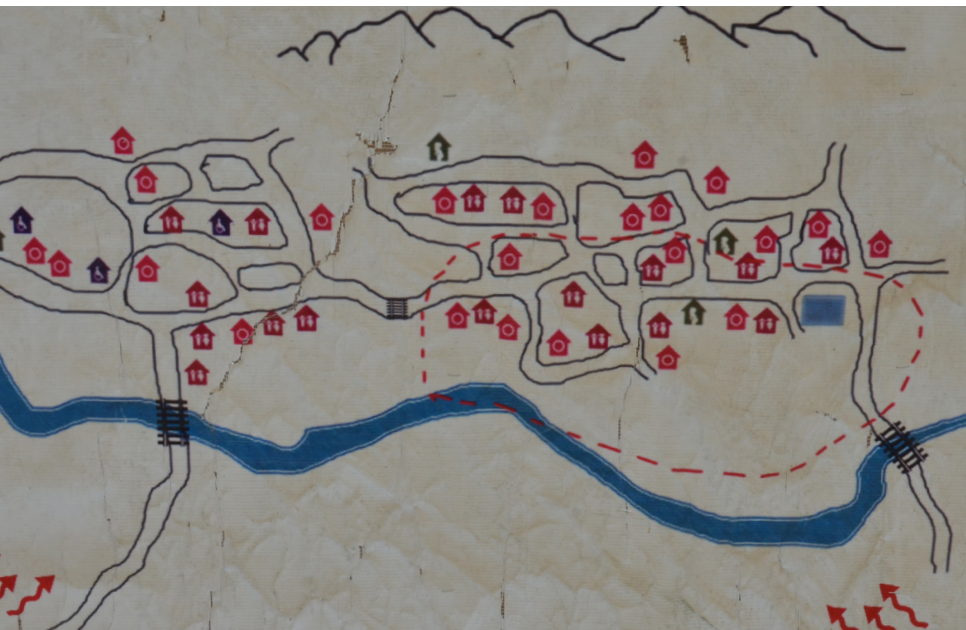
This goes beyond localizing the language in which for example, the early warning is given; it should also extend to helping women and men apply the information in accordance with their context, capacities and needs.

The situated practice from Shan State shows the importance of participatory processes in developing risk reduction measures. By participating fully in the assessment and planning process, women and men gained greater understanding of the hazards they face and what they can do to reduce their vulnerability. They are now better able to work with relevant authorities to plan to reduce risks, and use early warning systems and weather forecasts to protect their lives, livelihoods and wellbeing.

RECOMMENDATIONS TO THE ASEAN

ASEAN member states are already using risk-related information in a variety of ways. Below are some recommendations for ASEAN to improve the uptake and use of risk and vulnerability risk assessment in the region:

1. *Improve the flow of already available information:* One of the major achievements under the first phase of the AADMER Work Programme covering the period 2010–2015 is the Disaster Monitoring and Response System (DMRS). DMRS allows upward and downward information flow between national disaster management offices and the ASEAN Humanitarian Assistance Centre. However, national to subnational level information flow is still problematic.
2. *Establish peer-to-peer learning on RVA.* Horizontal peer-to-peer learning on RVA methodologies, tools and approaches, including PVCA, which brings together local authority decision makers and planners, civil society organizations and community groups would enable collaboration across sectors and different levels of government with a focus on practical action to improve community based disaster risk reduction planning and action.
3. *Improve RVA systems in ASEAN* by finalizing and communicating the ASEAN RVA guidelines¹⁰ and putting in place a database of RVA tools and methodologies. A database of RVA methodologies and tools that have been tried and tested in the region, including the PVCA, would complement other planning tools, support the mainstreaming of risk assessment in development planning and help address inconsistencies in practices and policies across the region.



LEFT. Hazard mapping analysis of the community in Rakkine State. **TOP.** A member of the village disaster management committee maps the village resources in Rakkine State. **PHOTOS COURTESY OF PLAN INTERNATIONAL**

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08

**LIVELIHOODS DIVERSIFICATION
FOR COMMUNITY RESILIENCE**

VIET NAM

OVERVIEW

Now I earn on my own and I am happy that I contribute to the family's income. I have a say on how we budget.

— TRUONG THI HANH, TEA LEAF PICKER

The indigenous communities of Yen Cu commune live in Bac Kan province, one of the poorest provinces in Viet Nam. Their livelihoods depend on agriculture and forestry, and the communities are already experiencing challenges due to changing weather patterns. In partnership with the Center of Help for Indigenous Value Promotion and Sustainable Environment (CHIASE) and the local government, the communities of Yen-Cu have been able to diversify their livelihoods and adopt new climate-resilient agricultural practices. These initiatives have helped them to increase their incomes, become more resilient to disasters, and reduce the impacts of climate change on their livelihoods.

KEY FEATURES



Community-based



Increased access to contingency resources and support



Fostering inclusiveness

INTRODUCTION

REGIONAL CONTEXT

Across ASEAN countries, agriculture is the main source of food and livelihood for millions of poor families.¹ In 2010, agriculture accounted for about one-third of the gross domestic product of Myanmar (39.9%), Lao PDR (30%), and Cambodia (28%) and it provides employment to more than 60 percent of the labor force in Cambodia, close to half (49.5%) in Viet Nam, and more than one-third in Thailand (41.3%), Indonesia (38.3%), and the Philippines (33.6%) in 2010.²

Agriculture is also highly vulnerable to the impacts of disasters and climate change. Climate hazards such as erratic rainfall patterns, and extreme weather events (e.g. intense and frequent typhoons and severe droughts) affect agricultural production, food security and economic activity.

Different approaches to smallholder agricultural have different approaches to risk. For example, investment in a single high-value crop can increase the incomes of farmers but it can also increase their exposure to risks, as a single weather event can cause the loss of the entire crop. The diversification of livelihoods helps to increase the resilience of smallholders by spreading risk: if one crop or livelihood activity fails due to a shock, others may remain undamaged.^{3,4}

ABOUT THIS CASE STUDY

Livelihood diversification involves adapting existing practices and adopting new ones that are appropriate and sustainable to the specific context. It includes both on farm activities (e.g. diversifying crops and livestock) and off-farm activities (e.g. selling waged labor or for self-employment in a small enterprise), which are undertaken

to generate income and increase food and nutrition security.

The situated practice from Bắc Kạn province, Viet Nam demonstrates how smallholder farmers living in remote areas can diversify their agricultural livelihoods and increase their income by adopting agricultural techniques that are more resilient to climate shocks and stresses. It shows that improving the resilience of smallholder farmers requires an integrated approach that supports women and men smallholders to adopt new agricultural practices, and better access to markets and support services.

SITUATED PRACTICE: RURAL LIVELIHOODS DIVERSIFICATION, BẮC KẠN PROVINCE, VIET NAM

INTRODUCTION

Agriculture remains a key sector of the Vietnamese economy, employing about 70 percent of the country's workforce, who are mostly low-income earners. However, the agriculture sector is also the most vulnerable sector to climate change and disasters, including floods, droughts, and landslides. The country suffers six to seven typhoons per year.⁵

Ethnic minorities remain the poorest group in Viet Nam. The World Bank reported that the group accounts for only 15 percent of the national population yet represent 47 percent of the poor in 2010.⁶ The Vietnamese government has launched Programme 135 (P135) in 1998 to address the poverty of ethnic minorities and people living in the mountainous areas of Viet Nam. However, these isolated communities still experience challenges.

Yen Cu commune lies in a remote, mountainous area in Cho Moi district, Bắc Kạn province in Northeast Viet Nam. Many of the villages in this commune can only be reached

by dirt roads. With a population of around 2,800 people (648 households), the commune has 200 poor households and 189 near-poor households. Ethnic Dao people live in the mountainous villages and ethnic Tay people live in the lowlands.

Agricultural yields are poor due to heavily eroded and degraded agricultural lands, overexploitation of forest resources, and limited access to agricultural extension services. In recent years, changes in weather patterns has affected farms. Occasional floods, snow, and hail are the main hazards and most recently, cold snaps and water shortages have become more frequent.

The Center of Help for Indigenous Value Promotion and Sustainable Environment (CHIASE) is a Vietnamese NGO founded and registered under the Viet Nam Science and Technology Association in 2014. “Chiase” in Vietnamese means “sharing,” “helping each other,” and “friendship.” It embodies values that are reflected in traditional folksongs such as, “Share every bowl of rice and every bit of clothes in hard times, share weal and woe with others, share responsibility with others.”⁷

CHIASE’s programmes focus on sustainable improvements in livelihood security and on empowering the voice of natural resource-dependent people, especially ethnic minorities who lack access to resources and influence over the decisions that affect their lives.

ACTIVITIES

Using participatory processes, CHIASE has worked with the communities of Yen Cu commune to identify how their crops are vulnerable to changes in weather patterns and other risks and to develop plans for managing risks based on the current strengths and capacities of each village. For example, in the two villages where tea bushes are grown, plans were developed to improve tea production

TABLE 1. Implementation of adapted agricultural practices in villages, Bắc Kạn province

AGRICULTURAL MODEL	VILLAGES			
	BẢN TÁM	PHIÊNG LẦU	THÁI LẠO	BẢN CHÁO
Local hog raising				
Local poultry farming	✓	✓	✓	✓
Local Shan Tuyet tea production and processing			✓	
Forest farm planting			✓	
Rice with new techniques (SRI)	✓	✓		
Garden improvement	✓			
Bee keeping	✓	✓		

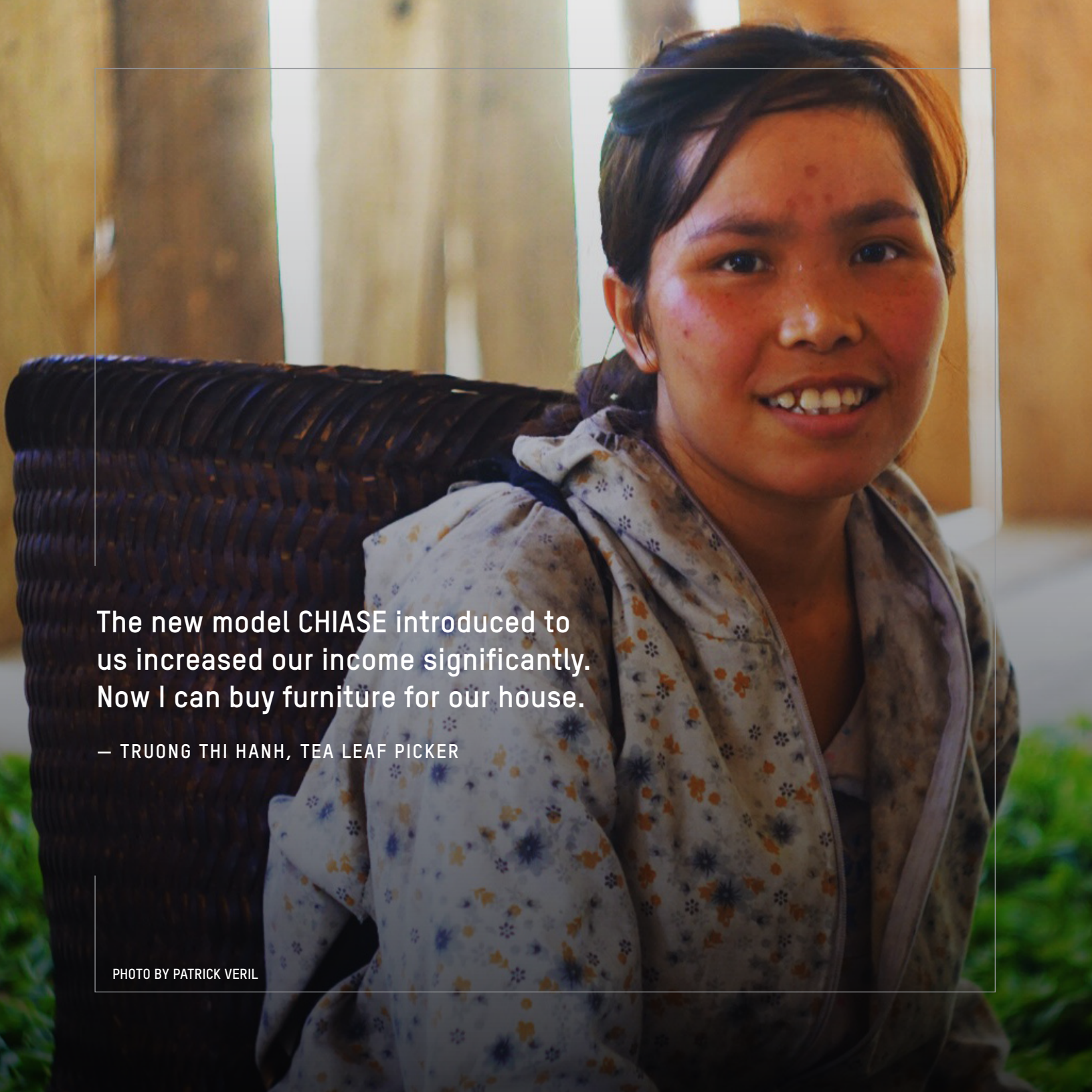
Note: SRI = system of rice intensification

and in another two villages where rice is grown, rice production was prioritized. Poultry farming was prioritized in all four villages (Table 1).

TEA

The tea plantation area of the commune is about 40 hectares (ha), located mostly in the villages of Ban Chao and Thai Lao. The tea bushes are of the famous Shan Tuyet tea variety, which is native to Viet Nam, however the trees were neglected and between 30–40 years old.

Before the project, people barely cultivated the Shan Tuyet tea due to the long distance the villagers had to walk to collect the materials for its cultivation. Also, the height of the tea bushes made harvesting difficult, and



The new model CHIASE introduced to us increased our income significantly. Now I can buy furniture for our house.

— TRUONG THI HANH, TEA LEAF PICKER

PHOTO BY PATRICK VERIL



TOP. Freshly picked tea leaves from Yen Cu commune. **RIGHT.** Pham Minh Trieu, Vice Chairman, Dien Minh Commune People Committee, Dien Ban district, Quang Nam Province (one of the core learners) happily poses after strolling around the tea plantation in Yen Cu. **PHOTOS BY VU NGOC LINH**



the bushes more vulnerable to being blown over by strong winds. As the tea was processed at home, the quality of the tea was poor, and the communities obtained a low price for it in the market, meaning villagers got next to no revenue from their tea bushes.

CHAISE has worked with the villages to improve the production, processing, and marketing of the tea, turning this neglected crop into a valuable source of income for the villages.

CHAISE first formed tea groups in the villages in which a total of 23 households participated. CHIASE taught villagers how to prune the tea bushes to stimulate fresh growth, to make the leaves easier to pick, and to make the bushes less vulnerable to wind damage. CHIASE also introduced simple tea dryers to improve the quality and consistency of the processing and the packaging of the tea was also improved.

RICE

A total of 35 households from Yen Cu commune and some representatives of the neighboring Yen Han commune participated in testing the system of rice intensification (SRI) by cultivating an area of 7 hectares.

The SRI is a climate-smart, agro-ecological methodology for increasing the productivity of rice through changing the management of plants, soil, water, and nutrients. It is based on four principles: early, quick, and healthy plant establishment; reduced plant density; improved soil conditions through enrichment with organic matter; and reduced and controlled water application. Based on these principles, farmers can adapt their practices to suit their own specific conditions.

One of the farmers to adopt the SRI was Mrs. Tran Thi Que, who describes herself as an ethnic Tay. Mrs.

Que described the SRI technique as transplanting rice seedlings singly, rather than in handfuls. She observed that although the field looks less dense, the productivity is much higher. She also observed that it requires less labor because there are fewer weeds and pests. Mrs. Tran now uses composted manure instead of chemical fertilizer.

According to Mr. Truong Quoc Long of CHIASE, the most significant thing about this technique is the improved management of water. Fields are only watered when needed, rather than kept permanently flooded as in the traditional practice. This saves water and helps to reduce pests by limiting their water habitat. After harvesting, the farmers are encouraged to collect the residue straw for composting, instead of burning them as traditionally practiced.

CHICKENS

There is a good market for chickens in Viet Nam, with a stable price of around VND 100,000 (USD 4.4) per kilogram. However, the chickens reared by the villagers have been prone to diseases, and a high proportion of them have died before they could be sold, especially when the weather has been cold.

All four villages within the project area (i.e. Ban Tam, Phieng Lau, Thai Lao, and Ban Chao) identified the improvement of poultry farming as a priority. CHIASE formed a poultry-raising group in each village, with the participation of 65 households per village. As women tend to raise the chickens and own the income from their sale, poultry farming has been an important source of income for the women of the village.

CHIASE has helped the villagers shift from a system where the chickens roamed and foraged freely, to one where they were enclosed and the flock size controlled. This protects the chickens from cold weather and limits the spread of disease. The villagers have built covered areas for newly hatched birds and a laying house for hens.

“ Since the project started, more and more households have joined—from about 10–20 to about 100. Before, people were very doubtful of the techniques, but we are now seeing the results of the intervention.

— MA DINH HUNG, CHAIRMAN OF THE COMMITTEE

A large area in the poultry farm has been fenced to enable the chickens to roam around. Locally available materials were used for the construction to reduce costs.

Villagers reported that the most significant innovation that helped them to improve their poultry farming, was the adoption of the “bio-mattress.” The bio-mattress is a mixture of rice husk and microorganisms that neutralizes chicken droppings, which helps to keep the shelter clean and germ free, preventing diseases. When no longer effective, the bio-mattresses are composted, and used as an organic fertilizer on the farmers’ fields. CHIASE has also encouraged farmers to rear local chicken breeds that are adapted to local conditions.

One of the villagers, Ms. Luong Thi Binh, has a neat and clean fenced area, with a sturdy laying house and slatted area for hatchlings. She explained that her flock has grown from 10 to 80 hens. She also reported almost no incidence of disease. She recently sold half of her flock and eggs for USD 180. She reported that organically raised chickens fetch VND 20,000–30,000 (USD 0.9–1.3) per kilogram, more than those that are industrially produced.

IMPACTS

The improved tea production system, has enabled the tea groups to increase their income from VND 100,000–120,000 (USD 4.4–5.3) per kilogram to VND 200,000 (USD

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8.8) per kilogram. This is largely due to the improved quality of the tea following improvement to its processing. The revenue is distributed evenly among the members of the tea-producing group and the group is now looking for a bigger market for their tea.

Ms. Truong Thi Hanh, one of the tea pickers, said her family's income had grown 4–5 fold by becoming a member of the tea-producing group. "I keep the money, but all the decisions in the family are made jointly by me and my husband," said Ms. Hanh. "We will continue producing tea. This has become the main income of our family now."

Ms. Binh is just as happy with the returns from the chicken. "I'm planning to purchase some new furniture for our house, and invest more into the chicken."

I keep the money, but all the decisions in the family are made jointly by me and my husband.

— MS. TRUONG THI HANH, TEA PICKER

The villagers own assessment of the SRI concluded that the yields from SRI are higher than the yields from their traditional practices. SRI also helped villagers to reduce chemical inputs and labor requirements. Income from rice production has increased by VND 1.2 million (USD 55) per 1,000 square meters cultivated, with each household increasing their income by around VND 2.4 million (USD 105). Villagers also reported that they had improved their collaboration and water management. An unintended benefit of this increased income is that villagers no longer have to illegally fell trees from the forest to raise an income.

The Communal People's Committee (local government equivalent in Viet Nam) has been consulted throughout the project and has indicated that it is willing to provide support to scale-up the successful initiatives. When interviewed during the peer-to-peer learning visit, Mr. Ma Dinh Hung, Chairman of the Committee, was very well informed about the project and how it linked to the commune's overall development programme. There are already plans to expand the livelihood diversification initiatives to other villages, with technical, policy, and funding support from the Communal People's Committee.

Other villagers have seen the success of the new practices and have begun to join the project. "Since the project started, more and more households have joined—from about 10–20 to about 100. Before, people were very doubtful of the techniques, but we are now seeing the results of the intervention," explained Mr. Ma Dinh Hung, Chairman of the Committee.

CHALLENGES AND LESSONS

CHIASE took time to build trust and ensure that the villagers fully understood the new techniques. More time was required to embed the SRI and the use of tea drying machines than other practices. Developing a shared understanding of the villagers' vulnerabilities and capacities and interests was a key step toward the development and successful adoption of the new techniques. Working closely with local government has enabled the practices to be accepted by other communities and the programme to access resources for scale-up. As diversity is central to this approach, a diverse range of agricultural produce and practices are required—from chicken, tea, and rice cultivation to vegetable gardens, pig rearing, and bee keeping. CHIASE also



TOP. A day in the tea plantation. Bàn Hữu Thanh and his wife from Thai village wakes up early morning to pick fresh tea leaves from the plantation. **BOTTOM.** Tea picking has become an additional income for women. Bàn Thị Thân, in the picture, is a tea picker from Yen Cu commune. **PHOTOS BY TRUONG QUOC LONG/CHIASE**



TOP. The commune welcomes the core learners and CHIASE officers to a sumptuous lunch. **RIGHT.** Janice Ian Manlutac, P2P team leader, thanks Ban Huu Phuong, Yen Cu community leader, for warmly welcoming the team and core learners to his community and home. **PHOTOS BY PATRICK VERIL**



included elements of traditional practice, such as using indigenous breeds of chicken, as they were introducing new techniques.

CONCLUSIONS

When combined with climate-resilient agriculture practices, livelihood diversification, including developing livelihood assets and skills, is an effective strategy for managing the impacts of climate change on rural smallholder farmers and their livelihoods.⁸ As climate-resilient agriculture is a location-specific and knowledge-intensive approach, smallholder farmers need support, training, and resources to help them adopt new and appropriate crops and agricultural techniques.⁹ For example, Yen Cu had received little technical agricultural support before the CHIASE programme. Dedicated support

from local governments and civil society groups is a critical step to foster more diverse and resilient agricultural livelihoods in many poor communities (Box 1).

As the Intergovernmental Panel on Climate Change notes, “A diverse mix of potential adaptation strategies, such as crop breeding, changing crop varieties, adjusting planting time, water management, diversification of crops, and a host of indigenous practices will all be applicable within local contexts” in Asia.¹⁰

RECOMMENDATIONS TO THE ASEAN

Communities need dedicated support to enable them to successfully adapt existing practices and to integrate new ways of doing things. Civil society actors, working with local government can test and incubate climate-

adaptive agriculture approaches and support livelihood diversification but these approaches need to be scaled-up to support large numbers of smallholder farmers to adapt to changing conditions. These specific actions are recommended to support the scale-up of effective approaches:

1. *Support peer-to-peer learning on livelihood diversification, and climate-resilient agricultural practices.* Learning initiatives that bring together smallholder farmers, civil society groups and community leaders representing smallholder farmers, and local government officials from across the region can help generate a rich body of knowledge of practices and approaches that can support the diversification of smallholder livelihoods. The initiatives could include farmers' exchange programmes, regional training workshops, and the documentation and sharing of practices.
2. *Support the scaling up of proven inclusive and resilient agricultural practices.* ASEAN member states could champion tried and tested agricultural practices that are shown to increase community resilience and be adaptable to local conditions. An example is the SRI, which is gaining ground in several ASEAN countries.
3. *Enhance cooperation.* ASEAN could use existing regional platforms (e.g. the ASEAN Climate Change Initiative and the ASEAN Multi-sectoral Framework on Climate Change: Agriculture, Fisheries, and Forestry towards Food Security) to support regional cooperation on climate-resilient agricultural practices and livelihood diversification for smallholder farmers.

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BOX 01

AGRICULTURAL DIVERSIFICATION AND THE AADMER WORK PROGRAMME

Resilient agriculture contributes to the ASEAN Agreement on Disaster Management and Emergency Response Work Programme 2016–2020 Priority Programme 3: Advance: A Disaster-resilient and Climate Adaptive ASEAN Community. Specifically, Component 3 (Increasing replicable programs and models of building community resilience) includes two outputs to which the community resilience-building activities described above contribute:

- 3.1. Implementation of high-impact community resilient and climate-adaptive programs across the ASEAN
- 3.2. Incentivize the development of innovative community-based initiatives on disaster risk reduction and climate change adaptation

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Truong Thi Hanh, a tea leaf picker, shares with Pham Dung Tuy, country focal point for P2P Project in Viet Nam, her life as a tea farmer and what she learned about the new model. **PHOTO BY PATRICK VERIL**

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09

**LOCAL ENERGY PLANNING
FOR COMMUNITY RESILIENCE**

VIET NAM

OVERVIEW

For people to adopt new technology or new ways of doing things, you need to be crystal clear on the concrete benefits and how they compare to their current situation.

— MAI VON HOAI, NAM CUONG CHAIRMAN
OF COMMUNAL PEOPLE'S COMMITTEE

Having access to energy increases poor people's resilience. However, conventional energy production is a major source of greenhouse gas emissions. Local energy planning (LEP) involves communities working with local authorities to plan and install systems that produce renewable energy. The benefits include cheaper energy, a cleaner environment, empowered communities with enhanced knowledge and agency and reduced GHG emissions. The situated practice of Green Innovation and Development (GreenID) in Viet Nam shows the many benefits that LEP brings to communities and its potential to support national and local energy plans and policies that seek to reduce GHG emissions and foster sustainable, resilient development.

KEY FEATURES



Community-
based



Knowledge
and innovation



Demonstrates
good governance

INTRODUCTION

REGIONAL CONTEXT

It is estimated that the population of ASEAN's member states will increase from 615 million to approximately 715 million people by 2025, and the region's economy is projected to have a five percent annual increase. Population and economic growth, combined with rapid urbanization, will cause an increase in energy consumption.¹ This has prompted ASEAN, during the 33rd ASEAN Ministers Energy Meeting in 2015,² to set a target of securing 23 percent of its primary energy from renewable sources by 2025. This ambition has been reinforced by ASEAN Plan for Action for Energy Cooperation 2016–2025.³

Having access to energy strengthens people's resilience in the face of climate change.⁴ At the same time, energy from fossil fuels is one of the major sources of greenhouse gas (GHG) emissions globally. Reducing the consumption of fossil fuels is therefore necessary to keep climate change within safe limits. The development of renewable energy industries in countries such as Denmark, Germany, and Thailand has brought economic benefits, as they progress from concentrated power plants to distributed, decentralized, and diversified power production with new, renewable technologies.

Local energy planning (LEP) is a way of transitioning from a fossil fuel-dependent infrastructure to one that uses a variety of locally appropriate renewable sources. Although the idea of energy independence and self-sufficiency are core to LEP, the combination of local, "off grid" energy generation with national energy planning is one of the established lessons from Viet Nam's drive for universal access to electricity.^{5,6}

ABOUT THIS CASE STUDY

The situated practice from Thai Binh province, Viet Nam demonstrates how LEP enables women and men to benefit from reduced energy costs; increased and diversified livelihood opportunities; a cleaner local environment; and increased knowledge, skills, and agency. It also shows how LEP can contribute to national and local plans and policies for sustainable development by contributing to the reduction of GHG emissions, while enhancing economic development within the ASEAN context.

SITUATED PRACTICE: LOCAL ENERGY PLANNING IN THAI BINH PROVINCE⁷

INTRODUCTION

Viet Nam's high economic growth rate over the last two decades has led to an increasing demand for electricity and between 1976 and 2009, the number of people with access to electricity grew from 1.2 million in 1976 (around 2.5% of households) to about 82 million in 2009 (96% of households).⁸

This has been achieved largely by relying on oil, gas, and coal as sources of primary energy, with biomass becoming less important. The main potential for large hydropower has been exploited, and domestic coal and gas reserves are limited.⁹ By 2020, Viet Nam is expected to become a net importer of energy.¹⁰

Plans for expanding non-hydro renewable energies (e.g. wind and solar power) are modest. However, Viet Nam has great potential for renewable energy, and there can be significant gains (i.e. reduced GHG emissions and increased community resilience) in transitioning to renewables. One of the ways of doing this is through LEP.

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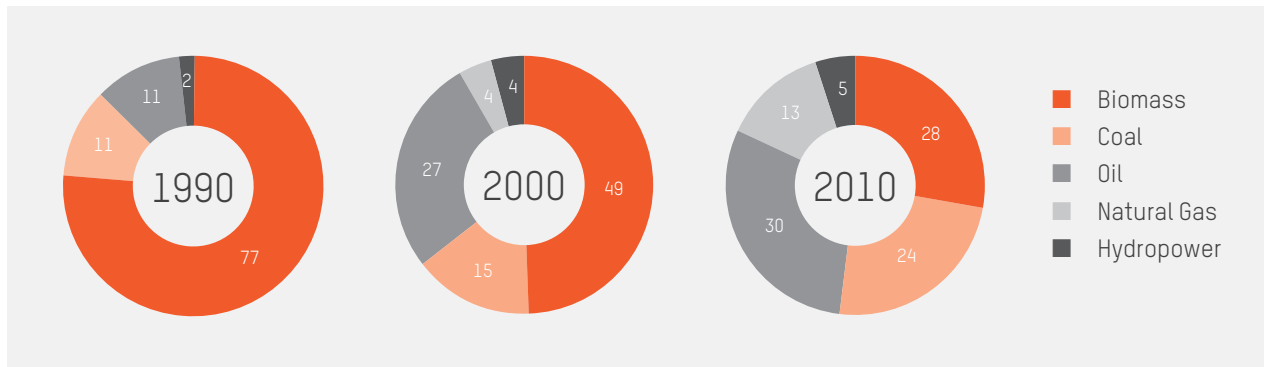


FIGURE 1. Composition of Total Primary Energy Supply in Viet Nam¹³

LEP is an integrated and bottom-up approach, which has been introduced and piloted in Viet Nam by Green Innovation and Development (GreenID) since 2012.¹¹ GreenID is a Vietnamese NGO established in 2011 under the Viet Nam Union of Science and Technology Associations. It supports sustainable energy development, improved water resource management, and inclusive decision-making processes. GreenID is committed to the promotion of green, low-carbon, and environment-friendly development, and to the protection of natural resources.¹²

IMPLEMENTING LEP

GreenID initiated LEP in Nam Cường commune, Tiền Hải district, Thai Binh province, Viet Nam in 2012. Thai Binh province is a coastal eastern province in the Red River Delta region of Northern Viet Nam. The province has never been merged or subdivided, and the people share a distinct culture. Nam Cường commune is located on land reclaimed from the sea. It contends with harsh natural conditions, including torrential rains, storm surges, salinization, and landslides.

Nam Cường commune has experienced frequent power interruptions which has been particularly difficult

during the typhoon season, when communities have become isolated due to lack of access to power and communications. This motivated Nam Cường commune to partner with GreenID and the Communal People's Committee to explore LEP.

The LEP approach is designed to promote local participation throughout the planning and implementation of decentralized renewable energy production.¹⁴ GreenID uses a 10-step process, in which local people and authorities work together to develop and implement a common plan that addresses issues related to energy, environment, health, and livelihoods, with support from technical experts. The approach aims to use locally available resources, and the main beneficiaries are the communities that use LEP.

In Nam Cường commune, Green ID first established the Nam Cường local energy team (LET). The seven members of the LET were volunteers with interest in sustainability and some local influence. The team has been responsible for guiding the whole LEP process, supported throughout by GreenID.

The LET collected information on the energy needs and opportunities for renewable energy within the commune. This data was used to support the community



We had a result-led work plan, with clear responsibilities and command system, and we had, most importantly, the participation of the civilians. The benefit of the people is the first priority.

— HOANG VAN SANG, CHAIRMAN OF NAM CUONG COMMUNE PEOPLE'S COUNCIL, TIEN HAI DISTRICT, THAI BINH PROVINCE

PHOTO BY VU NGOC LINH

TABLE 1. Sustainable Energy Models in Nam Cường

NAME OF MODEL	NUMBER OF BENEFICIARIES IN NAM CƯỜNG COMMUNE
Household biogas	10 households
Solar water heater	12 households and 1 school
Solar hurricane lamp	25 households
Microbial fertilizer	50 households
Reverse osmosis water supply system	3,500 people
Community biogas	25 households including the Dike Management Board
LED lights	Primary schools and almost 90% of the households

to discuss and agree its short and long term goals. The agreed long-term goal was to reduce threats to the health of women and children; and the short-term objectives included:

- Improvement of fresh water quality and availability using local energy solutions;
- Improvement of the environment, especially air and waste; and,
- Reduction in the energy costs from 12 percent to 8 percent of household income in 2016 and prevention of electricity shortages.¹⁵

The community was then empowered to work with local authorities, including the People’s Committee, to develop the commune-level plan. The sustainable energy systems agreed in the plan were then implemented by local women and men, with experts providing technical

assistance (Table 1).¹⁶ GreenID acted as a facilitator throughout, organizing workshops with potential sponsors and decision-makers at the provincial level, and connecting communities with additional sources of funding.

Nam Cường commune has now installed sustainable energy solutions, including biogas digesters, solar water heaters, improved cooking stoves, and LED lights, in over 300 households and several public institutions. Households that have invested in demonstration models, were able to receive 20%–50% co-funding from the project. For example, households installing biogas digesters invested VND 4.5–6.0 million (USD 225–300) and received VND 3 million (USD 150) from the project. Several households that were not supported by the project were sufficiently enthused to use their own resources to purchase and install sustainable energy solutions.¹⁷

GreenID encouraged community members to transition to LED lights and the owners of power supply shops were encouraged to sell LED lights for cost saving and environmental dividends. Training was also provided to a team of local skilled electricians to enable them to install LED lights, including road lights, at lower costs. As the community was purchasing at bulk, GreenID was able to negotiate lower prices from private suppliers.

Mr. Hoang Van Sang, the Chairman of Communal People’s Committee remarked, “These projects in Nam Cường have been successful because of the cooperation between the local authority and GreenID. We had a result-led work plan, with clear responsibilities and a command system, and we had, most importantly, the participation of the civilians. The benefit of the people is the first priority.”

IMPACTS

People in Nam Cường commune has benefited from LEP in the following ways:



LEFT. Chairman Hoang shows his commune's vulnerability map while Pham Minh Trieu and Tran Van Loi (two of the core learners) listen. This map was drawn during one of their local energy planning workshops. **TOP.** Nam Cuong's vulnerability map. **PHOTOS BY VUC NGOC LINH**

- *Reduced fuel costs for households.* According to a GreenID survey conducted in Thai Binh in 2014,¹⁸ more than 70 percent of the surveyed households said that the local energy plan had helped them to reduce their energy consumption and costs. For example, the 50 households that had installed biogas digesters saved an average of VND 112,000 (over USD 5) per month per household on LPG for cooking.
- *Creating jobs and sustainable energy production.* The LEP has created new jobs for local women and men, who have received training. For example, biogas digester installation has become a new source of enterprise and employment.
- *A cleaner environment.* By promoting the increased use of improved cooking stoves, solar water heaters, biogas digesters, and LED lights, the LEP project has reduced local pollution and supported a model of

power production that contributes to the reduction of GHG emissions.

- *Health of the people improved.* Improved cook stoves using rice husk has reduced smoke, leading to less indoor air pollution, eye irritations, and respiratory tract infections.
- *Improved awareness and knowledge of residents about energy and environment.* The participation of community members, local authorities, and other community stakeholders in the LEP, has enabled them to understand the importance of energy saving, energy efficiency, and renewable energy.
- *Enhanced women's empowerment.* Many women were members of the LED and women in the commune have participated in all the project activities, sharing their ideas and gaining new information and knowledge.
- *Reduced energy cost for authorities and the community.* The LEP has identified community-level

BOX 02

THE EASY MODEL

The EASY Model was founded by the EASY PROJECT, which implemented LEP in small/medium urban areas in the Adriatic Region of the Mediterranean.¹⁹

The EASY Model has four tightly interwoven and complementary stages, which are developed via a participatory process by involving the local community from the very beginning.



STAGE 1 Assessment

The participatory assessment stage analyzes the current overall energy system. This stage also assesses climatic and environmental conditions, the legislative system, and the potential local energy system from a technological point of view.

STAGE 2 Planning

During the planning stage, the Local Action Plan for Sustainable Energy is developed. The plan systematically organizes all the strategies, objectives, and priority actions that the local administration will undertake in order to develop the local energy system. It also sets indicators such that the implementation of the plan can be monitored and the results can be evaluated.

STAGE 3 Implementation

The implementation stage develops single projects to implement the action plan, and constructs a range of scenarios for energy, environment, financial, etc.

STAGE 4 Evaluation and Reporting

The final evaluation is based on the indicators developed in Stage 2. It is designed to assist local administrators in considering corrective actions, reviewing objectives, restarting a new energy planning cycle, and maintaining transparent communication with the community.

STAGES 1, 2, 3, 4 Participatory Process

The model requires that the main actors in the area participate in each of the four stages. For the entire LEP process, the model provides tools, theories, and practical suggestions that guide the local administration in the community participatory process.

initiatives, such as developing a reverse osmosis water purifier and supply system using solar photovoltaics, which has been installed in Nam Cường commune; this system has given 3,500 people in three villages access to clean and safe drinking. The community biogas plant has used waste from a large pig farm and provides free gas to 25 households in Hoang Mon village. Solar water heaters and biogas digesters were installed in the commune's preschools in Tien Hai district and the preschools have reduced their coal consumption for cooking, and saved around VND 450,000 (more than USD 20) per month.

- *Local and national policy supported.* LEP can support the implementation of national and local government policies, including Viet Nam's New Rural Areas Development Programme, Green Growth Action Plans, and Socioeconomic Development plans for communes.

GOOD PRACTICE

LEP originated in Denmark, and has been applied in Thailand, Mozambique, and Viet Nam. The steps that were followed in Thai Binh form a framework for good practice. These steps include the following:

- *Step 1:* An LET is established, and the team is the main actor in LEP. The team members are community volunteers who have both interest and local influence.
- *Step 2:* The LET is trained on a range of tools and techniques including data collection; planning methods and tools; processes for local participation; and the technical issues related to different renewable energy solutions.

- *Step 3:* The LET develops a questionnaire based on the local conditions.
- *Step 4:* The LET collects data on energy challenges, energy potential, and the socioeconomic situation of the community.
- *Step 5:* Technical experts and the LET process and analyze the data, including data on the current energy needs, CO2 emissions, and sustainable energy potential.
- *Step 6:* The LET and technical experts organize community workshops to share the results of their assessment with the local people and to identify community concerns, challenges, and goals.
- *Step 7:* The LET and community representatives set goals for producing and using energy in the context of the community's wider development needs, including livelihood development, water supply, public health, and environmental protection.
- *Step 8:* Technical experts develop energy scenarios based on the sustainable energy potential of the community, and share the results with the LET and local people. Based on local preferences, experts develop the appropriate renewable energy solutions that can bring the best economic, environmental, and emission-reduction benefits for the locality.
- *Step 9:* Based on the results of the experts' assessments and with their assistance, the LET formulate a commune-level energy plan, including detailed actions. They consult with the community and with the local authorities to reach a consensus on the final plan.
- *Step 10:* The plan is implemented. LET cooperates with local authorities to raise the awareness of the community about sustainable energy use, environmental protection, and waste management actions proposed in the plan.²⁰



TOP LEFT AND RIGHT. Workers clean near the faucet after tending the pigsty in this government-owned facility. **BOTTOM LEFT.** A biomass facility in Hoang Mon village, Nam Cuong commune, Tien Hai district, Thai Binh province. **PHOTOS BY VU NGOC LINH**


CONCLUSIONS

This situated practice shows that LEP enhances community resilience by enabling women and men at the local level to identify shared objectives, and work with others, including local authorities, the private sector and civil society, to develop and implement renewable energy systems that meet household and community needs. Communities benefit from reduced energy costs, increased livelihoods opportunities, a cleaner local environment, increased awareness of climate change and sustainable energy, and enhanced agency to improve their own local community. Shifting to clean cooking fuels is known to lower the health risks associated with inhaling noxious emissions from traditional cook stoves.²¹

LEP also directly contributes to the fulfillment of Sustainable Development Goals 3 - good health and well-being, and 7 - access to affordable, reliable, sustainable, and modern energy for all.²² When scaled up, the LEP's alternative planning model can contribute to SDG 13 - urgent action to combat climate change and its impacts.

RECOMMENDATIONS TO THE ASEAN

LEP and renewable energy is not expressly referred to in the ASEAN Agreement on Disaster Management and Emergency Response Work Programme 2.0, although it is addressed by the ASEAN Centre for Energy (ACE). A study by the ACE, in collaboration with the International Renewable Energy Agency, published in October 2016²³ stated that the region has insufficient indigenous fossil resources to meet its growing energy demand. This means that the share of imported fuel will increase in the coming years. Apart from energy security implications, the rise of nonrenewable energy consumption has other grim

 These projects in Nam Cường have been successful because of the cooperation between the local authority and GreenID.

— HOANG VAN SANG, CHAIRMAN OF COMMUNAL PEOPLE'S COMMITTEE

implications, including the increase of GHG emissions and local air pollution.

LEP can play an important role in enabling the region to transition from using fossil fuel energy to renewable energy. It also has multiple co-benefits for participating communities, including directly enhancing their ability to access energy during disasters and extreme weather events. The recommendations set out below are intended to support the scale-up of LEP in ASEAN:

1. *Peer-to-peer learning on LEP.* This is a relatively new field, and ASEAN and its member states can rapidly develop knowledge and experience by establishing a platform for peer-to-peer learning that bring together initiatives like GreenID in Viet Nam with experiences from Thailand and others in the region and beyond. This initiative could be linked to the ACE Action Area 4.
2. *Impact evaluation of LEP and renewable energy initiatives.* There are pilot programmes being implemented across ASEAN countries that test and innovate renewable energy systems. ASEAN, through Priority Programme 8 (LEAD), could support research to assess how these initiatives are contributing to resilience and document lessons learned.
3. *Create mechanisms to incentivize investment in LEP.* LEP schemes need start-up capital, an enabling policy environment, and institutional support. The



TOP. Peer-to-Peer core learners attentively listen to the Chairman of the People's Committee during the briefing of the LEP Project and the use of clean energy. **RIGHT.** Mr. Mai Van Hoa, Chairman of Communal People's Committee, Nam Cuong commune, Tien Hai district, Thai Binh province shows the state-owned water filtration system. Residents can purchase potable water at a lower rate compared to privately owned water suppliers. **PHOTO BY VU NGOC LINH**



Asian Infrastructure Investment Bank²⁴ will become a major new funder of infrastructure in developing Asia, and has ring-fenced dedicated funds for energy access. Its energy lending could promote LEP and the transition to an inclusive and sustainable model of energy production, based on renewable energy.

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THE ROLE OF SMES IN COMMUNITY RESILIENCE

VIET NAM

OVERVIEW

In introducing new climate resilient crops or models to farmers, always put in risk mitigation to minimize adverse impacts to their livelihoods.

— NGO XUAN KIEN, NAM ANH COMPANY OWNER

Asia is “the region of SMEs”, with small and medium enterprises accounting for over 97 percent of all businesses in most of the ASEAN member states. People in the region rely on SMEs to sell their produce, to gain waged labor, and to buy the goods and services they need. Yet, many SMEs are vulnerable to the impacts of climate change and disasters; unpredictable weather disrupts agricultural production and the supply of labor as women and men cope with the impacts of small and large scale disasters. The systematic assessment of the risks faced by an SME can be part of its business continuity planning, and a way to lessen the impacts of unpredictable weather and disasters on its business. Risk informed continuity planning is being supported in Viet Nam by the Center for Social Entrepreneurship Development (SPARK).¹

KEY FEATURES



Knowledge
and innovation



Risk management
and vulnerability
reduction



Fostering
inclusiveness

INTRODUCTION

THE REGIONAL CONTEXT

Small and medium-sized enterprises are the backbone of the ASEAN economies.² They account for between 88.8% and 99.9% of enterprises and their share of total employment is between 51.7% and 97.2%.³ SMEs also contribute significantly to the well-being of many of ASEAN's poorest and most vulnerable people by providing markets for their goods and services, employment opportunities and the supply of all that is required for their daily needs. Small businesses, particularly in agriculture, can drive the building of inclusive economies by providing opportunities for women to participate in the economy.⁴

However, many SMEs are highly vulnerable to the impacts of disasters and climate change. For example, more than 30,000 SMEs were directly affected after the Yogyakarta earthquake in Indonesia in 2006 causing about 650,000 workers and their 2.5 million dependents to be affected by temporary or permanent loss of earnings⁵ It is estimated that more than 20,000 SMEs have gone bankrupt because of this disaster.⁶ The flooding in Thailand in 2011 affected 117,000 SMEs, and disrupted the operations and trading of goods and services.⁷

As the ASEAN Agreement on Disaster Management and Emergency Response (AADMER) Work Programme states, "In ASEAN, small and medium enterprises are particularly at risk, and a single big disaster event or a series of small disaster events may wipe out all or large parts of business capital. The effect to both communities as consumers and employees can be significant."⁸

Even so, the ASEAN Strategic Action Plan for SME development 2016-2025 does not directly address the impacts of disasters and climate change on SMEs and according to the research of the Asia-Pacific Research and Training Network on Trade, only a few SMEs are adequately

prepared for the impacts of disasters and climate change. Their report cited, "SMEs have been identified as the top sector of underinsurance, and they usually do not conduct risk assessments or implement business continuity plans. This lack of preparation consequently increases the difficulty of recovery from disasters and the subsequent supply chain disruptions."⁹

ABOUT THIS CASE STUDY

Business continuity planning (BCP) is about identifying the threats and risks facing an enterprise, and developing a strategy to address them, so that personnel and assets are protected and able to function in the event of a disaster. The situated practice of the Center for Social Entrepreneurship Development (SPARK) and its Strengthen Resilience Options by Narrowing the Gaps (STRONG) programme from Viet Nam, shows how business continuity planning can help make agricultural micro-enterprises more resilient.

SITUATED PRACTICE: THE STRONG PROGRAM, VIET NAM

BACKGROUND

Viet Nam's long coastline, diverse topography, and its location within the "Ring of Fire" all contribute to it being one of the most hazard-prone countries in the Asia-Pacific region. It experiences typhoons, floods, volcanic eruptions, earthquakes, droughts, seawater intrusion, landslides, and forest fires. An estimated 70 percent of Viet Nam's population live in coastal areas and low-lying deltas, and are exposed to flooding risk.¹⁰ Viet Nam has been ranked the world's fifth-most affected country by extreme weather events between 1995 and 2014.¹¹

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SMEs have been identified as the top sector of underinsurance, and they usually do not conduct risk assessments or implement business continuity plans. This lack of preparation consequently increases the difficulty of recovery from disasters and the subsequent supply chain disruptions.

— ASIA-PACIFIC RESEARCH AND TRAINING NETWORK ON TRADE

Although Viet Nam's agriculture, forestry, and fishery sectors are declining due to the rapid growth of the industry and service sectors, they still contribute 21 percent to Viet Nam's GDP¹² and employ over 43.6 percent of its labor force.¹³ Rice production is critical to Viet Nam providing food security, rural employment, and foreign exchange; it employs two-thirds of the rural labor force, which positions Viet Nam as the world's second-largest rice exporter.¹⁴

In 2012, there were 333,835 active SMEs in Viet Nam employing 5.1 million workers (46.8% of the national workforce) and accounting for 97.7 percent of the total enterprises that paid corporate taxes for that year.¹⁵

Most of the entrepreneurs running SMEs in Viet Nam have been responding reactively, rather than proactively, to disasters, unpredictable weather, and extreme climate events. They also have little support to incorporate proactive measures into their business plans and operations. This is a problem for agricultural SMEs, where the quantity and quality of crops and their prices are very sensitive to unpredictable and extreme weather.

Entrepreneur farmers can find their supply chains and business operations interrupted by unusual weather, which can increase their costs and cause them to lose markets.


The Center for Social Entrepreneurship Development (SPARK) is a nonprofit based organization that supports the sustainable growth of enterprises which use innovative and inclusive business solutions to address Viet Nam's social concerns. SPARK's activities include connecting SMEs with impact investors and providing them with quality training and learning opportunities.

Since 2016, SPARK has worked with Oxfam to promote climate-resilient practices in agriculture-based SMEs through the STRONG programme. The programme has shown that a systematic approach to the analysis of risk across the supply chain, including upstream risks to suppliers and downstream risks to markets, makes it possible to proactively plan interventions to address unpredictable and extreme weather.

WORKING WITH DIFFERENT AGRICULTURE-BASED SMES

The STRONG programme has worked with four different types of agriculture-based enterprises to co-develop plans and specific activities that will make the enterprises more resilience to unpredictable weather:

1. *Nam Anh Mushroom Production Ltd. (Nam Anh)* is a mushroom-growing enterprise in Thai Binh province which is developing mushroom varieties with greater tolerance to extreme weather conditions with 50 farmers in Thai Binh.
2. The *Center for Consultancy, Applying, and Promotion of Agricultural and Environment Science (KCT)* is a potato-farming enterprise in Bac Kan province. KTC

A man with dark hair, wearing a blue polo shirt with white and orange horizontal stripes, is speaking and looking to his left. He is in a market or warehouse setting with a corrugated metal roof and other people in the background. The lighting is natural, coming from an opening in the structure.

Innovation, business continuity
planning, and hard work
are important to make your
business climate-resilient.

— NGO XUAN KIEN, NAM ANH COMPANY OWNER

PHOTO BY VU NGOC LINH



TOP. Mr. Kein tours the core learners in one of the areas where they grow the mushroom. **RIGHT.** Dam Thanh Tung (Youth Environment Group) and Truong Quoc Long (CHIASSE) examine the mushroom as Mr. Kien explains how these are grown to be weather-resilient. **PHOTOS BY VU NGOC LINH**



is developing a new production model for growing crops under extreme weather conditions for 150 growers from the indigenous communities living in the mountainous region of Northern Viet Nam.

3. *Tay Bac Organic Agriculture Products Company (VSAPAT)* supports the small-scale breeding of Lai Sind cows in Hoa Binh province. The enterprise is adapting the current model used by livestock farmers to the colder weather conditions of Hoa Binh province. The new model will be used by 50 farmers.
4. The *Sustainable Agricultural Rural Development (SARD) Company* is supporting orange cultivation in Ha Tinh province. The enterprise is introducing orange cultivation techniques that can make the production of 50 farmers more resilient to drought and irregular humidity.

The STRONG programme has worked with each SME to review and identify weather related risks for each of the core business processes (i.e. general operations, procurement, production, and finance).

The review has helped the business owners to be more aware of the potential impacts of weather-related risks on their businesses and to take a proactive, problem-solving planning approach to address them. For example, the review of procurement processes includes assessing the impacts of disruptive weather events on the quality, volume, and delivery time of suppliers in the past, present, and future. Procurement plans have then been developed, which have enabled SME operators to coordinate with key suppliers to ensure the quality, quantity, and pricing of produce; and the timely supply of inputs for production in times of likely disruption.

IMPACTS

All four enterprises have developed business continuity assessments, climate-resilient business plans and strategies to improve their capacity to plan for and manage weather related risks.

Working with Nam Anh Mushroom Production Ltd, the STRONG programme has trained 75 farmers to maintain mushroom production under extreme cold weather conditions. This has increased farmer income by VND 4 million (USD 176) per month. Several farmers expanded their mushroom production and diversified the types of mushrooms they cultivated, which increased their profits by 30%–50%. The market for mushrooms also expanded to four provinces, increasing revenue by 50 percent (Box 1).

In KCT, 325 farmers were trained in potato cultivation techniques and their productivity and income increased by 15 to 20 percent. The KCT also sourced 210 tons of potatoes from growers to provide the farmer trainees with seed potatoes.

In VSAPAT, 75 farmers have been trained in cattle raising, and new construction techniques were introduced to provide the livestock with better shelter during cold snaps. The STRONG team has also developed a standardized business model for cow breeding to minimize the business risks of expansion and improved the project's financing model, as the company gives loans to low-income farmers without collateral.

In SARD, 50 orange growers have been trained on adapted cultivation techniques. The first harvest in November 2016 showed an increase in productivity of 15–20 percent, mainly because the farmers were able to water the orange bushes more effectively.

Overall, 548 smallholder farmers benefited from the pilot phase of the STRONG programme which had a budget of 160,000 USD.

CHALLENGES AND LESSONS

All smallholders have confirmed that they were only able to experiment with the new approach to planning and farming techniques because the STRONG programme had guaranteed to cover any losses that they might have incurred during the pilot implementation. This means that a guarantee system is required to enable business owners and smallholders to adapt existing processes. SPARK has learned that the business owners also need to be engaged at all stages of the project if they are to adopt new approaches.

A systematic approach to business continuity planning was critical for the business owners to identify risks and develop solutions. Training programmes needed to be practical and targeted at the specific needs of business owners and entrepreneur farmers. Scientific and technical input may also be necessary. Expanding BCP to a broader range of SMEs will require developing an “ecosystem” of service providers from financial and agricultural sectors, and a range of business tools and training mechanisms.

GOOD PRACTICE

Business continuity planning is a well-established discipline covered by the international standard ISO 22301 under the International Organization for Standardization. This standard specifies the requirements for a business to plan, establish, implement, operate, monitor, review, maintain, and continually improve a documented management system to protect against, reduce the likelihood of occurrence of, prepare for, respond to, and recover from disruptive incidents when they arise. The requirements are generic and are intended to be applicable to businesses of all types and sizes.

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**BOX
01****INNOVATING MUSHROOM FARMING**

Nam Anh company has been focusing on research and on the supply of mushroom varieties for seven years. Currently, the company has more than 300 satellite farms that import varieties and materials from Nam Anh, located from Mong Cai on the north to Can Tho and Ca Mau on the south of Viet Nam.

The company's owner, Mr. Ngo Xuan Kien, provides training that is free for poor people and people living with disability (PWD). He is working with a few NGOs to conduct research on new climate change adaptive varieties of mushroom.

He is proud of his successful mushroom varieties, such as the Milky-King, scallop, white-button, shitake, and lingzhi. Farmers used to have limited production during extreme weather conditions, and Mr. Kien has been able to develop a variety of the scallop mushroom that remains productive from 17°C–32°C (the traditional range was 18°C–26°C).

He sells breeding mushroom bags at only VND 6,000 (USD 0.26), with an assurance that each can produce at least

450 g of mushrooms. Each household of three workers can take up to 10–30 kg of the bags. The company promises to buy the farmers' produce at VND 22–25 thousand (USD 1) per kilogram. The farmers can sell to any trader, who may pay up to VND 30–40 thousand (USD 1.5) per kilogram. Annually, the company produces about 1 million bags.

Mr. Kien promotes the use of recyclable materials in mushroom cultivation so that the final waste will not affect the environment. For example, the bags are used as a substrate for organic fertilizers. All the mushrooms are organic and the production materials, including the wood used to grow lingzhi, have traceable origins.

Mr. Kein believes the domestic market for mushrooms is huge, and that they will always be in high demand. There is also a strong export market and a ton of white button mushrooms, which can be grown in three months from the straw and thatch left after rice harvesting, can be sold for VND 10 million.

There are also several organizations and initiatives operating within the ASEAN region that support businesses and other organizations in business continuity planning. In addition to national initiatives such as the Philippine Disaster Resilience Foundation's work with SMEs, there are regional programmes including iPrepare Business facility of the Asian Disaster Preparedness Center. This project is supported by the ADB's Integrated Disaster Risk Management Fund and financed by the Government of Canada and the German Ministry for Economic Development and Cooperation within the framework of the Global Initiative on Disaster Risk Management. The project focuses on understanding and improving disaster resilience, including business continuity planning for SMEs in Viet Nam, Indonesia, the Philippines, and Thailand.¹⁶

However, nearly half of the SME respondents to the regional survey of the Asian Disaster Reduction Centre stated that they are not aware of business continuity planning.¹⁷ And there are several barriers to the rolling out of formalized business continuity planning starting with the sheer number of SMEs within ASEAN countries.

The ADB has assessed that there are more than 63 million SMEs in the eight ASEAN member states—57.9 million of these exist in Indonesia alone. Except for Myanmar, SMEs account for over 97 percent of all enterprises in each ASEAN country. And as most of these SMEs are family-run microenterprises, the owners have limited access to formal education. Finally, what constitutes a SME is understood differently in each country, which inhibits learning and collaboration.

CONCLUSIONS

SMEs are an important part of the economies of all ASEAN member states. However, they are vulnerable to disasters and climate change impacts. When SMEs are unable to trade after a disaster, many people are unable to gain income (because they are unable to sell their produce or provide labor), and thus unable to buy the goods and services they need.

Business continuity planning approaches need to be adapted to help SMEs and larger businesses in ASEAN plan for large-scale disasters and smaller-scale events that also disrupt supply chains and cause SME's to fail. SMEs are regularly affected by insidious changes, such as the impacts of hot and cold, wet and dry spells, the outbreak of pests and diseases, saline intrusion, and other smaller disruptions.

Supporting SMEs in the region to manage these disruptions first requires a concerted effort in awareness raising so that business owners and policy makers are aware of the risks and actions, such BCP, that can assist. There is a need to develop appropriate tools and training for SMEs¹⁹ and to put in place an enabling environment for the development of policies, services, and regulations that would encourage and enable appropriate business continuity planning.

Although business continuity planning can reduce the impact of disasters and disruptions on businesses and is codified internationally, the number and capacity of SMEs within ASEAN countries present challenges to its widespread uptake. The example of situated practice, the STRONG programme in Viet Nam, shows that these challenges can be overcome when the appropriate support and enabling conditions are established. SMEs can adapt their business practices and successfully plan to manage risks.

TABLE 1. Number of SMEs and proportion of all enterprises that are SMEs in eight ASEAN countries¹⁸

COUNTRY	NO. OF SMEs	PROPORTION OF ALL ENTERPRISES
Cambodia	512,870	99.8%
Indonesia	57,900,000	99.9%
Lao PDR	124,510	99.8%
Malaysia	645,136	97.3%
Myanmar	39,062	87.4%
Philippines	940,886	99.6%
Thailand	2,760,000	97.2%
Viet Nam	333,835	97.7%
Total	63,256,299	97.3%

RECOMMENDATIONS TO THE ASEAN

The importance of SMEs has been well recognized in the second phase of the AADMER Work Programme for 2016–2020. Priority Programme 4 (Protect) lays out a roadmap to strengthen the resilience of SMEs (Box 2). The following recommendations would help to strengthen the implementation of the road map:

1. *Support peer-to-peer learning for SME entrepreneurs.* Developing climate-adaptive enterprises requires innovating and adopting new practices and tools which can be supported through peer-to-peer learning. Good practices identified through peer to peer learning can be shared at special sessions during the ASEAN Summit on Disaster Risk Reduction and in existing ASEAN platforms.
2. *The ASEAN Strategic Action Plan for SME development 2016-2025* should support SMEs to address the

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These are some weather-resistant mushrooms produced by Nam Anh company. **PHOTO BY PATRICK VERIL**



impacts of disasters and climate change including through business continuity planning.

3. *Make risk and climate change data widely accessible.* The ASEAN risk data and climate models are mainly used for disaster management by the National Disaster Management Office and their local counterparts. This information can be used by other sectors including trade, industry, and agriculture sectors and should be made available.
4. *Establish a fund for SME business continuity planning.* Continuity planning is a good entry point for engaging with SMEs, especially those operating in the agribusiness, which are being affected by climate change and disasters. However, seed funding is needed to enable SMEs to innovate and take risks without compromising their daily income and long-term business investment. ASEAN could facilitate the establishment of a special fund to support SMEs to adopt climate and disaster resilient business practices.

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BOX 02

SME'S AND THE AADMER WORK PROGRAMME

The AADMER Work Programme emphasizes the importance of resilient SMEs to ASEAN economies and people. Priority Programme 4 (Protect) of the AADMER Work Programme includes, as its Component 4, “Establishing resilient regional production and supply chains in ASEAN.” This includes outputs that would enable SME owners to have greater access to financial services post-disaster for SMEs. Accordingly, Output 4.1 “Building resilience of business operations in disaster-prone areas through business continuity management for enhanced integration of ASEAN economy” describes the following activities to be implemented:

Develop capacity building programmes on business continuity management for small and medium enterprises (SMEs), microenterprises, and smallholder producers with relevant government agencies, through training, exchange of best practices, transfer of knowledge and technology on business continuity management.

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