



PARTNERS FOR RESILIENCE | INDONESIA

a journey for a thousand smiles

STORIES OF RESILIENT PEOPLE



2018



one
Bear



Climate
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INTERNATIONAL



INTRODUCTION

Disasters wipe out development progress and are being exacerbated by climate change, population growth, ecosystem degradation, and uncontrolled economic development. The poorest and the most vulnerable people are the hardest impacted groups of people as they are the most exposed to hazards and least able to minimize the hazard risks because of their low capacities. When this situation is ignored or unmanaged, there will be a **serious threat for the ongoing sustainable development.**

One answer to this is *resilience*. The stories inside are the examples of how communities are uniquely affected by climate change — and how we (PfR Indonesia and its stakeholders) work together and come up with unique solutions (**Integrated Risk Management-based measures**) that further help **strengthening community resilience and securing their livelihoods.**

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“After planting purple sweet potatoes, now we can consume vegetables everyday even during dry season. These root vegetables can fulfil our food need especially when we face corn harvest failure.

We can sell the excess yields to the market and we get cash to fulfil our daily needs. We hope that we can get specific training on product marketing in order to be able to market our purple sweet potatoes successfully.”

(Yunyulita Lakilaf, female farmer, Oekiu village, Timor Tengah Selatan district, East Nusa Tenggara).



The purple sweet potato plants are being sustainably cultivated and researched in the Dry Land and Islands Laboratory of Nusa Cendana University, NTT.

WHAT’S SO GREAT ABOUT PURPLE SWEET POTATO?

LET’S START WITH LOCAL FOOD TO BETTER DEAL WITH DROUGHT-DRIVEN FOOD INSECURITY

By: Shanti Sasmitaningsari, CARE International Indonesia

DROUGHT is a major issue in Nusa Tenggara Timur (NTT) Province that is located in the eastern part of Indonesia. The topography of the islands (mountains, semi-arid grassland savannah and karst-mountains) and dramatic drop in rainfall in NTT over the past decade, **exacerbated by climate change**, make farming and livestock cultivation face many challenges which further limit the land productivity, decrease farmers’ income and lead to food insecurity as well as malnutrition. **NTT is one of the provinces with highest undernutrition rate in Indonesia**, with more than a third of children under five years old are underweight.¹

Women are becoming a group of people who are most impacted by the drought. Gender inequality practices that still generally happen in most NTT community put women in a weak position during a decision making process that is related to food security and family nutrition fulfilment. In fact NTT women actually play important roles because they cooperate with men in implementing agriculture activities, selling the yields to the market, managing the food, especially in food storing, cooking and preparing food for the whole family members.²

Acknowledging this situation, CARE and its partner CIS Timor worked with the government and the community in Oekiu Village to establish a female farmer group, which is called “Moen Mese”. This group aims to make NTT female farmers more empowered, well informed and are able to involve actively in decision making process, especially the ones related to food security and family nutrition. Through this group, CARE introduced its accompanied community the **“Integrated Risk Management (IRM)-based measures”** as efforts to strengthen community resilience, to secure food availability, and to protect

¹The Health Research and Development Office. 2010. The report of National Basic Health Research.

²NTT in Figure 2010, page 23-26

³Dripping irrigation is a plant watering method by using used mineral water bottles to keep household waste water or contained rain water. A small hole is pierced on bottom of the bottle to drip water to the plant. The bottle can be refilled every 3-4 day.



The bigger and heavier purple sweet potatoes from Mrs. Tersi Banunu's home garden (it's called "pertanian pekarangan" in Indonesian).



Purple sweet potato ice cream. So yummy and healthy!

Why purple sweet potato?

Because it is one of few tuber crops that can grow in semi-arid areas such as in East Nusa Tenggara, Indonesia. Besides they are rich in nutrients, the plants also resistant to pests and diseases as well as they tolerate to dry climate, do not require much water, relatively easy to manage by farmers and they can be planted in a relatively small area (for example in a home garden). CARE didn't only provide training on the crops planting technique and dripping irrigation but CARE also distributed 5 purple sweet potatoes baby plants for each farmer group member.

community livelihoods. One of the activities was the purple sweet potatoes planting that can become an alternative food resource during dry season.

"Unlike the other root vegetables which could only grow during rainy season, this purple sweet potatoes can still grow in dry season. We could just water them once per two days. We use dripping irrigation³, taught by PfR, which is very helpful because it saves water and suitable for our village that has water problem", explained Mrs. M. Kause, a female farmer from Oekiu Village.

One of the PfR partners, Mr. Ir. Zet Malelak, M.Si (Lecturer and the Head of Research of "Dry Land and Islands" Laboratory of Nusa Cendana University) shared that the purple sweet potato planting process is not too difficult. For the propagation step, the plant can be propagated by cutting a healthy trunk from the parent plant and then plant it in the growing media inside a plastic polybag. It takes 2-3 weeks for the rooting

process and the new plant is ready for transplantation. The planting hole for each plant should be deep and big enough and farmers should fill the hole with fertilizer before a new plant introduced. The planting hole size is 30 cm x 30 cm x 30 cm. In order to optimize the sweet potatoes' growth, stakes are used to ensure all leaves can get adequate sunlight.

By using the cultivation techniques above, farmers can have more harvest and bigger products than before. **Planting purple sweet potato as an IRM-based activity enables them to plan and to maintain food stock for the whole family members during a long dry season, to minimize the risks of malnutrition, to adapt to climate change challenges, and to sell the yields excess with a better price (about 3 USD per kilogram) which will add household income.** Now the purple sweet potatoes cultivation has developed and the community have more or less 1500 trees. Those trees are able to strengthen the food security of most Oekiu Village community members. (*)



A NEW LIVELIHOOD FOR MARUNDA RESILIENT COMMUNITY

**By: Arfiana Khairunnisa and Johan Rachmat Santosa,
KARINA YOGYAKARTA**

“By actively involving in this program, our knowledge and confidence are increasing. I gain additional income from growing vegetables. I also participate actively in waste bank and saving and loan activities. All of these experiences have made women are no longer dealing with loan sharks.”

(Warni, Marunda community member, North Jakarta)

FLOOD, either caused by heavy downpours or tidal flood, is the main hazard in Marunda area, Cilincing Sub-District, North Jakarta. Marunda is a coastal area in North Jakarta. The flood that occurs in Marunda restraint the community from doing their normal activities and also working on their livelihoods. It also damages the infrastructures and also causes waterborne diseases. Therefore, the community face high risks from this hazard.

To address that situation, in 2015 Karina KWI Yogyakarta committed to build the resilience of the Marunda community by implementing Marunda Urban Resilience in Action Program (MURIA). This resilient program aimed to build the capacity of the Marunda community and its stakeholders who involved in this program in order to build resilience and to become a model of urban resilient efforts that were able to be replicated.

Karina KWI Yogyakarta and Bina Swadaya Konsultan (BSK) implemented the resilience program in Marunda from 2015-2017. Both organizations worked in a multi-stakeholder platform with funding supports from Cordaid and Ford Foundation Indonesia. This program worked with the most at risk community towards hazards, climate change and development who lived in community units (RW) 07 and 10, which were the most vulnerable spots in Marunda.

Yohan Rahmat Santosa, Karina KWI Yogyakarta Program Manager said, *“To get the community interest to participate in their city’s resilience strengthening activity, this program linked their activities with some risk-proof livelihoods activities which suited the situation and condition in Marunda.”*

Based on the risk assessment implemented by the Muria Multi Stakeholders Platform and also the value chain assessment which was exclusively conducted by Spire Consultant, the livelihoods measures selected were the ones that were able to provide quick income for the community (quickwins). These type of activities were selected so that the community were able to enjoy the program results and benefits.



Marunda community created small farm in an empty land around the buildings.



The vegetables that have short period of harvest



A man from Marunda is working on the small farm that also increase their daily nutrition.

One of the quickwins livelihood measure selected was urban farming. The vegetable growing period is relatively short; only within three weeks the community were able to harvest their first yields and gained income from the vegetable selling. Besides providing additional income for the community, the urban farming activity also helped the community increase their daily nutrition intake. This activity was in line with the urban farming pilot program implemented by the Jakarta government.

The other livelihood measures selected were establishment of waste bank and also saving and loan join business. At the moment there are 11 waste banks and 14 community join businesses on saving and loan in Marunda. This waste bank initiative is able to create a livelihood option and also changes the Marunda environment, especially in the community settlement, to become cleaner.

A distinctive thing about this program was that this program included the quickwins into a digital map. The typical of urban community is that they are more interested in doing economy activities rather than non-economy-related, therefore, in order the

information on flood contingency plan inside the OpenStreep Map was able to be recognized by Marunda community, some thematic maps were developed. These maps contain information on the development or economy activities implemented in Marunda and the community may see and involve in those economy/development activities. Those thematic maps are for example the urban farming activities, community join business on saving and loan, etc. **By observing the thematic maps, on the same time the community may also see the risks maps that are related to the mitigation efforts and adaptation measures and also the contingency plan for flood and flash flood hazards that potentially occur in the area.**

The Jakarta Province recognized that the urban farming program in Marunda was in line with the city's programs. The government acknowledged the positive results from the works implemented by Karina KWI Yogyakarta, who is a member of Partners for Resilience (PfR) Indonesia, and they invited Karina KWI Yogyakarta to work together with the government to develop the Grand Design of Urban Farming.(*)



INTEGRATED RISK MANAGEMENT THROUGH SUGAR PALM PLANTING IN WONOGIRI

By: Nury Sybli, Nur Febriani Wardi, and the Indonesian Red Cross

“We lend the nursery plot to our friends from PMI and SIBAT (Community Based Disaster Preparedness) as a support from the village in managing the disaster.”

(Mr. Agus Purwanto, Ngadipiro Village Head)

IN 2007, the overflow water from Bengawan Solo River caused flooding in its upstream area in Wonogiri District and the water continues to flow to the centre of Surakarta District up to its downstream in Bojonegoro District. Thousands of trees were washed away because of the barren river banks, community settlement was inundated, community properties were carried away by the water current to the sea. To minimize the future disaster risks, the community and the government should cooperate to maintain their environment by implementing conservation, empty land revitalization, and reinforcing the landslide prone river banks.

In the implementation of the sustainable disaster mitigation efforts, in 2015 the Indonesian Red Cross (PMI) in Wonogiri, supported by IFRC and Zurich Insurance, worked with the community to plant 6000 sugar palm trees (*Arenga Pinnata*) in the upstream of Bengawan Solo River. The trees were planted in Gedong Village, Nadirojo, Wonogiri which is part of the watershed. The Bengawan Solo watershed covers a large area until Bojonegoro District. Similar activities were implemented in Ngadipiro Village, Nguntoronadi Sub-District and Gumiwong Lor Village, Wuryantoro Sub-district. The sugar palm planting activity in the watershed is able to reduce the flood risks and to bring economy benefits for the community.

Sugar palm trees were selected as flood and landslide prevention plants because the trees have a strong rooting system that has a soil-binding ability. The trees reinforce the soil structure and reduce the erosion risks. In addition to that, sugar palm trees do not disturb the short-term plants that grow under the trees.

At the moment PMI Wonogiri has 1000 sugar palm baby trees that are ready to be planted (age 2-3 years old). They were raised in a nursery plot in Bengawan Solo River creek or it's called Kandang River. Mr. Agus Purwanto also supported the activity by participating in planting the sugar palm trees in the Bengawan Solo river bank with SIBAT volunteers.



Sugar palm seeds.



Members of Community Based Action Team (CBAT) trained by PMI and the village head while planting sugar palms.



Sugar palm's deep root system provides protection against soil erosion and it is also flood resistant.

Besides preventing landslide, the sugar palm trees also have a high economy value. One sugar palm tree is able to produce 13 bunches and each bunch can have 1000 sugar palm fruits. That means that the planting activity is a conservation measure but in the same time, when it's well managed, Wonogiri has a potential to become a leading palm sugar producer in Central Java Province. The practices implemented in the program were SIBAT PMI disseminated the seeds for free and during the harvest time, SIBAT collected the yields to be processed or sold.

Other benefits of the tree are the sugar palm fiber may become an absorption supporting material and used to produce rope. The fronds' sticks may be used as materials to produce brooms and the fronds themselves are used to tie and wrap durian fruits. When the trees are big, their juice are taken to produce palm sugar that is effective to cure cough. When the trees are old and it's the time to regenerate, the timber may produce sago and can also be utilized to make kitchen utensils. The fruits are called *kolang-kaling* and they are nutritious.

During the official visit in December 2017 that aimed to document and to disseminate good

practices, Nur Febriani Wardi, the representative of the International Federation Red Cross and Red Crescent, who was responsible for the Partners for Resilience works, appreciated the work of Wonogiri PMI because through the sugar palm planting, the community have implemented the integrated risk management.

*"The sugar palm trees planting, done by PMI with SIBAT in Wonogiri, is a simple example of the integrated risk management implementation. **The trees were planted as part of the disaster risk reduction measures, as a climate change adaptation effort where the climate change has increased the landslide risks and as an ecosystem management measure in the river bank. It's not just beneficial to prevent the disaster, but the trees also bring potential economy value so that the community can reap the benefit and increase their income.** In implementing the activity, PMI was not alone, but they invited the village government, private sectors and the community to actively participate. This is what we call an integrated risk management,"* explained Nur Febriani Wardi. (*)



BRINGING YOUTH TO DISSEMINATE WEATHER FORECAST FOR FISHERMAN AND COASTAL COMMUNITY

By: Raja Siregar, the Red Cross Climate Centre

“We do not know that the forecast information is available and we can actually access them directly and easily. We now know when would be good weather for fishing and not several days ahead. Traditional knowledge has no capacity to predict weather at sea more than several hours ahead.”

(Moses, fisherman, Oesapa village, Kupang city, East Nusa Tenggara)



Staff of CARE Indonesia presented MoMAF (Ministry of Maritime Affairs and Fisheries) website to access information forecast on fishing ground to fishermen and youth.



Fishermen and youths in Blitar received introduction forecast on fishing ground.

THE CHANGING pattern of seasonal climate confuses the fisherman in deciding when to go to the sea. This is both affecting the fish catch and increasing risk to their safety. Indonesian Agency on Meteorology, Climatology, and Geophysics (BMKG) produce and release information on maritime weather forecast on its website. The information



SHOT ON MI 5X
MI DUAL CAMERA

Red Cross Climate Centre advisor assisted fishermen and youth in Kupang City to access BMKG website of maritime weather forecast.

covers data of wave height, wind direction and speed, current direction and speed, cloud condition (bright, cloudy or rain), which updated daily and weekly. It is potential to help the artisanal fishers to decide when to go to the sea in the changing climate pattern. It is also useful for tourism sector and transportation at small islands. Unfortunately, the information has yet reached the fisherman due to limited extension officer, lack of knowledge and skill of artisanal fishers to access web-based information.

Providing knowledge to fishermen/coastal community with knowledge and skill to access and to interpret the forecast information would significantly help them to access the information sustainably.

Training was organized by PMI and American Red Cross with technical assistance from Red Cross Climate Centre of PfR (Partners for Resilience) Indonesia alliance. In this training, youth from coastal community were invited with balance number of invited fishermen. Engagement of youth on the training based on knowledge that most of fishermen, especially senior fisherman, are not familiar in using computer/accessing internet. After following training, senior fishermen understand and appreciate the forecast information however required longer time to have skill in accessing the information directly from website.

Meanwhile most of youth in area with good internet access have good skill to explore information on web-based site (including social media) through smartphone or computer. PMI and American Red Cross organized training for fishermen, youth and coastal community in North of Jakarta. Training on seasonal and atmosphere weather forecast was given to volunteer of PMI in Bogor City and Jakarta. Red Cross Climate Centre of PfR Indonesia also introduce the approach to USAID APIK (Adaptasi Perubahan Iklim dan Ketangguhan/ Resilience and Climate Change Adaptation) and PfR alliance member (CARE International Indonesia). Both organizations organize the similar training respectively in Blitar District and Kupang City.

In this training, fishermen were asked to bring their own son/daughter or close relatives who have been familiar with smartphone. Having youth and fishermen in one training potentially generate respect of fishermen towards the invited youth and vice versa to develop responsibility of youth to provide fishermen the forecast information regularly or when needed. Training in Kupang shows that woman/wife of fishermen family have potential role in disseminating the forecast. In several places, woman hold the only phone/smartphone the family owned. Woman also demonstrate interest to warn fishermen in their family should extreme event at sea likely to happen in coming hours. (*)



BUILDING WITH NATURE PROGRAM IN WEDUNG VILLAGE, DEMAK, CENTRAL JAVA

By: Mauliyati Nuraini, Wetlands International Indonesia

“Both the Mangrove Green Belt Restoration and Mixed Mangrove-Aquaculture participatory programs under the Building with Nature have opened our eyes to the effectiveness of natural recruitment of mangrove seedlings, and eventually reclaiming the land that once lost in the coastal area.

We are also inspired by the knowledge shared on innovative and environmentally-friendly aquaculture techniques, including the use of local micro-organism (MOL), which has slowly improved the production of shrimp and milkfish locally. Now we leave some space along the side of our ponds aligning with the river to allow mangrove to grow and help reduce abrasion and tidal flood, and also to capture and filter water before getting into the pond.”

(Maskur, chair of Onggojoyo Jaya farmer group)



Onggojoyo Jaya compost processing post – Wedung Village, Demak, Central Java.

LOCATED in the northern coast of Central Java province, Wedung is one of those villages that is frequently flooded due to a combination of several water-related natural disasters, including coastal abrasion, tidal flood, land subsidence, and sea level rise. Recorded as one of Demak’s most fertile villages in the past, in the more recent years Wedung suffers from consecutive and significant loss in the aquaculture sector caused by the flooding and deteriorating coastal environments.

In 2015 Building with Nature started to work in Wedung, together with two local community groups (Rejo Mulyo and Onggojoyo Jaya) focusing in aquaculture activities and business, to rehabilitate and restore the mangrove green belt along the north coast and revitalize the community group members’ livelihood through the BioRights mechanism. To date, more and more of the local community realize the importance of rehabilitating what remains of and restoring the mangrove green belt along the northern coast of Demak, because the mangrove green belt has proven to protect the coastal areas and further landward from abrasion and impacts of sea level rise. This is reflected in the increasing number of farmers in Wedung that are willingly convert their ponds into mangrove green belt and move the pond further behind to continue their aquaculture business.



Maskur, chair of the Onggojoyo Jaya aquaculture farmer group is a junior high school teacher and also member of the local Village Development Body (BPD) in Wedung village, Demak.



Several farmers processing compost from Water Hyacinth (*Eichhornia crassipes*) initially found as weeds in their pond. Compost production is a viable business in the area.

In October 2017 Onggojoyo Jaya aquaculture farmer group of Wedung signed a BioRights contract valuing IDR 510.5 million (equals to USD 37,000), which is one of the ten contracts agreed upon between the Building with Nature program and community groups across nine villages in Demak valuing a total of USD 280,000. **Through the BioRights mechanism, each of the local community groups formulate a 3-year plan to restore the mangrove green belt while at the same time increase their welfare by improving aquaculture techniques and developing alternative livelihoods through updated science-based materials they obtain in the Coastal Field School (CFS).** It is through the CFS, the local community group members understand and anticipantly implement environmentally-friendly aquaculture farming techniques – including those on mixed mangrove-aquaculture, and regain confidence in rebuilding and running their business.

In the other eight villages working together with Building with Nature, efforts to restore the mangrove green belt also include the building of

permeable dams along the coast to collect sediment, which will later recruit mangrove seedlings naturally. This natural recruitment of mangrove is preferred over mangrove planting because it has statistically shown better surviving results. The Indonesian Ministry of Marine Affairs and Fisheries (MoMAF) already invested significantly to further replicate this construction of permeable dams (hybrid engineering – HE) in other districts across Indonesia.

Another important measure that is being gradually put together is the formulation of a Village Regulation (Perdes) on crucial and current environmental issues, such as ground water extraction that will affect land subsidence. This formulation process is lead by the Village Planning Body (BPD) using a community participatory approach during regular round table discussions, which is expected to also expedite knowledge sharing process across the community on actual issues in their village. All these efforts in Demak are expected to build a more disaster-resilient community as they reflect an overall Integrated Risk Management (IRM) approach. (*)

What is BioRights?

BioRights is a kind of payment for environmental services mechanism that is basically provides a contract-based loan to local community on the condition that the community will restore/ preserve their environment over an agreed period of time. The loan provider sets a series of success indicators that are in some parts must also be quantified, while the community sets up a series of measurable efforts and action plan to preserve their environment. If by the end of the contract period the environment is proven to be preserved, then the loan becomes a grant.

“With the knowledge I gained from PfR and concern of my children could not get enough vegetables to keep their bodies healthy, I dared myself to make a water trap⁴. I use the rainwater to irrigate vegetables in my garden and livestock intake. This effort went well so far as now, particularly in the dry season, my family can still consume vegetables as needed and assets of livestock are also maintained its survival. In fact, my harvest is quite abundant so I can sell some to the market and fulfil my children’s school needs. My neighbors finally saw the benefits of this water trap and did the same thing. As a result, now there are 12 water traps in this area.”

(Marteda Bani Mambait, a mother of three, Nunsanen village, Kupang district, NTT)

⁴The water trap is a hole in the ground that is used to collect rainwater.







VILLAGE PLANNING AND BUDGETING FOR DISASTER: WHY GENDER MATTERS

“If we just come and keep silent during the village development planning meeting (it’s called Musrenbang in Indonesia), do not expect people will know what our problems are. We must speak and be confident, no need to be afraid that people will laugh because of our unstructured words. Just start doing it, don’t be afraid to start anything.”

(Antonia Neolaka, a female prominent figure in Batnun Village, East Nusa Tenggara)

**By: Nurhasdiana and Shanti Sasmitaningsari,
CARE International Indonesia**

NUSA TENGGARA TIMUR (NTT) is one of the most disaster affected provinces in Indonesia. The high level of poverty⁵ and low education level that confine the province have contributed to the community incapability, especially women, in facing the natural hazard caused by climate change and environment degradation. Climate change has contributed to the poverty experienced by women, because mostly the NTT women work in informal and agriculture sectors and they are economically vulnerable. In general, both informal and agriculture sectors experience the worst damages and biggest economy loss when a disaster is happening.

Some studies reveal that in comparison to men, women are more vulnerable towards the negative consequences of a climate change triggered disaster. This mainly happens because of unequal access, roles, power, control of assets and resources, which further limits the ability of women to make informed choices that could help strengthen their resilience to climate change and disasters. This condition is exacerbated by the values system and patriarchal culture practices done by the NTT community.

Women’s role is important in strengthening the community resilience through the Integrated Risk Management (IRM) based measures, therefore, incorporating gender perspective since the early planning stage until the monitoring and evaluation have to be done in each intervention. With a strong structure of traditional and environmental knowledge gleaned from years as well as control on resources, women are more resilient and likely to use their knowledge and skill for better dealing with hazards.

In addition to good governance and sustainable development, gender mainstreaming is one of the strategies implemented in the national development programs. CARE includes innovative aspects in its interventions, i.e. developing “policy dialogue” and “capacity building”, which are implemented by fully involving different levels of community and government components. To ensure the gender perspective integrated into each stage of every IRM based activity, thus **“Gender**



Sharing session on IRM principles in gender sensitive manner between Mr. Agustinus Paju (CARE field staff) and a group of women from Oelbitino village in the event of Pre-Village Development Planning Meeting (Pra Musrenbangdes)

⁵NTT is a very disadvantaged region, with 1.149 million people or 22% of its population living on or below the poverty line (Central Statistics Agency, 2015)



A female stakeholder of Village Development Planning Meeting (Musrenbangdes) in Oelbitino village boldly and bravely expressed her concerns on the issues of the improvement of basic health facilities in Oelbitino community health centre (it's called Puskesmas in Indonesian).



A female government official from Batnun village presented about gender effective disaster resilience issues.

Mainstreaming Institutional Strengthening (it's called PUG in Indonesian) is becoming essential. The **"PUG Institution"** becomes a consultation and coordination space for the gender and women empowerment implementers and mobilizers from different organizations in the area. Its role and function is to give technical assistances to the District Government Instrument Organizations (it's called OPD in Indonesian) that are available in its working place, to formulate policy, program and development measures especially the ones related to disaster risk reduction, climate change adaptation, and environment degradation.

To increase the women groups' participation and control, one activity that was held by CARE through PfR Indonesia was to facilitate the **Village Development Planning Meeting (it's called Musrenbangdes in Indonesian) that was specifically held for women groups**. This meeting was designed in order women as the main actors and mobilizers were able to explore and to analyze village problems and potentials and to involve more actively in the development process and local resource management, to speak out their basic needs and also how to fulfil those needs. The other objective was to enable exchange learning among villages and groups, and to share information and knowledge among women as an effort to increase the community resilience.

"In the past women were worried to speak, by encouraging them to actively participate in public spaces, now we are brave to convey our thoughts and to make changes", confirmed Ferderika, a women prominent figure from Nunsael Village during a training on gender perspective planning and budgeting advocacy. She also added that women participation increased not only in terms of quantity but also quality, women were able to determine what were important and became their needs.

Mr. Yusuf Zetmin Koinmanas, a farmer from Oelbiteno Village also feels the same thing. *"Now, women and men have the same rights to express their thoughts and there are fair works distribution among family members. In the past, household works were the main responsibility of women, now it has changed"*, he said. Mr. Zetmin is starting to apply the knowledge gained from the training in his family daily practices.

PfR Indonesia with the grass root community work together and voluntarily do active participation not only to increase women participation in the village level so the village government have recognized the importance of women voice, but also to incorporate gender into the trainings given to the government, so that now they have a gender perspective when preparing the village development plan. (*)



THE ECOSYSTEM RESTORATION MANAGEMENT APPROACH IN SIKKA DISTRICT

**By: Arfiana Khairunnisa and Johan Rachmat Santosa,
KARINA YOGYAKARTA**

***“The hybrid construction saves
Fata Hamlet from coastal erosion.”***

(Ansel, a community member of
Fata Hamlet, Magepanda Village,
Sikka District, East Nusa Tenggara)

THE COMMUNITY in Flores Island, Nusa Tenggara Timur Province experience different hazards, i.e. strong wind, landslide, flood, drought and coastal erosion and they constantly happen each year. The program implemented by Partners for Resilience (PfR) Indonesia in Flores Island is a disaster risk reduction program that integrates climate change adaptation and ecosystem restoration management. The objective of the program is to build the community resilience in facing disaster risks and to protect their livelihoods from disaster risks.

a. Roof Construction and Sorghum Plant

To reduce the strong wind risks, the community reinforced their house roofs by applying a low cost and simple technology. To tie and to fasten are the simple roof reinforcement technology that the community were able to easily apply in their own houses. The community utilized local materials that were available in their houses, therefore, a wind resistant house doesn't require an expensive cost.

In addition to the house roofs reinforcement measure, this program also invited the community to regrow sorghum, one of wind-resistant plants. This type of plant has been proven that it's able to grow in a dry climate, therefore, it can survive in the area where the climate change signs are obvious. In this place it is indicated by a longer dry season. In the past, broad community members didn't know that they were able to create various food item from sorghum, thus, some sorghum processing trainings to create some products from it, like making cookies. This initiative has added the sorghum selling point and helped the community increase their livelihoods.

b. 3R To Overcome Drought

The government of Kolisia B and Reroroja Villages allocated their village development budget for the year of 2017 to build 150 absorption wells in Kolisia B and 300 units in Reroroja. Both villages are the center of rice production in Sikka District. However, in the last 10-15 years, the farmers only had one



A girl holds vegetable. The 3R practice is implemented to increase the harvest in Sikka District.



The community in Flores Island build hybrid constructions to hold back the sea wave.

harvest per year, even there were a lot of farmers experienced crops failure in the last 2 years because of drought.

The government then adopted the 3R measures from the Integrated Capacity Building for Vegetable Farmer Groups Program in Timor Island that was supported by Cordaid and Anton Jurgens Fonds – The Netherlands. The 3R implementation includes **Recharge** water to the water buffer so that the water circulation and sustainability are preserved; **Retain** water or to contain/to trap the falling water so that it can be utilized for later use; and **Reuse** the waste water in order to revolve the water as many as possible.

c. Hybrid Construction to Prevent Coastal Erosion

To reduce the coastal erosion risks, the community in Flores Island built hybrid constructions to hold back the sea wave. The hybrid construction and mangrove planted to prevent the coastal area loss have shown a good result in some places. The soil sediment has been trapped by the constructions and mangroves and it adds up the size of the coastal areas.

Fata hamlet in Magepanda Village which is located in the coastal area, learned hybrid construction from the community live in Talibura Village. The Talibura community was a beneficiary of Wetland International in implementing some PfR programs that included hybrid construction. At the moment the hybrid construction that was built by the Fata community in some stages is already 3 years old and it has been able to increase the length of the coastal area for 300 meters. The mangrove

area in the coastal line now becomes a new ecosystem where the community may rise prawn and crabs for their daily consumption. The other unpredicted impact from this initiative is that the area is becoming a tourist area and this creates an economy opportunity for the local community.

d. Prevention Measures in Watershed Area

To overcome flood and landslide problems, some prevention, risk reduction and preparedness measures were implemented in the whole watershed area. The activities included construction of bench terraces to prevent landslide, hardwood planting on the bench terraces in some landslide prone spots.

The program also did an assessment in the watershed level and conducted advocacy to all stakeholders involved in the watershed management in Sikka District. The program has produced the management plan documents for 103 watersheds in Flores (Integrated Watershed Management Plan - RPDAST in Indonesian).

One of the Integrated Watershed Management Plan (RPDAST) documents is the document on Dagesime-Magepanda Watershed management. The program has done advocacy works in order to include the RPDAST into the Sikka Mid-term Regional Development Plan (RPJMD). Meanwhile, in the watershed level the advocacy works aim to include the RPDAST into the Village Mid-term Development Plan (RPJMDes) and the Annual Village Development Implementation Plan (RKPDDes). At the moment the Dagesime Magepanda RPDAST has been officially included in the RPJMDes and RKPDDes. (*)



THE RESILIENT AND EMPOWERED DEMAK COASTAL COMMUNITY

By: Nury Sybli, Nur Febriani Wardi, and the Indonesian Red Cross

“At the moment we have planted almost 100,000 mangrove trees and the successful rate is almost 96-98%. Community Based Disaster Preparedness (SIBAT) is continuing to advocate the community on the importance to learn how to reduce disaster risk by introducing mangrove, participating in taking care the plants and planting mangrove together that will become a buffer for the coastal erosion prone area.”

(Singih Setyono, the Head of the Indonesian Red Cross, Demak District, Central Java)

20 YEARS AGO, the coastal area in Berahan Wetan Village, Wedung Sub-District, Demak District, was a community owned fishponds location. However, the abrasion drowned the location. To rebuild the devastated coastal area required an uneasy process. In addition to return the community fishponds, the main objective was to create a green coastal area with optimal vegetation level. One of the measures was to grow coastal plants that would also bring attention to the existence of the community ponds.

To support that initiative, Demak Indonesian Red Cross (PMI) committed to revitalize the First Program of Mangrove Conservation Landscape in Menco Sub-Village and Berahan Wetan Village, Wedung Sub-District. Andy Afandy, the PMI promoter from the Assessment Centre of Coastal and Marine Resource - Bandung Agriculture Institute (IPB) explained that mangrove was beneficial to protect the beach from coastal erosion and they were also an ecosystem that was important to support the fish and crabs breeding, furthermore, they absorbed higher carbon dioxide compared to a forest or a peatland. It's recorded that Indonesia has around 3,000,000 hectares of mangrove forest or represents 20% of the world mangrove, meanwhile Australia and Brazil are in the 2nd and 3rd place, with around 900,000 hectares of mangrove.

Regarding the mangrove protection, SIBAT has done an advocacy work that resulted in a village regulation on mangrove protection. The objective of the village regulation is in order the community work together to keep, to take care the mangroves and to participate in mangrove planting. With the availability of such regulation, it's expected that the mangrove planting that has been done by PMI and its partners are protected from the unexpected actions such as plant removing, destruction, and logging.

On the same time, Demak District Government also supported private sectors to participate in mangrove planting along the coastal line in Demak, starting from Sayung Sub-District,



'Reduksi', a mangrove ecotourism developed by PMI and SIBAT in Demak to reduce disaster risks.



In addition to conserve the mangroves, the ecotourism brings joy and education to the visitors which are mostly students.



Karang Tengah Sub-District, Bona Sub-District and Wedung Sub-District. The sub-districts officials then did socialization on disaster issue to the community.

Demak PMI with the support from the American Red Cross created a mangrove forest ecotourism destination and a mangrove seedling nursery center in Kedung Mutih Village. In the present time, visitors who are mostly children, teenagers and students, regularly visited the ecotourism that is called "Reduction". In the Reduction Centre, SIBAT does mangrove seedling nursery. The mangrove baby plants produced from the nursery have potential to be sold. In addition to that the ecotourism area which has been covered by mangrove is becoming a suitable habitat for water biota like crabs and clams. Looking at this opportunity, SIBAT also does crab farming and has spread juvenile crabs. Meanwhile the fattening process is done in Berahan Wetan Village, where PMI and SIBAT have prepared floating cages (*karamba*) for the process. They have hundreds of kilogram crabs harvested in this

place. Through this alternative livelihoods, the SIBAT volunteers gain additional income to support their families.

Partners for Resilience Indonesia supports the good practices that have been done by Demak PMI by helping document the practices by developing some narratives and videos. The mangrove planting, done by PMI with SIBAT in Demak, is a successful example of the **Integrated Risk Management (IRM) because as an adaptation measure to climate change, the mangroves are proved to be able to protect the beach from the coastal erosion, in addition to that the plants are able to create a living space for water creatures that have high economy value like crabs and clams and it's becoming an alternative livelihoods for the surrounding community.** To support the sustainability of the initiative, PMI cooperates with the local government in issuing a village government on mangrove protection and encourage private sector participation. (*)



SELF-MADE AFFORDABLE FLOOD ALARM TO ANTICIPATE PEAK RAINY SEASON

“During an event on December 17th, 2017 we showed these alarm prototypes to the North Jakarta Mayor. He was impressed with the simplicity of these alarms. He suggested that more alarms are made elsewhere.”
(Sarjono, the Coordinator of the North Jakarta Indonesian Red Cross (PMI) volunteers)

By: Raja Siregar, the Red Cross Climate Centre and Andry Napitupulu, the American Red Cross



North Jakarta PMI presents self-made flood alarm.

JAKARTA City and Bogor District are two areas that are accompanied in the Greater Jakarta Resilience program and they both are flood prone areas. Flood occurs frequently in Jakarta. Especially in North Jakarta, the flood happens because of high precipitation and also tidal flood. A flood early warning, including in the household level, is required especially in the evening when the community fall asleep. The cheapest early warning tool that is available in the market costs IDR 3 million, and this amount is relatively expensive for both the Village Government and household level.

To better dealing with the issue, PMI with the support from the American Red Cross on Friday, December 22, 2017 organized a workshop with PMI volunteers from North Jakarta and Bogor District. This workshop was conducted to start the process of producing a number of affordable flood alarms. The self-made alarms are installed at the upstream of Citarum River in Bogor



PMI volunteers start producing several flood alarms.

District and several neighborhoods in North Jakarta, which is the downstream of Citarum River.

At the workshop, six PMI volunteers from North Jakarta and Bogor District showed the alarms that had been successfully made by themselves. The simple alarm is made from a magnetic door alarm sensor as the key component. This sensor will produce sound when the magnet is away from the sensor. The cost for producing one alarm is less than USD 10, which is only 5 percent of the price of similar flood alarm sold in the market.

PMI Chapter North of Jakarta have installed the flood warning during flood season in January-April 2018 at several spots. "It works well. Alarm activated when water level reaches the activated level. It is kids around that we have to be aware of. They potentially want to play with the equipment" said Panca.

The Climate Center expert also presented a second alarm design version that incorporates magnetic sensors and an ordinary door bell. This alarm will produce sound on the spot and also inside the house where the receiver is located. PMI volunteers provide some inputs for this alarm to make it more

Rosita presents her own made alarm.



friendly user.

The alarms production is part of strengthening community resilience measures implemented along the Citarum River. As part of the program, PMI and American Red Cross, with technical support from the Red-Cross Climate Centre, have also provided a training to access and to understand climate and climate forecast information for PMI staff and volunteers. The training was conducted twice, one was held in November and the other one was in December 2017. "The resistance against floods and extreme weather conditions is built on the weather knowledge and early warning", said Andry Napitupulu, the Program Manager of American Red-Cross.

This training on climate and weather forecast and flood alarm presentation were not only conducted for the North Jakarta and Bogor District PMI, however, they were also provided to the PMI staff and volunteers in its branch offices and other partner organizations. It's expected that the knowledge can be disseminated to broader audiences. (*)

Mangrove



Reduces the risk of sea water intrusion



Reduces the risk of abrasion and sea storm



Climate change mitigation



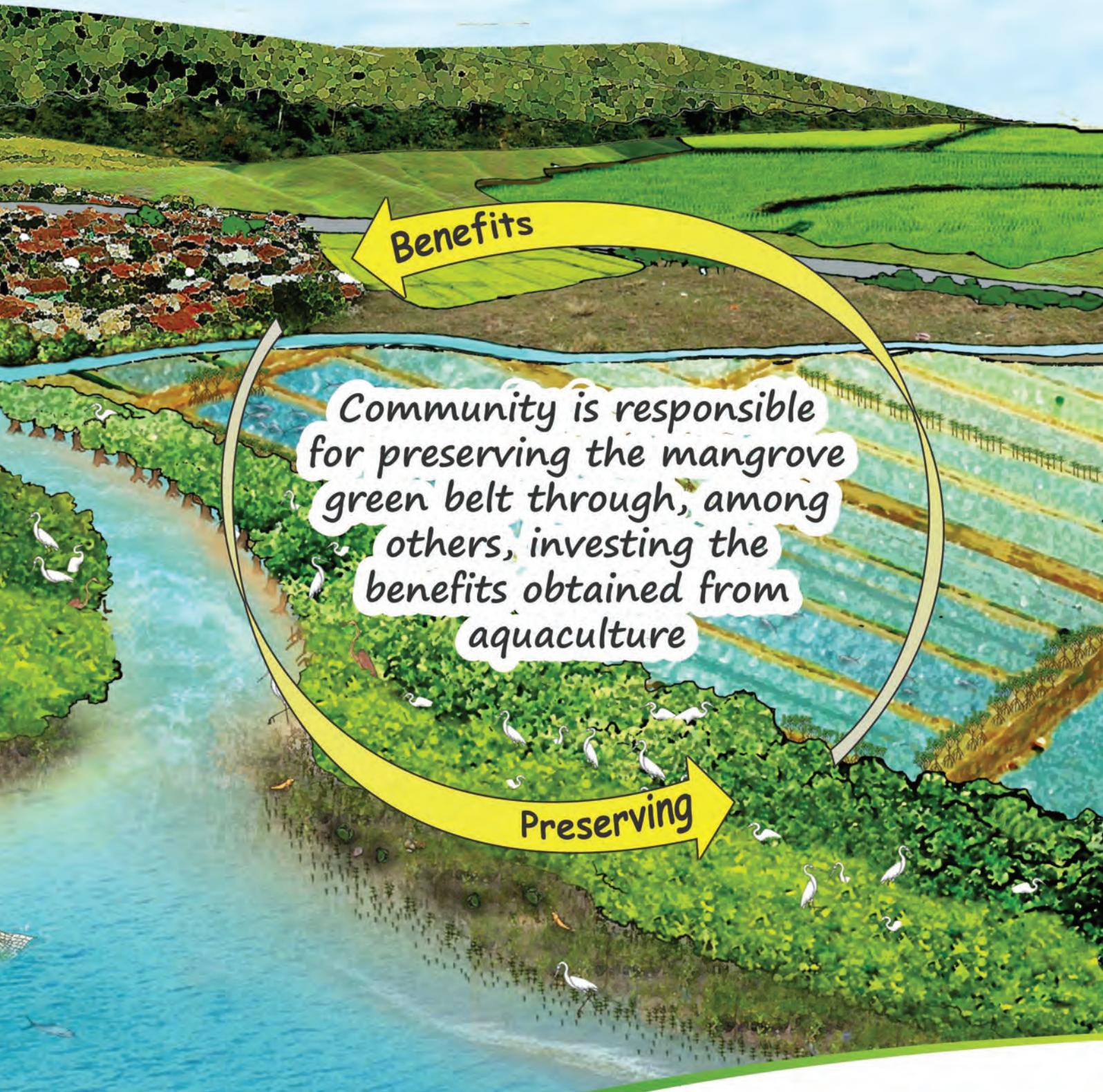
Biodiversity resource



Education & ecotourism



Greenbelt



Benefits

Community is responsible for preserving the mangrove green belt through, among others, investing the benefits obtained from aquaculture

Preserving



Deltares
Enabling Delta Life



WAGENINGEN
UNIVERSITY & RESEARCH



Witteveen Bos



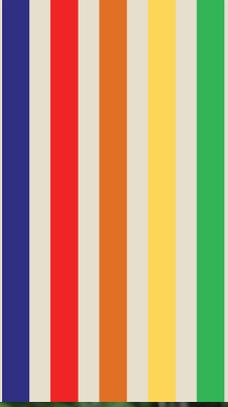
Wetlands
INTERNATIONAL



UNESCO-IHE
Institute for Water Education



Fakultas Perikanan dan
Ilmu Kelautan



*a journey for
a thousand smiles*

STORIES OF RESILIENT PEOPLE

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