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*Cara Kami Beradaptasi pada Perubahan Iklim*  
*'Pembelajaran dari Kefamenanu dan Lembata'*



*Praktek pembuatan pupuk organik di sekolah*

# *How We Adapt to Climate Change*

*"Learning from Kefamenanu and Lembata"*



# How We Adapt to Climate Change

*"Learning from Kefamenanu and Lembata"*



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# 1. “The Challenges in Building Disaster Awareness”

Colonel (retired) Markus Sidhu Batafor - Head of Bina Sejahtera Foundation, Lembata.

In 1980, Lembata Island, located in Solor Islands, District of East Flores and Alor, East Nusa Tenggara (NTT), experienced severe drought. The savannah in the island was often withered, turning yellow, and dried out. The drought was worsen with the lack of clean water. The lack of clean water and the drought had affected the public health. Seeing the condition, Colonel (retired) Markus Sidhu Batafor, staff of Electronic Communication Dept. Of Deffense and Security, Jakarta, when returned back to Lembata to spend the rest of his life in his hometown after retirement then set up Bina Sejahtera Foundation (YBS) which initially focuses on clean water provision.

For two years after that, Colonel Markus and Ben Mitchell were trying to develop **hydraulic water ram technology** which utilises the stream in Bakalerek village, Nubatukan, Lembata. The pump was able to pump water from 80 meters below the ground to the village. Now, the people of Bakalerek are able to enjoy clean water. Apart from those two villages, the usage of hydraulic water ram technology was also developed in Waipukang Village and Tanjung Village, Sub-District of Ile Ape. For Colonel Markus' hard work, the Governor of NTT from 1993-1998, Herman Musakabe, awarded third class gold ring on December 19, 1995, as a reward in the development of clean water in the villages.

The year 2005 became the first year YBS joined in on disaster management issue. Their main goal is to raise people's awareness in the potential disaster that surrounds them, and how to identify or make a program to reduce it.

YBS started socialising the program in 15 villages and 16 schools all at once. **“It's very important to involve teachers and students because schools are the source of knowledge and information in the villages,”** said Colonel Markus. The importance of disaster issue should be raised, YBS suggested Bupati Lembata to form District level Body which will focus on disaster.

The passing of the act No. 24/2007 about disasters, which required the existence of disaster management agencies from the national level to regional level, pushed Bupati Lembata to pay attention to disaster issue. Bupati Lembata finally passed regional regulation No. 4/2010 about the formation of BPBD, as one of task force of government agencies' working unit at province level (SKPD) the regency of Lembata in 2009. YBS kept advocating to form the working group of disaster risk reduction (DRR) which was led by government officials from Kesbangpolimnas office.

The struggle is not over yet for the YBS. BPBD's internal problems can be considered an obstacle in the implementation of tasks, such as retire age of BPBD chief, the high mutation staff, and lack of training for staff so that an understanding of the issues of disaster is still minimal. Not only a matter BPBDs, coordination and integration of DRR into development plans in the district is also a problem. YBS is still hoping that when awareness of the importance of disaster management issues is reached, in order to save relatives and livelihoods, in order to build a better future.



## 2. “Our Village has Become Pilot Village”

Paulus Demo - The Head of Lerahinga Village, Lebatukan, Lembata.

On March 14, 2013, we had floods. It was the biggest floods I have experienced, perhaps since 30 years ago. Started out with landslides in several parts of the river around 2 pm due to the heavy rain that had been going on for the whole day. Then approaching night, river was overflowing and the water reached to the village. My house was flooded. The stones from the mountain washed away through the river onto the village.

I do not know whether the cause of the great flood is climate change, but since the last few years we are facing a shifting seasons. Usually we plant in January, as the rain began to fall in November or December of the previous year. However, in recent years the rain often fell in April this year even until the end of May. Another disaster that quite often happens is that a hurricane or heavy winds that occur every year, causing crops damaged.





In the beginning, Plan came with focus on health and child education. They taught us how to make a school garden, love the environment, and training for disaster anticipation. The people were given training in related to disaster risks, and they formed disaster preparedness team. Later on, we'll agree on the **signs that indicate disaster**, perhaps using *kentongan* (traditional siren made of bamboo).

There has been a lot of changes we made with Plan, such as houseyards are now being taken care by village groups that take care village **food security**. These groups are taught how to maintain food security for toddlers, eggs are being handed out to mothers and 1-2 vegetable trees to be planted in their houseyards improve the children's nutrients.

I also required the people to make **biopores**, so there was water got stuck because it got into the biopores.

For water supply, there are two big water container that we built on our own, and lately we could fix installation like water pipes in the village with Plan financing us. In order for us not to always depend on Plan, everyone who use water must **pay monthly fee** around Rp 1.000. This fee is being used to maintain water installation and the management is run by Water Management Organization (OPAM) of Lerahinga



This **DRR Forum** in Lerahinga village has been going on well. In the last floods, they were looking for a safe evacuation place and some of us contacted BPBD. The village disaster preparedness team set up public kitchen. They already understood their tasks because we have briefed them before. The children were engaged and participating in the forums, since Plan facilitates the Indonesian Red Cross first aid training by the children.

We have not been trained how to map our village boundary, so we were not able to identify any potential resources in this village and its location, including the potential for disaster. We heard the Indonesian Red Cross will work into Lerahinga through Sibat program or Community Based Disaster Preparedness. The program will train 30 people from our village as disaster village volunteer and they also will train us to do mapping, potential capacity that we can develop and the potential disaster so that we can find solutions to reduce the impact in the event of a disaster.







### 3. “The School Children were the Pioneers”

Rafael Suban Ikun - The Head of Dikesare Village, Lebatukan, Lembata.

It all began in 2006 when organizations like Plan entered Dikesari Village and started health and education program. Our village also had disaster risk reduction program (DRR), children based, and disaster preparedness. We were taught how to raise public awareness to disasters, and how to handle fire.

The most common disaster is fields of fire because the slash and burn method, as well as hunting of pig and deer. These hunters burn down the grass, and that causes the fire to spread. But it was back then, now the fire wouldn't spread to the village because many of us planted plants that can resist the fire spread on our houseyards. In addition, because our village is directly adjacent to the sea, the ocean waves and the wind kept crashing the village with more powerful force than it was 10 years ago. Even a palm tree between village and sea barrier now been shifted far out to sea.

We haven't had many floods over here. We have **fixed the sewers and culverts on our own to anticipate the floods.**

Beside the intensity, rain period also change. Actually, we also have some **traditional knowledge** sign to see if the rain is going to fall. If yams have grown out of the ground and the ground is cold already, then it means rain is falling down. Another one would be the sound of birds or that is already on the west, but it goes back on the center, then it is a sign for farmers to get ready to plant their crops because rainy season is coming. But nowadays, it's really hard to find these tell-tale signs as the season has changed.

before knowing about DRR, we didn't do anything to handle the danger of abration and erosion on the beach. Then, around 2006, Plan came to Dikesare Village, introducing various health, education, and climate change programs. They made SD Katolik I as their pilot project, followed by TK Katolik I and SMP I. They gave the children many trainings to motivate and encourage. Gradually, we see those **children have various activities on the village.**

Children also did **reforestation** in several areas, like near the school and on the shoreline, planting *nimba*, *trembesi*, mahogany, and teak trees. We planted trees with longer lives so that will survive through drought and be a canopy for the village. They also joined up with the village people, planting trees on the spring up on the hill.

In the village meeting, **children were often invited to point out their opinions.** One of their sugestion is to instal street lighting facilities to illuminate the villagers who come home at night. In the village Dikesari these **children has been a pioneer for DRR program.**

Papan informasi penanganan kekerasan terhadap anak di Desa Dikesare, Lembata, NTT @iggm





## 4. “Trees are Important to Prevent Erosion”

Tatriela, 15, SMA Lewoleba.

Tatriela has been joining reforestation program since 2010 when she was still in junior high school (SMP). She was introduced to the environment and disaster risk reduction program by Plan volunteers who came to Dikesare.

Along with her friends from several villages, she was joined in Peer Counselor Group, a group of children which has various activities, like cultural, sport, and environment related activities. Typically, this group consists of 15 children, range from elementary school (SD) to SMP from several hamlets in Dikesare Village. This group will go around the village, helping senior citizens, like widows, to do their laundry, make sewer around their houses, or help them build a place to do their dishes. “Since we joined the trainings about climate change and environment, we are **more confident to help people in the village.**”

She talked fluently about trees and the effects on the surrounding environment. “Trees are important to prevent floods and erosions because they absorb rain, they also can hold the ground through the roots,” she added.



## 5. “Our Voices are being Listened to by Adults”

Elisabeth, 14, SMP I

Elisabeth is really good at making speeches about environment. Here are some excerpts from a speech where she was being lured to speak out what she knew about the effect of climate change:

*“There are many forests being slashed and burned in the villages, but not being planted again. If people leave them as they are, there will be deforestation. And when rainy season comes, there will be floods. The location of Dikesare Village is tilted, so water can reach the village at no time. We have to do reforestation to prevent floods. Trees can hold water and there will be springs coming out. Planting trees are done to protect the ground and for water supply. Reforestation is also important for trees can be the canopy of the village. Trees can also be utilised in so many ways, the woods can be used, also the fruits can be sold and eaten.”*

As a gift, in 2009, Plan took Elisabeth to attend a meeting in Jogjakarta, where she must report what has she been doing in the village. Plan representations from various locations in Indonesia attended the meeting. “I’m just telling all over again what I have been doing in the village, like reforestation program, dance workshop, and speech competition,” said Elisabeth.

Elisabeth recalled days before she joined in Plan program at her school. “Everytime the teacher tells us to come forward in front of the class, most of us are feeling reluctant and not confident to speak up.” Jawa admitted that she used to be ignorant about her surroundings in her home, let alone in her village. “If it’s dirty, we ignored it,” she added.

Everything changed after several trainings held by Plan on their school and by joining a dance workshop. “Now, we’re **feeling more confident, have the courage to step up, and are encouraged to clean our surroundings.**”





## 6. “Climate Change has Ruined the Harvest”

Ikun, 14, SMP I Lebatukan, Lembata.

His name is Ikun. He has been joining trainings in Bali to make biogas, liquid fertiliser, and how to give first aid in emergency situations, and climate change. Before, he also had training from Plan about the effect of climate change for farmers and fishermen in his village. Together with Tatriela and Elisabeth, he is one of the members in Peer Counselor group in Dikesare Village, Lembata.



What are the effects of climate change? “The effects of climate change in the village are failed crops, fishermen can’t sail, because fishermen heavily depend on the wind directions.” Ikun said that his village is getting warmer and rainy season keeps coming late. “Back then we could harvest corn crops on March, but now it’s still raining on May,” he explained.

Agreed by The Head of Dikesare Village, Rafael Suban, Ikun said more “Now, out of one field, farmers can only harvest one or two bags of corns, because there are many failed crops, the leaves turned yellow. That makes farmers feel hesitant as to when to start planting their crops. And it’s hard for them to look for information about rainy season from the government, because the communication from and to our village is quite hard.” Ikun added the **difficulty of reading the nature signs** of coming rain, as it is commonly used by the village elders. The changes have messed crop yield in the village.





## 7. “Lights for My School”

Ridwan, Madrasah Aliyah Nursalam Lewoleba, Lembata.

What did he get from training with Plan about the effects of climate change? “All the creatures on earth is living under a threat, so we have to anticipate the effects of climate change. After the training with Plan, **I know that the slash and burn method in farming, and also the smokes from runninh vehicles, aren’t good for our environment,**” said Ridwan, student of Madrasah in Lembata.

Then what are the things he already did? “We planted planted trees in the village and near the spring because it is very important. Trees can hold water in the ground in rainy season and make the water flow in drought season.”

“Before Plan, children over here didn’t gather and do or make something positive. With Plan, **we are heard, our voice matters.** We do have right. We do activities in the village where we can participate.” Ridwan also represented the children once in the village meeting to propose the installment of lighting in some important points in village and school. The proposal is then approved by the villagers. Now the village and the school became brighter, no longer pitch black at night time.



## 8. “A Spring for Us”

Rosalia Iba, The Teacher of SMP Satu Atap Unina, Luniup Village, Sub-District of Biboki Moenleu, Timur Tengah Utara, NTT

Reforestation doesn’t always have a good ending. In Luniup Village, about three hours from the town Kefamenanu, in between the harsh and dry hills of Timor mountains, the story ended in a sad manner.

Most of the 5.000 mahogany seeds planted by the village people and local school children didn’t make it, in fact 2.000 seeds planted around the school were missing because people ruined them. “When I came back from the church, I saw all the seeds have been removed,” said Miss Rose, the teacher of SMP Satu Atap Unina. She recalled how the children were very excited when planting those seeds, because they would think that mahogany trees will make their school looking good.

Miss Rose is one of the founders of Kuluan, a group consists of village people, male and female. The group was formed in 2007 when Plan first entered Luniup Village.

The aim of Kuluan is to plant trees in many locations in Luniup Village. Luniop get very dry in the drought season, and almost all trees wither. “There weren’t many trees that last long and there wasn’t cattle feed and water as well. But when rainy season comes, we always have floods and the river is always overflowing,” she said.



“It’s hard for us with during drought and rainy season. But once Plan entered our village, we get to plant trees,” said Miss Rose.

With Kuluan as a pioneer and the administrator for the seeds, the poeple of Luniup were invited to **save the village and their lives by planting trees**. The main location for this reforestation is the spring up in the hill in the north part of the village, and near SMP Satu Unina. Out of 3.000 seeds planted in 2012, some still survive and preserve the spring in drought season.





## 9. “The Magic Gamelina”

Susana Moenesi, A DRR Figure from Luniup Village

Susana Moenesi might be perfect to be nicknamed as Miss Gamal. Gamelina is the plant of *leguminosa* species from South America. The versatile plant made her as one of the figures of disaster risk reduction (DRR) program of Luniup Vilage.

When Plan was about to pick DRR figures in Luniup, they invited the villager to follow a training about disaster, and asked them to share what are the activities that can reduce disaster. Miss Susana chose *gamal* (*Gliricidia sepium*). “*Gamal* or *gamelina* can kill reeds, meaning it can kill useless plants”.

“The leaves can kill caterpillars that attack corn crops, because the leaves contain toxic. It can also be used as **natural pesticides**. It can also be used as cattle feed and to **hold erosion**. I’ve been planting *gamal* on my fields and making **cattle feed** out of them,” she explained.

*Gamal* has various benefits. *gamal* wood is good for firewood because they burn slow, plus they are strong and termites-proof. In several locations, the mixture of leaves, seeds, and barks are used for rats poison.

After being selected, Susana encouraged the villager to have reforestation program by planting bamboo in the river banks and mahogany in the spring. As DRR figure, Susana actively campaigns DRR awareness in villages by performing simple techniques such as cleaning the fields to prevent the fire in the field and proposes dam development to prevent flooding and landslides.



## 10. “IDR 12,000, Plan and a Story about Bananas”

Lukas Uskenat, The Head of Matabesi Village, Sub-District of Biboki Moenleu, Regency of Timur Tengah Utara, NTT

My name is Lukas Uskenat, former Head of Matabesi Village from 1994-2002. My grandfather and my father, both of them were also the head of this village. When I was still the head of this village, my family and I still lived up on the hill because we had a house and a field over there.

As the Head of the Village, my salary was only IDR 12,000, and I received it every three months and took it by foot for one day long. Although the salary was small, I wanted to serve and continue what my grand and parent have done.



Back then, our village was located up on the hill, so it was difficult for the government to give a public service for our villager. Then, the head of regency asked us to head downhill and open a new village here in Matabesi in 1980. The several first years were the hardest year. Because it is barren here, no water, and no plants would grow, except those with thorns. Meanwhile, on the hill, we could still open a field and plant with beans, coconuts and yams.

The second year after I was in the office, Matabesi Village received an aid from the project of improvement of the development of remote villages ( P3DT) to distribute water from the spring on the hill through pipes. We still use the method until now. In 1994, we started **planting bananas as our main food** and it grows well here. In 1996, we started digging wells and it turned out that those wells already had water in it. The water from those wells are used for our daily needs, like shower, drinking, etc.



When Plan entered our village in 2005, I suggested to cultivate bananas. At that time, we planted cavendish or *pisang ambon putih*, for better income. But that banana can only harvest once, and after that it will die. It's different with local species, because local species can harvest many times. Back then, we only ate boiled bananas, we never had fried bananas because it was so hard for us to get flour. In the droght season, we can get water from banana trees for our cattles. Every family here raised chickens, pigs and cows, and we can get water from the banana trees, and it can surely save water from the wells, in case we had a very long drought season.

**To get water for our cattles from banana trees, slash the stalk horizontally, make a V slice all the way to inner nucleus, and the water will flow.** Usually we can get more water from those who haven't harvested. Local species are also drought-proof, so cattles could also survive during drought season.





At the same time, the headmaster of SMP Satu Atap Teplasi asked 7th and 8th grade students to bring soil in a polybag to make the school garden. All polybag is filled with chilli, betel nut and eggplant seeds. "I made my own nurseries for short term plant, and we usually buy the seeds for the long term plants," said Katarina Sila, one of the teachers in SMP I Teplasi who also is a coordinator of the school garden program. All the seeds grow well in the polybags that were put on top of buffer wood in front of the class.

The fertiliser is of course liquid fertiliser that they have prepared in a big plastic bag and ready to be used. Adjacent to the school, they opened a small garden and water infusion. Uno explained how the water infusion works. Make a puncture the size of a needle on a used bottled water, fill up with water, and hold up with bamboo or wood. Put the bottle besides the plant and the water will drop slowly. "If we water the plant with a bucket, it's a waste of water. But using this IV methode, we can water the plant for 4-5 days using a bottle of water," he explained.

Behind the school, they planted betel nut, *gaharu* and *gala-gala*. According to Dion, betel nuts can be sold because there's always a constant demand from the people. Meanwhile, gaharu can be sold because the wood is rare and very expensive.

## 11. "School Garden to Tackle Climate Change"

Dionisiustinus, 15, 8th grade SMP Satu Atap Negeri Teflasi  
Maria, 14, 7th grade SMP Satu Atap Negeri Teflasi  
Bruno, 12, 7th SMP Satu Atap Negeri Teflasi

In SMP Satu Atap Negeri Templasi, Banain, Timor Tengah Utara, there are three students who have had several trainings from Plan about disaster, one of them in Bali. They are Dion, Maria and Uno, high confidence children but looks calm and shy.

Back from Bali, Dion, Maria and Uno applied **the skills they got at the training to make liquid fertiliser**. "The fertiliser is mixed with sugar, *gamal*, fresh buffalo manure and water, then it's kept for 14 days, and mixed again. After one month, we can take the water for the plants," they explained. Liquid fertiliser doesn't pollute the soil because the ingredients are all natural, easy to get, and don't cause climate change.





# 12. “Consuming Local Fruits to Reduce Emission”

Roswita (7th grade), Randy (8th grade), dan Rionaldo (8th grade),  
SMP Satu Atap Unina and Rosalia Iba, Teacher of SMP Satu Atap Unina

After experiencing the lost in planting seed, it didn’t deter children spirit along with teachers in planting *angsana*, *gamal* and pine at the school. Now, SMP Satu Atap Unina looks green and comfortable. In the outpost fence, they made a small garden, filled with papaya, eggplant and chilli. In the vacant space across the school, they have prepared a small patch, around 45 square meters, for the school garden. “We’ll sell the harvest for the school fund,” Rio said.

Wita, Randy and Rio had an answer why they have to make a garden to reduce disaster. “We have to **consume local fruits and vegetables to reduce climate change**. Imported fruits and vegetables have to use cars to bring them to the village, and eventually it will cause air pollution from the exhaust of the cars, and it will cause climate change. Furthermore, **having our own garden can reduce fields of fire**,” he finished.



# 13. “Betel Nuts Garden to Learn about Economy and Environment”

Katarina Sila, The Teacher of SMP Satu Atap Negeri, Teplasi, Banain B, Timor Tengah Utara



Banain A, B and C Village are very dry during the drought season, and it’s always hard to look for water. Spring also gets dried out during this time of year. In 2007, we suffered from a long drought. The fields got really dried that we couldn’t plant them with anything. We always plant papaya, banana, tomato and betel nuts in the school garden. The water from the wells are used to water those plants. We even added more garden in the back of the school. We can consume crops form the garden, or some children bring them home, and some crops can be sold for the school fund.

Back then, our schoolyard was barren, no trees or canopy trees. Then we made a small garden and made it green. We also have a small patch, 25 square meters, besides the school and around 100 square meters behind the school. It’s more than enough for children to **learn how to garden**.





In the beginning of every rainy season, we require students to plant a stalk of betel nuts. Betel nuts can make the environment **look green** and also can make an **additional income** because there's always a demand for them over here. We also planted areca nut. In Banain Village, one of the biggest expenses in a household is to buy betel nuts. 20 leaves of betel nuts cost IDR 2,000, 4 betel nuts cost IDR 2,000. People here like to consume betel nuts, especially during harvest and if they have extra money.

## 14. “In the Tip of Rattan, There is Jail”

Interview with Balthazar Suni, 43

Balthazar Suni decided to cross the border and become Indonesian citizen when East Timor (now Timor Leste) decided to be an independent country in 1999. He went back to Indonesia and became Banain B Village, his homevillage which is close to Timor Leste border, became a farmer and raised his three children.

“I can adjust myself with local agriculture because agriculture technique here is almost the same in Timor Leste,” he said. In 2001, he open his field, near his house. He also joined several NGO programs, Yafa and Anfeot Anak, and now he joined Plan.

In 2004, Plan entered Banain B through child-focused programs. “Plan taught us about children’s right, **that children have the right to speak up their opinions**,” he explained. Suni also added that some of the NGO trainings were also about women’s rights. “So, we have to listen to our wives and not make them to do what we want to do.”





That day, Balthazar was about to go to Kefamenanu to buy laptop for his eldest daughter who is now studying at Universitas Timor. He shared about the information he got from the training. Old people always said there's a gold on a tip of a rattan, because it can be used to teach discipline to children. But now, there's a jail on the tip of a rattan,".

When Plan entered Banain, Balthazar went to the training of organic agriculture and cultivation of long term plants, such as bamboo, mahogany, teak, mango, pineapple and breadfruit that are usually planted to prevent floods and erosions, and also to be consumed. Some were planted on people's houseyards and some on the riverbanks and spring. Most of those trees have grown out and worked out well. In Suni's houseyards, papaya and pineapple trees have harvested several times, but not the case with breadfruits, because it's only been two years. As one of the figures of disaster risk reduction program (DRR), he also built wells and water containers.

## 15. “Miss Provocateur of PAUD”

Rosina Kono, A Farmer in Banain C Village

Rosina Kono started her first encounter with Plan's program in 2005, through child-focused program of schools for early childhood education (PAUD). "I became their first teacher and was trusted to manage the fund Plan gave us," she said.

When PAUD first was introduced in Banain C, it wasn't an easy period because parents usually didn't want to let strangers be with their toddlers. "Usually, children play around their house and are being monitored by their parents, so it was very hard to convince their parents to let their children join PAUD." But she didn't want to take a no for an answer and kept convincing parents to do their own survey to PAUD and assist their children. One of her ways to convince parents was informing them that their children would be getting Bahasa Indonesia lesson. "I told them that children should live a better life than their parents. And by getting an early Bahasa Indonesia lesson, it can make them go into the path," she added.

"In the first year, there were only 7 children. But we kept going and we're sure that God would help us because we are trying to help others," she explained.

Once, their PAUD got an invitation to join a dancing competition, but they didn't have money to buy the costumes and pay their accommodations. Finally, parents and teachers donated money for our transportation. "We won the competition and everyone in the village knew it." That was the turning point, PAUD got more popular after that and parents start letting their children joining us.

Now, PAUD in Banain C has more than 10 children. In fact, several parents from neighboring villages also put their children in it. The welfare improvement has also improved people's awareness that **early childhood education is important** and they are willing to save some of their income to put their children in PAUD. Rosina was dubbed as Miss Provocateur of PAUD.

## 16. “Participatory Mapping to Reduce Disaster”

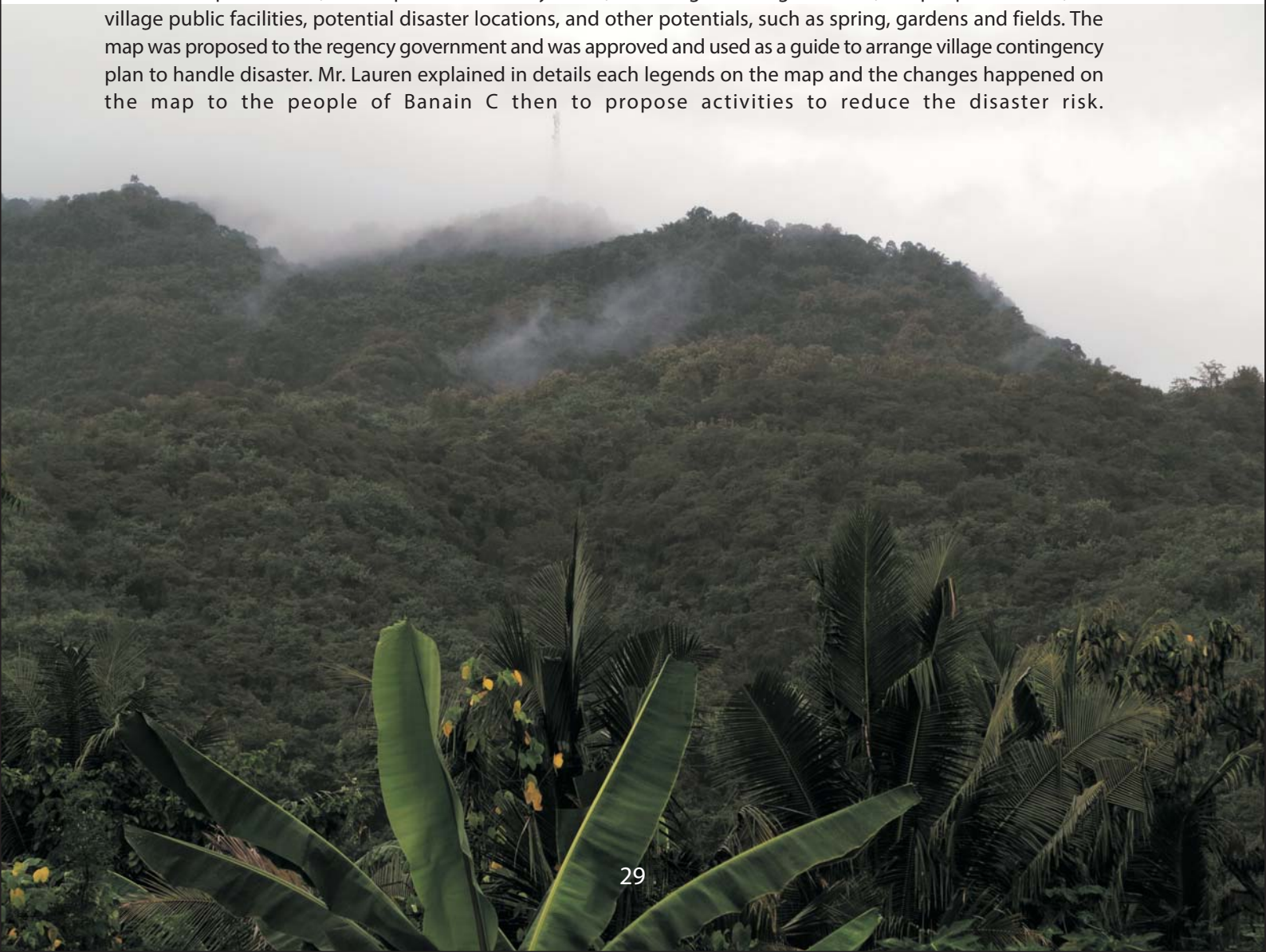
Laurentius Sikik, Head of Section, Banain C Village

there is Laurentius Sikik, hold position as Head of Section Administration in Banain C Village as well as Fotbena agricultural group member, formed in 2008, and has 26 members and chief of management of child protection group (KPAD).

One of KPAD main duty is socialize children's right to the people of the village. "At first, we didn't know that our children also have right, so do women," he said.

Mr. Lauren also became the management for disaster risk reduction program (DRR) in Banain C Village in 2008, and was focusing on the reduction of climate change effects, with one of activity is to do participatory mapping of potential risk in the village.

With the help from Plan, the map was successfully made, including the village borders, the people's houses, the village public facilities, potential disaster locations, and other potentials, such as spring, gardens and fields. The map was proposed to the regency government and was approved and used as a guide to arrange village contingency plan to handle disaster. Mr. Lauren explained in details each legends on the map and the changes happened on the map to the people of Banain C then to propose activities to reduce the disaster risk.





# 17. “The Solution is Called Food Labor-Intensive”

Plasidius Wada, Deputy Head of Cultivation Section Dept. Agriculture and Farming, Regency of Timor Tengah Utara

“For dried out lands in Kefa,Êwe estimated around 60% is still using the slash and burn method. The problem is, every head of household in NTT has at least three fields. For example, if this year they slash all the trees in one field, they expect a lot of ashes from those trees, they will use the ashes as fertiliser, and if the harvest is good, they will stay for the next year and the year after as long as it’s still good, but if it isn’t good, they will move and find another field for the next year. That’s the process.

High rate of slash and burn system applied leads to high rate of forest fire. Around five or six years ago, Dept. Agriculture of the Regency of Timor Tengah Utara made a movement to **save up fund to make terracing system**, so that farmers don’t have to move or rotate to another new fields. The movement was called permanent field business (Ubuntap). In that field, we planted *lamtoro* or *gamal* trees. Those trees wither a lot of leaves and can be used as fertiliser. After four years doing Ubuntap, those farmers felt comfortable with this method and the result was very good. But not many farmers do this Ubuntap method, because not many of them have witnessed the success.

Another disaster in Timor Tengah Utara is locusts outbreak every five years, like in 1992,Ê1997,Ê2002,Ê2007Êall the way untilÊ2008. The last outbreak was the biggest and the worst because lamost all corn crops in Timor Tengah Utara ruined. Many people associated the locusts outbreak in 2008 with the effect of climate change, because all of a sudden millions of locusts stormed all corn fields in Timor Tengah Utara at the same time.

Floods always happen every year and the number keeps increasing because deforestation keeps happening in all areas, and as an impact, no trees can prevent water erosions. **When forest still exists, no flood is happening.**

Currently the Department of Agriculture in cooperation with the NGO Plan Indonesia, Yabiku, YMTM, Yafa and Bina Swadaya in poor rice program or distributed free of charge, with conditions that farmers must make *terasiring* minimum of 25 acres in the village every year. The maingoal is to teach people making ubuntap by providing them rice first. As well to keep our environment so that no disaster in the future. Together with Plan, we work to build *bronjong* and planting bamboo to prevent it from landslide aroundf the permanent garden.

Our difficulty to socialize programs related to disaster risk reduction and food security is a community mental always surprised if there is a problem, but stay calm in a normal situation as if disaster will never happen.



So people are not familiar with disaster preparedness, because they keep doing things as usual, including behavior that could lead to disaster such as slashing and burning. I suggest to NGOs like Plan can invite more people to see examples of successful Ubuntap in various locations, so that more farmers are turning to permanent gardens.