



Bina Tani  
Sejahtera



EAST-WEST SEED  
CAP PANAH MERAH



2020

# ANNUAL REPORT

YAYASAN BINA TANI SEJAHTERA



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Meet YBTS Teams	



We are happy to share our 2020 annual report. The data and information, including the info-graphics are all our operations in 2020, unless explicitly mentioned. We welcome your feedback on this report by emailing us on [info@binatani.or.id](mailto:info@binatani.or.id)



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# 1

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MESSAGES FROM THE BOARDS



## MESSAGE FROM Joost Pekelharing

Vegetable farmers always know how to adapt! It is in their nature, being continuously exposed to challenges from the weather, the disease pressure in their fields and the market fluctuations. We should therefore not be surprised that the Covid-19 pandemic, while playing havoc on the economy, has not much impact on the productivity of the Indonesian vegetable farmers.

Fortunately, also the requirements of the farmers, quality seeds and other inputs have kept up with the strong demand.

Farmers are at the center of our services, and it has long been realized that knowledge and good quality seeds must go hand in hand to improve harvests, and so too, the livelihood of farmers. It is in this regard that we are proud of the YBTS team and the competent technical field officers who work shoulder to shoulder with the farmers.

We have been seeing remarkable impact from our transferred knowledge on improving the lives of farmers and their families. Not just in terms of more efficient vegetable production practices, but also in developing better communication about seasonal weather, market information, and offering our advisory services. It is remarkable that during the pandemic, Yayasan also made use effectively of delivering information

and knowledge through social media and digital channels to reach and communicate with farmers with smartphones in rural areas.

We would like to thank our esteemed partners – vegIMPACT NL Program & G4AW SMARTseeds Consortium – as we are going to complete respected multi-year partnerships by incoming 1<sup>st</sup> quarter of 2021. We have served and reached out to more than 45,000 farmers during the last 3 years of the vegIMPACT NL program. The SMARTseeds information service has been smoothly integrated into and powered by SIPINDO Apps, delivering information and knowledge on good agricultural practices, weather and climate and vegetable market information to more than 76,000 users since 2017.

We also thank gratefully for our partners and donors Cordaid and Anton Jurgens Fonds, KARINA Yogyakarta in hoping for further extension of our long-term partnership, the Resilience and Livelihood project.

At the Yayasan, we look forward to continuing our work with our dedicated partners and donors on projects to improve knowledge, productivity, and livelihood in the farming communities we serve.

**Joost Pekelharing**  
Chairman, Board of Trustees,  
Bina Tani Sejahtera Foundation



“  
 Through knowledge transfer performed by YBTS, EWINDO sees more outreach extends to less developed areas where farmers need helps on technical supports in improving vegetable production by smallholders farmers  
 ”

**GLENN PARDEDE**  
 Managing Director  
 PT. East West Seed Indonesia

**Farmers Prosperity**

This is the goal of PT East West Seed Indonesia (EWINDO), the producer of CAP PANA MERAH vegetable seeds. High quality seeds are our capital in contributing to the welfare of farmers and at the same time promoting vegetables consumption.

Farmers' Best Friend is one of our company values. We are close to farmers to guide and encourage them to be successful. We overcome challenges together by visiting and giving them excellent services.

Through YBTS, an extension arm of the company, EWINDO is able to express and signify its commitment to provide excellent services for the prosperity of farmers. In addition to that, EWINDO's support can be extended to farmers in remote areas and less penetrated markets. Through knowledge and technology transfer, we are committed to improving the capacity and productivity of farmers working on their farms. An improved livelihood will feed their lives sustainably.

YBTS has been growing as an extension arms of EWINDO to serve more farmers especially in areas where access to technical accompaniment

or support is lacking such as eastern part of our country and also in less developed areas for vegetable production.

YBTS has been enjoying robust supports from EWINDO resources and accumulated knowledge and information on good vegetable farming practices. Moreover, provision of high quality seeds is of most importance in making knowledge transfer program is being successful reaching and benefiting smallholders farmers.

Thus, with much support from the company and the well development of organization with good reputation and achievements, the benefit for farmers can be much enlarged and scaled-up.

We fully support YBTS in their continuous effort securing the livelihood and prosperity of farmers.

Yours sincerely,  
**Glenn Pardele**  
 Chairman, Supervisory Board  
 Yayasan Bina Tani Sejahtera

**Board of Caretakers**  
 Yayasan Bina Tani Sejahtera



**EDWIN SANZO SARAGIH**  
 ( Chair of Caretakers )

**FRANSISKA FORTUNA**  
 ( Secretary )

**KURNIAWAN SUTEDJA**  
 ( Treasurer )

In 2020 we worked with thousands of farmers. Each farmer had a story to tell how a change is happening through of knowledge transfer. Selfina Bere (20), is one of the young women farmers in Ajaobaki Village, Timor Tengah Selatan District in Nusa Tenggara Timur Province, Indonesia. For almost 2 years now, she has learned that vegetable farming is of great potential to get income. Previously, Selfina had been working for sometime as a shopkeeper in Kupang, the province city (130 kilometers from the village) after graduating from high school. It was her mother who called Selfina back home to the village. Initially she helped her parents on the farm, and she also learned and practiced about seed selection and crop management with our field staff. She became more interested in farming and did her own planting of tomatoes and got a good harvest and some cash. Since then, her desire to continue work in the city has receded. Farming is better, and she has a lot of other crops as choices to be planted. When compared to working in a shop in the city, she now earned at least 3 times income from vegetable farming.

YBTS served 2,602 young farmers through a series of training on GAP (good agricultural practices) and Selfina is one of them. They learn and practice together. They try and never give up, despite challenges & difficulties. For them, nursery activities are fun. Why should one go to the city? Farming in the village is profitable. With consistent and continuous technical support, it is

our belief that in a decade or so more and more youth would join their fellow farmers in rural areas engaging livelihood activities in farming.

In 2020 we're truly grateful that we thrived in the difficult year due to the pandemic of Covid-19, and could still serve farmers and support them succeed in vegetable production, serving more than 18,000 smallholder farmers through various Knowledge Transfer field activities. We did also make use of social media channels to reach farmers digitally even to rural areas. The farmers stay productive and healthy.

We dedicate this report to all our staff in Yayasan as their hard work has been really paying off and fulfilling the vision of Yayasan Founders, Pak Simon N. Groot and Pak Piet Mazereew.

We thank the Board of Trustees Pak Joost Pekelharing and Pak Joost Gietelink and the Supervisory Board of Yayasan chaired by Pak Glenn Pardele for full support and guidance. And our gratitude to our most esteemed partners and donors: vegIMPACT NL, KARINA and Cordaid, Anton Jurgen Fonds, ICCO Cooperation, Yayasan Cinta Papua, and PT Lautan Luas for the great partnership and support.

Thank you.  
**Edwin Sanso Saragih**  
 On behalf of the Yayasan Caretakers



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# 2

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ABOUT YAYASAN  
BINA TANI SEJAHTERA

Bina Tani Sejahtera Foundation (YBTS) works to assist farmers' livelihood improvement. The foundation establishment is a part of PT East West Seed Indonesia (www.panamerah.id) strategy for corporate social responsibility.

## HOW WE CREATE VALUE

### OUR VISION

We believe in high quality vegetable seeds for better living. With this vision we assist improvement of farmers livelihood and care also about social and environmental issues.

### OUR MISSION

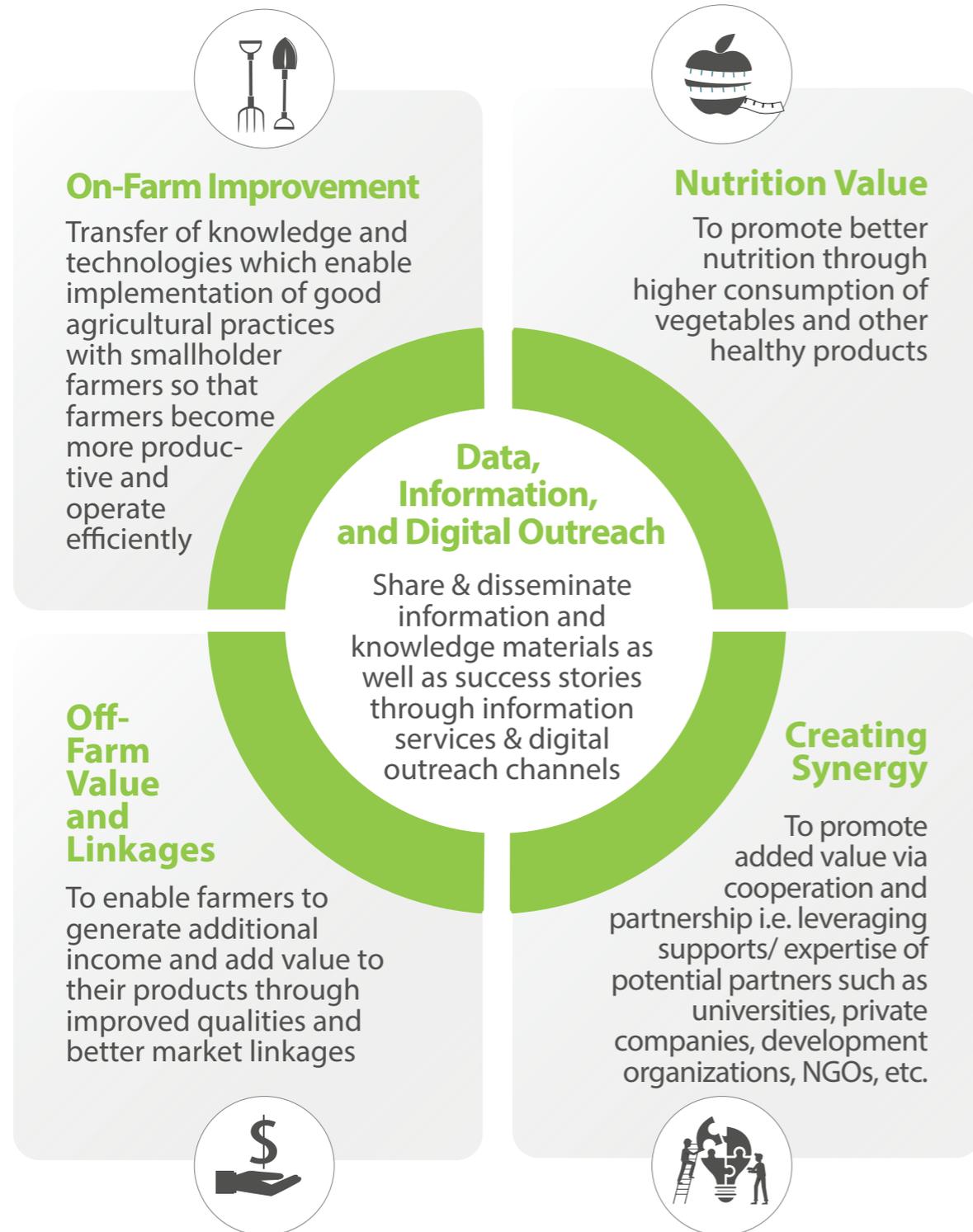
In realizing the vision, YBTS provides knowledge and technology transfer, agriculture extension and consultancy services, and conducts training on agriculture practices and agribusiness. In this regards, we develop program based on potential for improvement of smallholder farmers' livelihood in eastern parts of Indonesia and less penetrated markets. YBTS, founded in April 2009, targets small-holder farmers especially those with limited access to the technical assistance and extension services. We put great attention and provide services in sustainable use and management of natural resources and environment.

## WHAT WE DO IN KNOWLEDGE TRANSFER

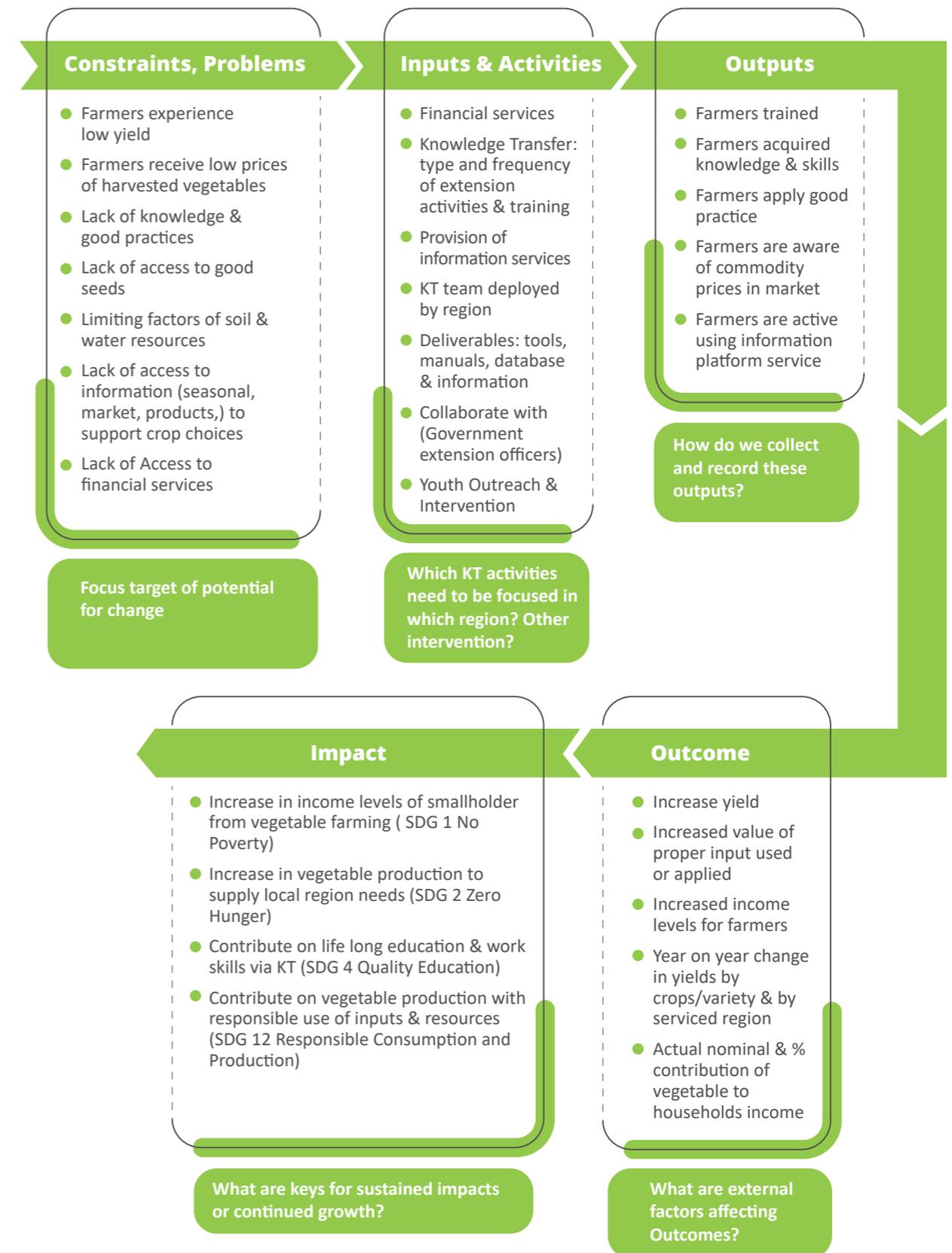


*Knowledge Transfer fosters learning and practicing, those are very important for progress.*

## TACTICAL APPROACH



## YBTS Impact Chain & Indicators





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# 3

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OUR SERVICE DELIVERS  
WITH IMPACTS

## YBTS Working Areas in 2020



Our focus areas in Nusa Tenggara, Moluccas, Papua and less-penetrated markets are generally characterized by :

- Low level of vegetable production
- Traditional farming practices
- Farmers' lack access to GAP knowledge & information; also lack of access to input market (quality seeds, fertilizers, etc) & outputs markets
- Infrastructure & transportation are developing



Our works aim at encouraging farmers to acquire GAP knowledge and skills.

Farmers practice GAP on their farms. They will get higher yield and increase household income.

Farmers repeat cultivating good quality seeds with GAP. They manage farming with good calendars.



## Farmers are at the center of our service

- Our KT program reached **18,119** farmers across Indonesia
- By adopting good quality vegetable seeds and GAP (good agricultural practices), farmers increase productivity and income
- Supports of agri extension officers, regent, police, public figure even more to motivate farmers

Actual performance KT activities and events 2020	
479	Demonstration plots / number of varieties
880%	Average ROI (return on investment) from demonstration plots
666	Training events
33	Farmers field days and expos

CROP	No. of plot (demo)	Average ROI
Tomato	101	1019 %
Chili Bird type	51	1015 %
Shallot	28	463 %
Cucumber	23	546 %
Bitter Gourd	22	618 %
Yard Long Bean	16	336 %
Sweet Corn	15	378 %
French Bean	13	891 %
Chili Curly Type	12	913 %
Caisim	11	961 %
Watermelon	10	631 %
Cauliflower	8	301 %
Chili Big Type	8	1712 %
Eggplant	8	622 %
Cabbage	5	863 %
Kangkong	5	2202 %
Melon	4	1294 %
Broccoli	2	1542 %
Pakchoy	2	627 %
Pumpkin	1	519 %

## Crop demoplots: knowledge, practices and seeds value

479 Key Farmers

345 Experienced

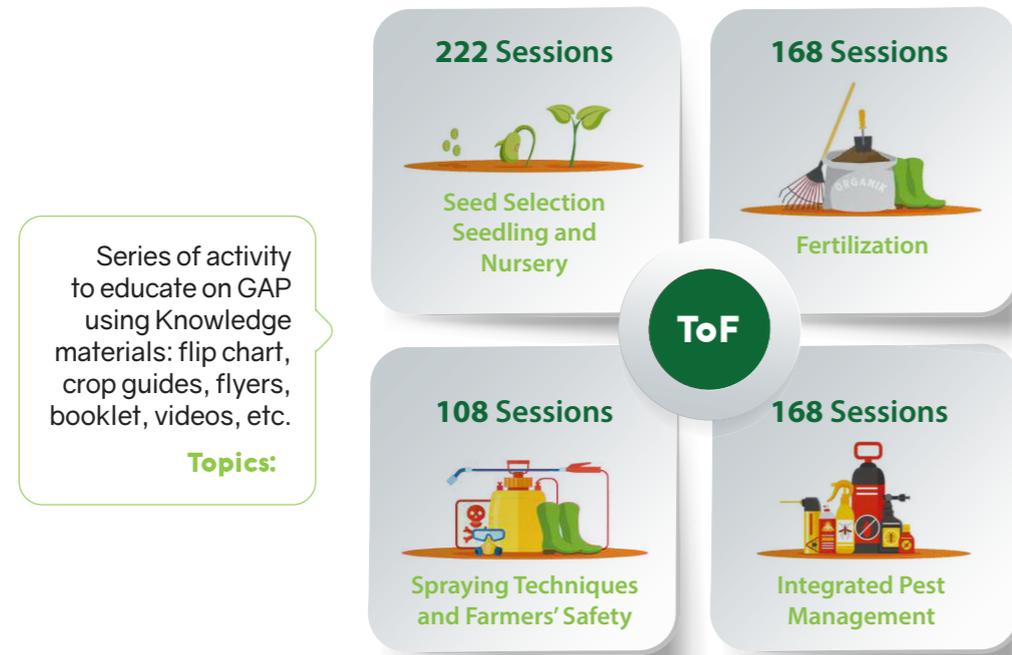
261 Male 84 Female

From demoplot, key farmer gets actual profit (avg.) Rp. 11,974,123

Return on Investment (RoI) for several crops:

## TRAINING OF FARMERS

to transfer GAP knowledge and facilitate improved farmers



### Training of farmers with health protocols during the Covid-19 pandemic



## On-site & Virtual Farmers Field Day

### Success is well shared and displayed

- 33 Field Days and Expos attended by 3,478 farmers (avg 105 per event)**
  - Bigger demoplots various crops with KT messages about seeds, seedling and good practices (raised bed, fertilizers application, drip irrigation, etc.)
  - KT materials distributed
- Positive impression & feedback**
  - Farmers, local leaders, women
  - Local Government (the Regent, Agriculture Head, Extension staffs)
  - Sometimes joining in from local agri-kiosk and collectors
  - Promote digital information and social media
- 345,581 View, Likes, Share**

YBTS posts in FB, YouTube, IG, Website, incl. materials disseminated through field expos

#### FARMERS FIELD DAYS

- Neighboring farmers (40–60 farmers) are invited to visit demo plots to learn and observe GAP (cultivation technique, pest and disease identification, detail on crop & varieties)
  - In this event, key farmers share their own experience or success stories with others.
  - Showing one crop
- to facilitate key farmers sharing experience and success from planting crop(s) to fellow farmers and other local farmer groups (FG)

#### EXPO

- Generally more than 150 farmers and guests attend an expo
  - 33 FFDs and Expos had been successfully held in year 2020
  - Showing minimum of three crops
- to promote technological packages (seeds, etc.) to wider farmers and public network, printed and digital materials are shared; and to celebrate farmers/FG success

## Indirect Outreach through digital channels

### SOCIAL MEDIA

 @yayasanbinatani  
 @vegIMPACTNL  
**17,418** Followers  
**473** Posts  
**345,381** Engagement  
 Staff Account  
**52,534**  
 Like, comment, and share

 @vegIMPACTNL  
**1,894** Followers  
**203** Posts  
**13,072** Engagement  
 @vegIMPACTNL  
**1,260** Subscribers  
**870,806** Views

### EVENT ONLINE

 6 Times Webinar  
 via Zoom, and  
 google meet  
 via Zoom /Google Meet  
 Personal account staff:  
**943** Participants  
 YBTS via Zoom:  
**160** Participants  
 YBTS via Live FB: **833** views  
 vegIMPACT Live: **3,675** views

 **AUDIO**  
 12 times broadcasted  
 Total listeners: **28,919**  
 3 Podcast program  
 Total listeners: **137**

### FARMER SERVED

 (technical) via Call,  
 WA person and group,  
 and Messenger:  
**1,284** Persons

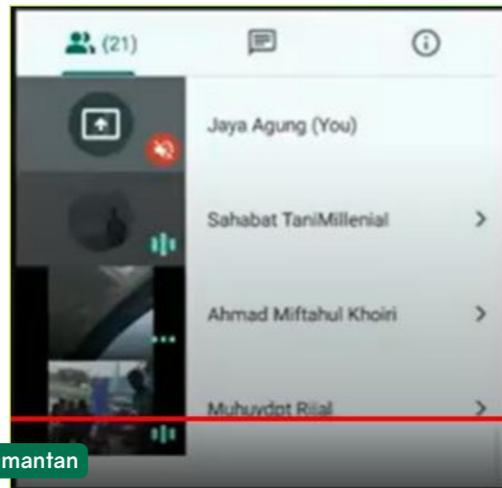
 **PRINTED MATERIAL**  
**12,368** distributed

 **WEBSITE**  
 binatani.or.id  
 Visit: **5,673**

### Farmers Field Day Online



Virtual Field Day in Tenggarong, East Kalimantan



### Farmers Field Day On-site

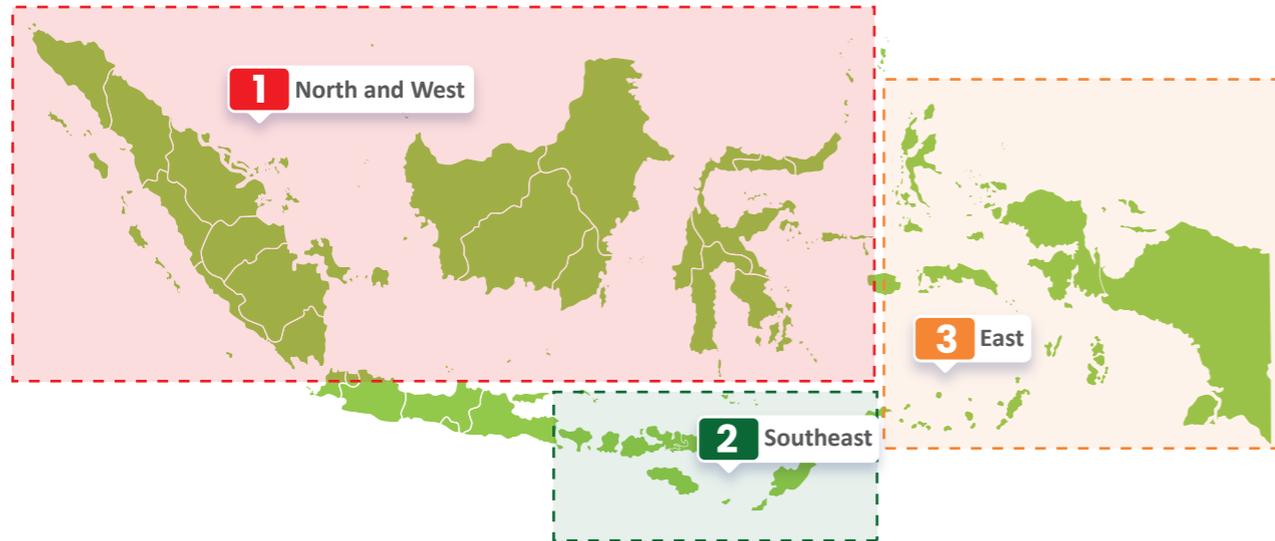




# 4

KNOWLEDGE TRANSFER  
PROGRAM RESULTS

In 2020, we run KT program in 3 clusters of districts namely east, southeast, northwest reaching and serving the farmers to achieve better production and income



- Reaching to small-holder farmers
- Farmers to access good quality seeds and GAP advices
- Farmers acquire knowledge and skills
- Farmers adopt & adapt good practices
- Farmers obtain increasing crop yield and income
- Farmers experience & enjoy better livelihood

## Health Protocol in Our Activities

In our KT field activities, we focused on the main activities of Knowledge Transfer which include the creation of demonstration plots, Training of Farmers (ToF), Training of Trainers (ToT), distribution of learning materials, and the making of Field Day.

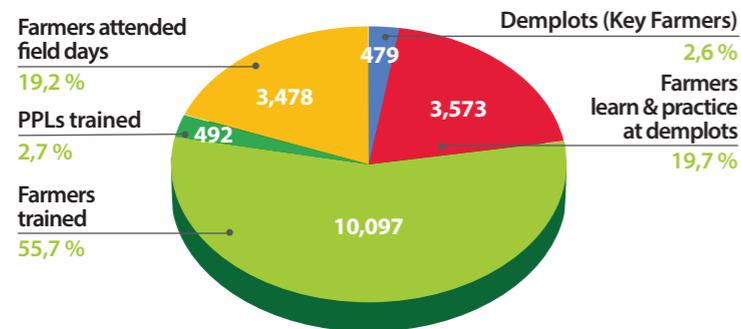
Overall KT program was made success, as we synergized with Projects implemented in YBTS i.e. vegIMPACT NL, Integrated Livelihood (AJF phase 3), and also collaborated with local Governments and Partners.

Due to Covid-19 pandemic, we conducted several online learning and virtual field day.

And we deployed health protocol measures in our field activities.



## Direct Outreach Overview



In total, we served 18,119 beneficiaries through various KT field activities

- 10,097 (55.7%) farmers were trained in training sessions
- 3,573 farmers practiced and learned at demoplot sites managed by 479 key farmers
- 3,478 farmers attended field day events
- 492 PPLs (Government extension officers) are trained by TFOs.

KT process through demoplots establishment offered a wide range choices of crops & varieties for our key farmers. The key farmers selection of crop and variety was also based on local market needs & potentials

No.	Crop	Number of demoplots
1	Tomato	113
2	Chilli bird type	63
3	Shallot	33
4	Cucumber	26
5	Bitter Gourd	25
6	Yard Long Bean	25
7	Sweet Corn	18
8	French Bean	14
9	Chilli Curly Type	13
10	Caisim	11

Tomato, small chili, shallot TSS, cucumber, bittergourd and yardlong bean are most favourite crops selected by farmers

From 479 total demoplots,

- 21 kind of crops
- 65 varieties
- 316 demoplots were composed of the top ten crops

### CROP DEMOPLOTS facilitates learning and practice of key farmers & neighboring fellows

- KT program along with Projects (vegIMPACT NL & AJF Phase 3) in 2020 worked with 479 key farmers which 346 out of key farmers demo profile and data were recorded in KT Apps (72%).
- Average demo size is 506 sqm, this is aligned with the guidelines. Out of the 346 key farmers recorded, 24% were women farmers and 76% were men.
- Compared with the previous year (2019), this report showed an increase of 47% of all recorded data in Apps (72% vs 30%).



Tomato Servo F1 in Pak Silas' farm with proper Land Preparation. Biak, Papua

As the most favourite crop, from 89 completed data of tomato, we achieved the productivity 70% (1.58 kilo per plant) vs that of potential 2.32 kilo per plant. This picture showed our TFO in Sumba Tengah (Ady) with happy tomato farmer.



Everytime key farmers experienced a success harvest, it was reflected in his/ her farm contribution to household's revenue. The farmers enjoyed a very good return on their investment.

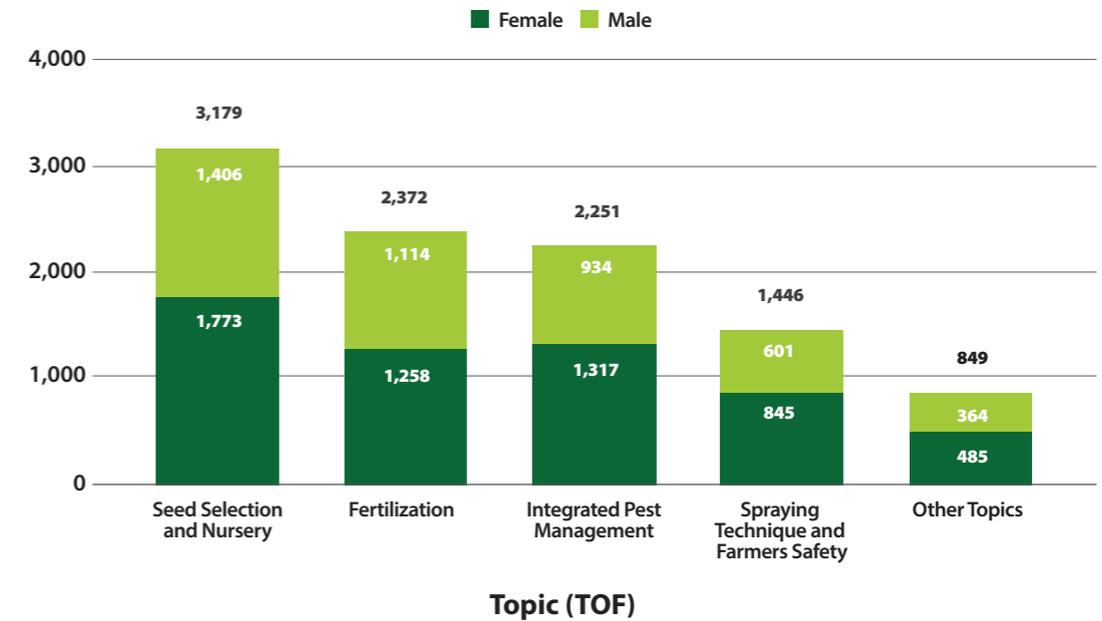
Farmers enjoyed a very good return on their investment, based on good practices performed on a unit of 500 square meters demoplot

Crop	Number of demoplot records	Cost (IDR)	Returns (IDR)	Returns (USD)	RoI (Return on Investmen
Tomato (all varieties)	89	1,666,135	13,563,108	969	714%
Chilli bird type	39	2,095,534	16,335,083	1,167	680%
Shallot	24	1,827,805	9,858,993	704	439%
Cucumber	20	1,871,558	10,153,074	725	442%
Bitter Gourd	18	2,291,344	14,096,113	1,007	515%

For instance, a farmer who planted tomato along with application of GAP (Good Agricultural Practices) gained 8 (eight) fold return to his or her investment on good quality seeds plus other inputs.



## Training of Farmers



- Participants of 10,097 farmers (Male : 5,678 & Female : 4,419)
- We conducted 4 ToF topics which is Topic 1 (Seed selection & Nursery) is the most topic attended by 3,179 farmers.
- As Indonesia continues to see a spike in Covid-19 cases, in 2020, we followed the local government protocol to limit the number of farmers who can gathered in a field meeting. We conducted training in smaller groups i. e. 5-7 farmers instead of 15-20. Also, with this setting we managed sessions of training in 2 to 3 shifts a day.



## Training of Trainer or Training of local Partners

In 2020, we delivered train the trainers (ToT) session served 492 PPLs (Government's field agriculture extension officers). A combination of class training and field exercise was arranged in a day or two.

We expected that the PPLs could disseminated and shared the information and knowledge they learned to other farmers. In this regards, we see a potential multiple effects in reaching out more farmers.



PPL in Morotai explained how to grow cabbage to the farmers.

## Farmers Field Day

- During the Covid-19 Pandemic, we held some Online and On-Site Field Day to connect with the farmers, include the demonstration of specific GAP and highlight the crop results.
- The On-site Farmers Field Day (FFD) was done in area where gathering the farmers in small numbers still possible or using the shift system under the Covid-19 health protocols.
- In areas with good internet connection, we conducted the Online FFD to provide the information to the Farmers through Facebook and Google Meet.
- We also did a collaboration with EWINDO Team and Lautan Luas to present the seed and fertilizer Information.
- From the FFD events, it is estimated that 2,500 FB users have watched the recording videos, 45 joined in Google Meet, and 1,935 joined on-site event.

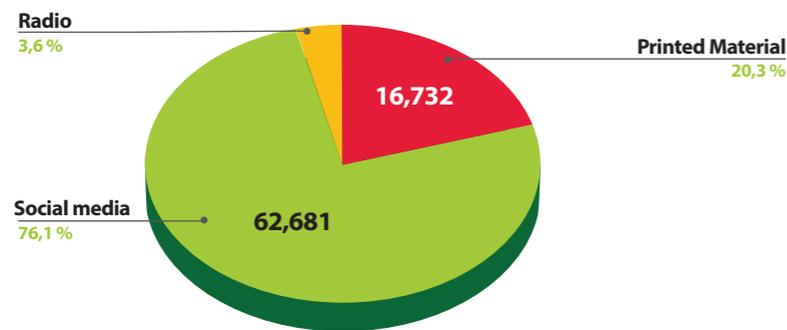


at least  
**2,500**  
Facebook  
friends



## Indirect Outreach and TFO Initiative

- Working with thousands of smallholders farmers is not easy. By the presence of internet and data connection in rural areas nowadays, we are able to reach them indirectly through Binatani and vegIMPACT NL social media accounts providing knowledge and information relevant with good farming practices. We also shared farmers' success stories.
- We received 62,681 view, likes & shares by indirect beneficiaries were recorded in our social media statistics. Moreover, our team in Biak also used local Radio stations to broadcast vegetable production session, 3,000 listeners were reached. Printed materials (16,372 copies) such as leaflets, brochures and booklets were also distributed to farmers.



**16,372**  
from printed material

**62,681**  
from social media views/ like (including IG, FB, Technical Call & Podcast)

**3,000**  
from radio

### TFO Initiatives : Social Media Post, Material Distribution, and Webinar

#### Webinar: Crop Nutrition, Live in Binatani FB



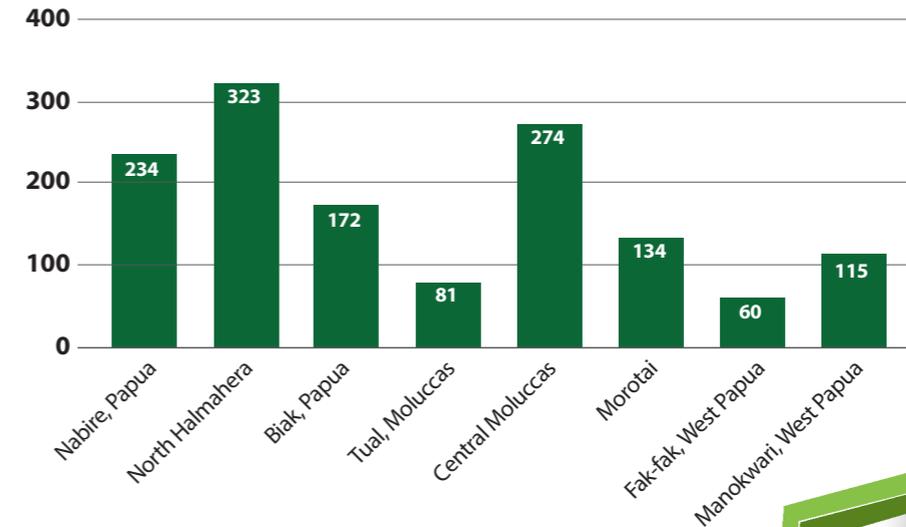
#### Staff's Post in Social Media



## Women & Youth 2020

### Role of Women in Vegetable Farming is Important in Moluccas & Papua (2018-2019)

#### Women Farmers Participation in ToF 2018-2020



### 1,393 women farmers

were trained on GAP knowledge and practice from 2018-2020 in Moluccas and Papua.

**YOUTH**  
12 Groups  
187 Members

**WOMEN**  
19 Groups  
322 Members

Leafy vegetables were chosen as the starter crops to grow vegetable. It is easy and only need 25-30 days until harvest.



SMB (Sekola Mama-mama Berkebon) Left : North Moluccas & Moluccas Provinces - North Halmahera Regency, Morotai Regency, Right : Papua Provinces - Biak Regency, Nabire Regency

## Collaboration with Government in Sikka Regency

### Tilang One Finance

Tilang One Finance (TOF) a group formed by the Head of Tilang Village, Nita Sub district, Sikka District, Flores, Nusa Tenggara Timur, has been active since July 25, 2020. This group is a forum to facilitate the development of community businesses, especially in the agricultural sector, in order to increase the economic growth of the community. The business being developed is horticultural crops.

Joined in the TOF Group are the Head of Tilang Village (Rofinus I.M. Luer), the Bina Tani Sejahtera Foundation (YBTS), BUMDes Bersama “Bangkit Mandiri” in Nita District and farmers.

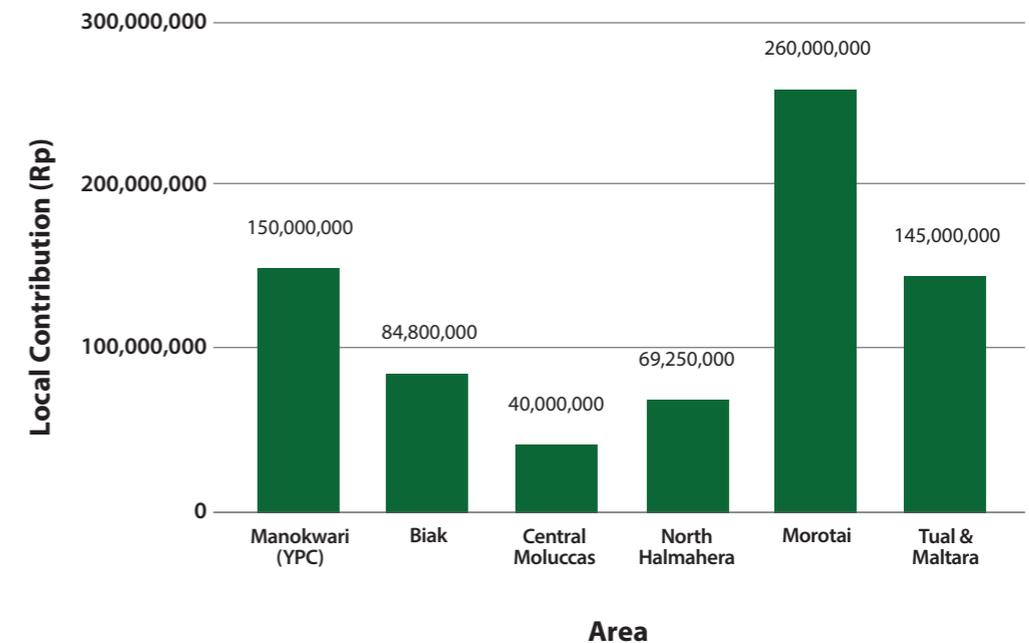


## Collaboration with Local Government in East Indonesia

In 2020, we did many collaborations with local government, local partner, and farmers group to made the KT activities successful. Our local partner supported us with in-kind contribution which we convert it to IDR.

We noted an estimate of Rp 749 Million (USD 54 Thousand) in a form of in-kind contribution by Local governments and partner in eastern Indonesia within our collaboration. The contribution was directly allocated to the farmers or farmers groups.

### Local Contribution (In Kind)



### In-kind contributions and supports were directly received by farmers:

1. Seeds, fertilizers, pesticides for selected farmers groups
2. Reservoir for water supply
3. Tents, chairs, sound during the FD
4. Meals for ToT program in North Halmahera & Morotai
5. Irrigation installation (drip, pipe)
6. Cultivator, spraying kit.

**Collaboration with Local Government in Morotai:** ToT for PPL, support 5 Ha land (120 famers) for horticulture development, nursery service for youth



**Collaboration with Local Government in Halmahera utara:** Facilitate ToT for PPL, make FB & WA group, support for irrigation access

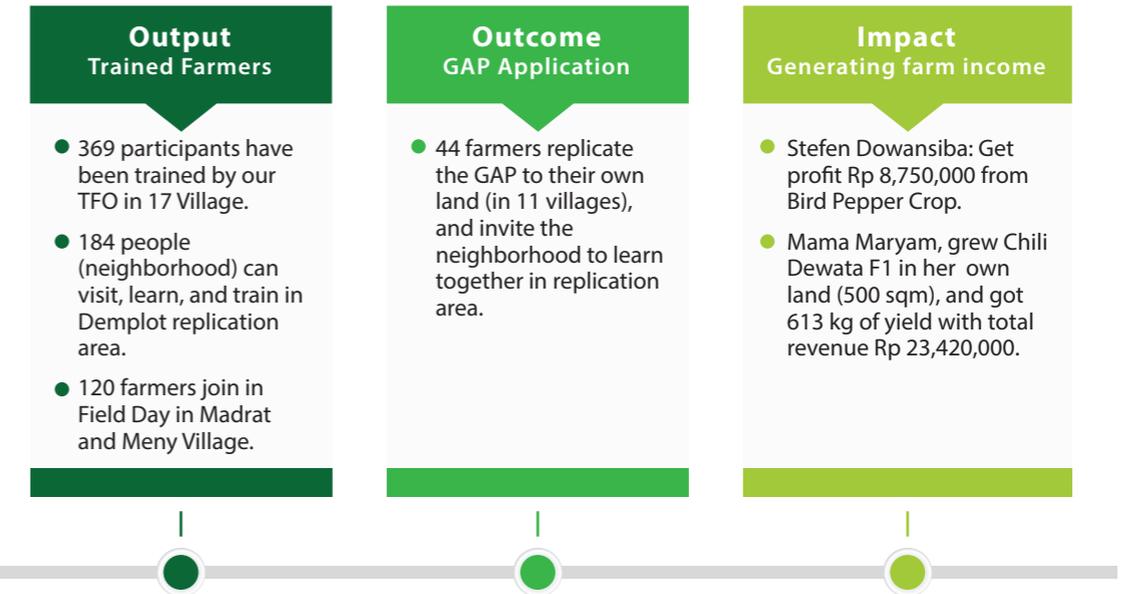


**Collaboration with Local Government in Biak and Nabire:** Podcast, short video, radio, provide water reservoir for farmers, collaboration with EWINDO, dealer to promote TSS

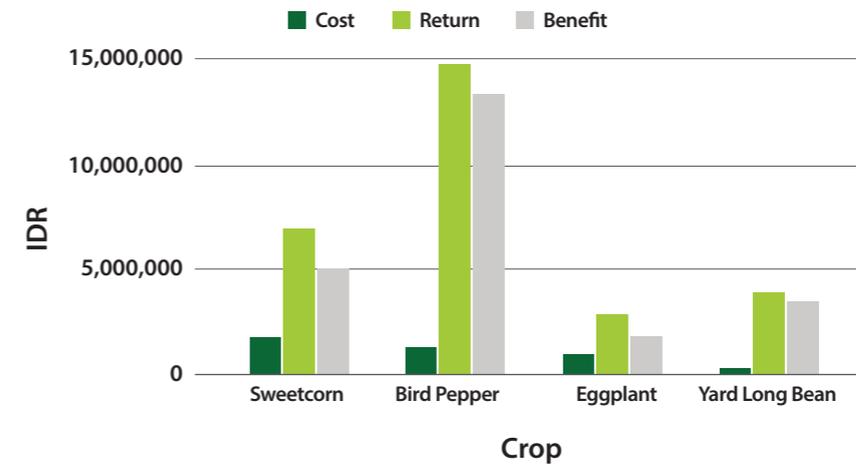


## Collaboration with Yayasan Cinta Papua

- Yayasan Cinta Papua (YCP) has been conducting the activities in Manokwari since 2014. YCP need an intensive program to accompany the local society to improve their skill and income
- YCP and YBTS made an agreement to held the knowledge transfer activity for vegetable farming which focused on local farmers in Warmare sub-district area, Manokwari regency. The program has conducted in January until December 2020.



### Demplot Cost, Return and Benefit in 500 sqm



The most profitable crop for our farmers in Warmare which is cultivated with the good GAP is Bird Pepper. 44 farmers in Warmare, Manokwari already replicated the Vegetable GAP in their own land.

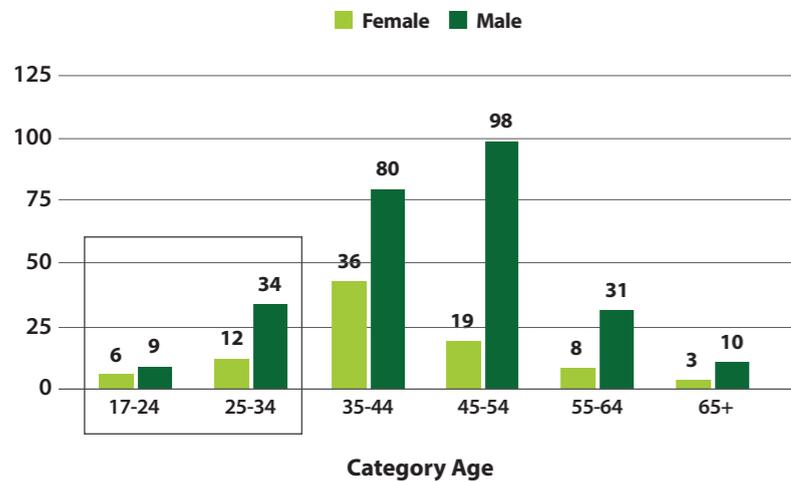
## Training of Students (ToS)

The vocational students are accounted 4.5% of all trained farmers by YBTS in 2020.

The Training of Students (ToS) supports the efforts of the vocational schools producing competent graduates that fit labour market needs, i.e. to continue working in the agriculture.

A sector can not grow if it is lack of educated and skilled young workers.

### Demo Wise Age and Gender



### Young Farmers

- Students of vocational / high schools (16-18 years old)
- Youth (19-34 years old)

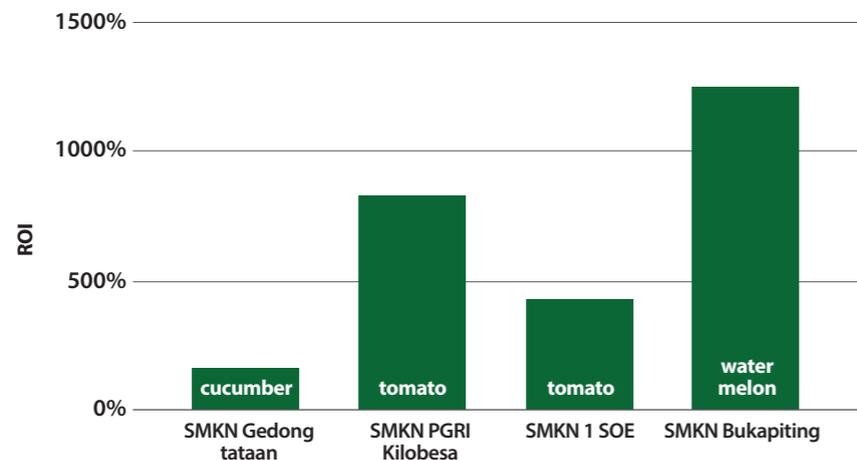
### Year 2020

**18%** demplots were from young farmers (61 of 346 demplots)

**24%** demplots were from women (84 of 346)

1 out of 4 key farmers was a woman

### Return on Investment (500 sqm)



### Number of training of students - vocational schools in agriculture

Areas / Partner	No. of Training	Female	Male	Name of School
AgriProFocus	3	59	71	SMKN 1 Cibadak SMKN 2 Subang SMKN 1 Bawen SMKN 2 Batu SMKN 5 Jember
Alor, NTT	2	12	6	SMKN Bukapiting
Banten	1	6	21	SMKN Rangkasbitung
Jawa Timur and Jawa Tengah	4	42	52	SMKN 1 Kademangan SMKN 1 Tulungagung SMKN 1 Purwosari
Sangihe Islands, North Sulawesi	1	6	7	SMKN 1 Tabukan Selatan
Tual, Maluku Tenggara	2	14	28	SMKN 2 Tual SMKN Ohoinol
Nunukan, North Kalimantan	2	15	26	SMKN 1 Nunukan
SoE, NTT	3	8	9	SMK PGRI Kilobesa
	1	20	18	SMKN 1 Soe
<b>Total</b>	<b>19</b>	<b>182</b>	<b>238</b>	<b>16</b>



Kilobesa



Lampung



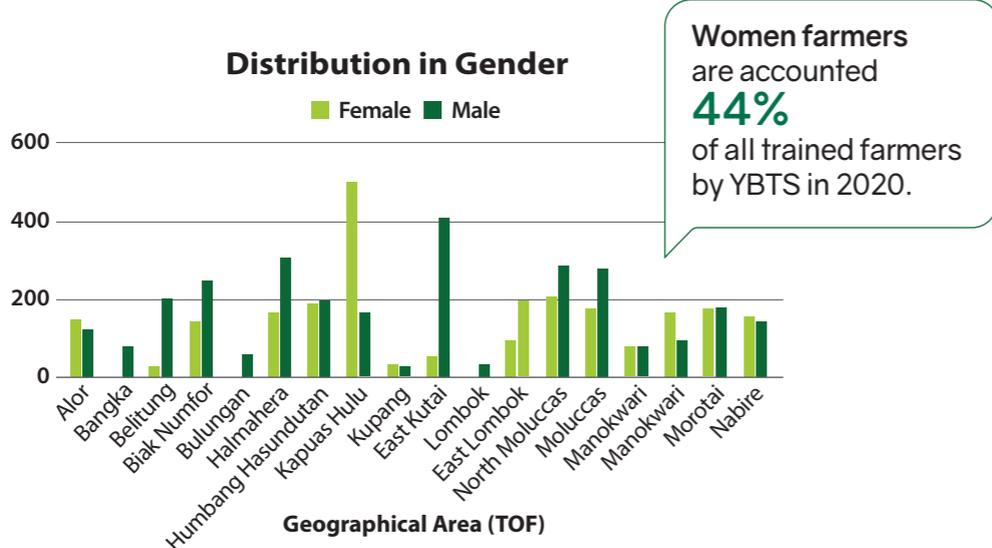
Tobelo



Sangihe

## Training of Women

In Kapuas Hulu, women dominated the ToF as training participants. These women are indigenous local farmers whose lack knowledge and skills in vegetable production but are highly motivated to learn the farming techniques. In other areas however, the number and proportion of women participated in the training still needs to be improved.





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# 5

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**INTEGRATED CAPACITY  
BUILDING FOR FARMERS  
LIVELIHOOD IMPROVEMENT**

## NOELMINA WATERSHED

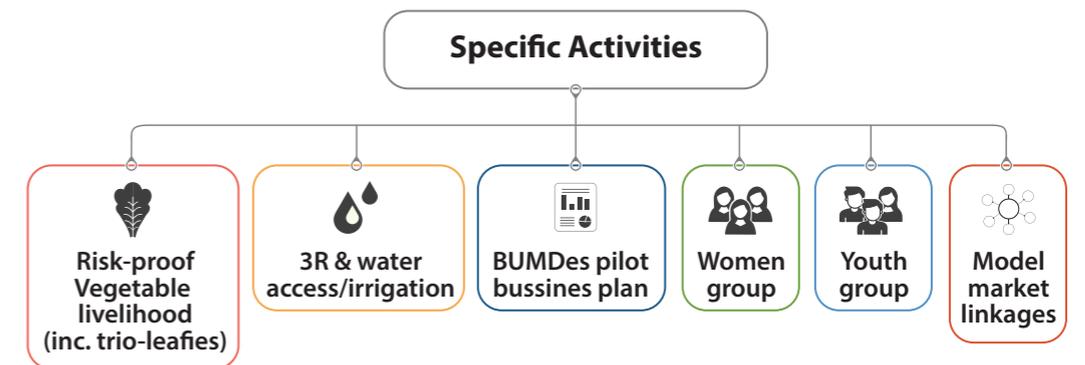
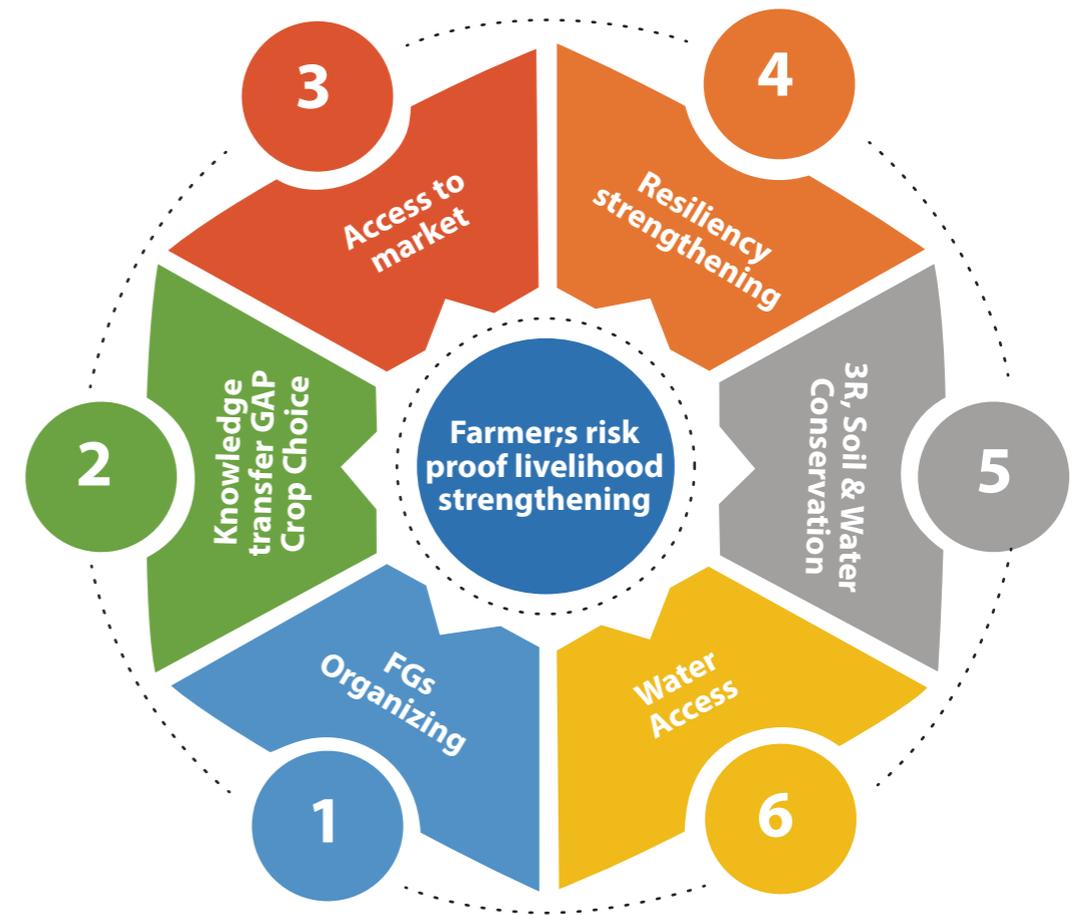
The Integrated Capacity Building for Farmers Livelihood Improvement, the phase-3 AJF and Cordaid funded project is a multi-years works and intervention in West Timor following the succesful PfR intervention commencing in year 2014.

Main objective of the project is to implement and scale up integrated actions for livelihood (vegetable) improvement.



There are 6 groups of interventions namely: FGO, KT and crop choice, access to markets, 3R and soil & water management, access to water, and resiliency strengthening.

As we worked out the project activities within the Noelmina river basin boundaries, we sharpened our interventions with specific activities to ensure that our goal of establishing risk-proof farming business in rural watershed is achievable and sustained.



**Specific activities:** Risk-proof Vegetable livelihood (incl. trio-leafies), 3R & water access/irrigation efficiency, BUMDes pilot business plan, Women groups, Youth groups, Model market-linkages, Contingency plan / Mitigation Action plan.

## Farmers Groups Organizing and Capacity Building

Located in 34 villages, the 114 FGs consists of 114 HHs and 1,801 farmers (incl. husband and wives)

**61% Male** **39% Female**

a total of 114 FGs were organized and served and being engaged in all project activities



District/Sub District	#village	#Fg	HH	Male	Female	Total
TTS/Kota SoE	6	27	264	242	148	390
TTS/Batu Putih	4	14	140	139	70	209
TTS/Amanuban Barat	6	17	140	167	126	293
TTS/Amanuban Tengah	1	4	13	34	28	62
TTS/Kuatnana	1	3	29	29	21	50
TTS/Mollo Barat	2	10	119	99	32	131
TTS/Mollo Selatan	4	13	105	115	113	228
TTS/Mollo Utara	4	7	90	76	45	121
TTS/Mollo Tengah	1	5	63	64	42	106
<b>Sub total TTS</b>	<b>29</b>	<b>100</b>	<b>963</b>	<b>965</b>	<b>625</b>	<b>1590</b>
Kupang-Takari	3	10	76	75	51	129
Kupang-Fatuleu	2	4	35	52	30	82
<b>Sub Total Kupang district</b>	<b>5</b>	<b>14</b>	<b>111</b>	<b>127</b>	<b>84</b>	<b>211</b>
<b>TOTAL</b>	<b>34</b>	<b>114</b>	<b>1074</b>	<b>1092</b>	<b>709</b>	<b>1801</b>



We have seen that capacity building with FGs was also complemented by other stakeholders getting benefits and supports through participation and collaboration within the project.



- |          |   |
|----------|---|
| <b>1</b> | <ul style="list-style-type: none"> <li>• Applied and shared knowledge and skill of GAP/3R</li> <li>• Division on the role between man and women (task and responsibilities)</li> <li>• Extend farm size on vegetables planting</li> <li>• Planting scheme a year (2 times/year)</li> </ul>  |
| <b>2</b> | <ul style="list-style-type: none"> <li>• Draft of parliament regulation (Water Conservation)</li> <li>• Collaboration of FGs capacity building</li> <li>• Retention Basin (embung) planning for agriculture</li> <li>• Replication Demo plots</li> <li>• Spreading technical knowledge of GAP and 3R to more farmers / farmer groups</li> </ul>   |
| <b>3</b> | <ul style="list-style-type: none"> <li>• Allocation of village funds for agriculture sector</li> <li>• Motivations to other FGs for growing vegetables</li> <li>• Village program: demo plots, Expo and BUMDes management and business</li> <li>• Planning to conduct mini expo independently</li> <li>• Contribute to village regulation (contingency plan)</li> <li>• Adoption of 3R and GAP</li> </ul> |
| <b>4</b> | <ul style="list-style-type: none"> <li>• Support to provide agriculture input</li> <li>• Collaboration for market linkage</li> <li>• Information and distribution of product</li> <li>• Provide subsidized fertilizer</li> </ul>  |

## KT (GAP) and crop choices

### Series technical training on GAP (4 series)

The training supported by another YBTS project (vegIMPACT NL)

Farmers are able to select vegetables based on market and price surveys to get maximum profit in dry and rainy season.

Selection of varieties that are suitable for land elevation (upland, medium and low lands)



GAP Training support by vegIMPACT NL, Facilitated by PPL and YBTS in FG Replication (Benlutu village)



Tomato (Marta F1) for the uplands in the farm of the Manektob FG in Ajaobaki Village farmers



Nursery of Tomato (Betavila F1) in FG demoplots in Kesetnana village (middle land)



Chili (Nirmala F1) in Syalom Betlehem FG farm - Oesusu village (low land)

**HARVEST FROM THE FG'S FARM**

Harvest of the vegetables in some villages

The farmers are happy with the yield and income

The buyer purchase the harvest to the farmers farm directly and some farmer sell to local market in another sub district



Harvest of long yard bean in Oesusu village - Kupang district



Harvest of chili in Noemeto village



Harvest of tomato and cucumber in Kesetnana village



Harapan FG in Karang Siri in urban village



Mekar Bersama FG in Kesetnana village



Youth FG in Cendana urban village



Tubleu FG in Noinbila Village

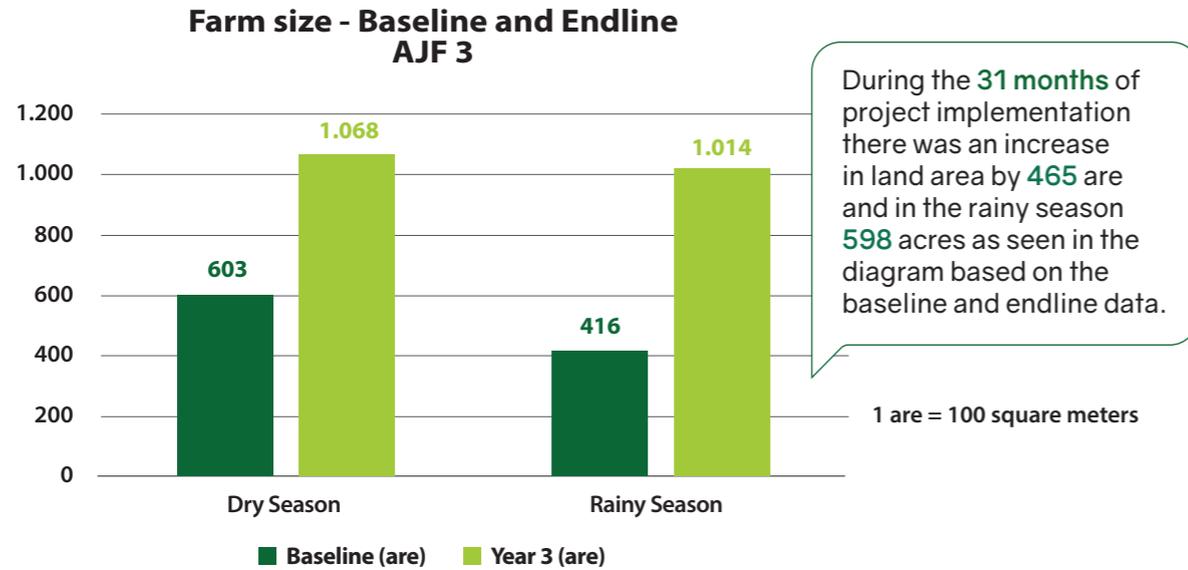


Oemathonis FG in Pusu Village



Batukarang FG in Kesetnana village

## Baseline and Endline of AJF 3 Project



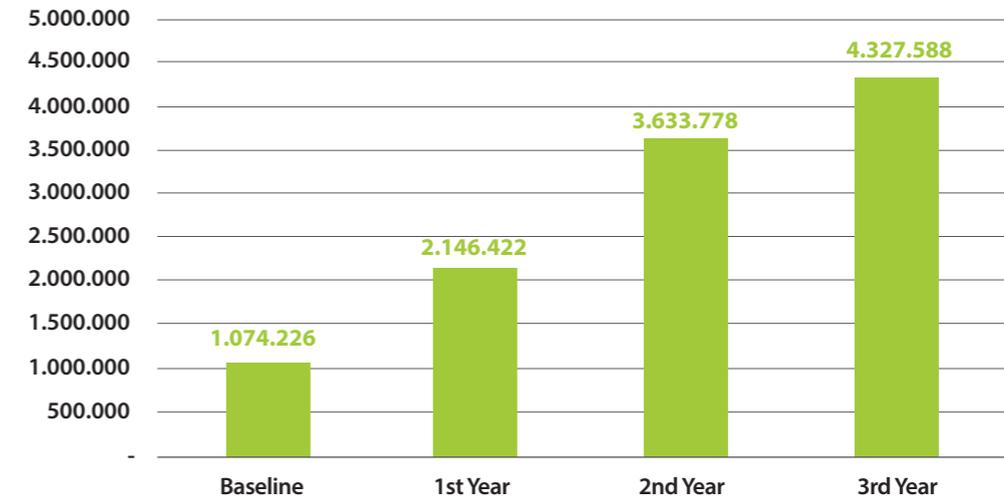
Average number of type of crops at baseline was increased from 2 to 3 in endline, meaning farmers have had more choices of crops in their business.

We have also seen remarkable increased of household income:

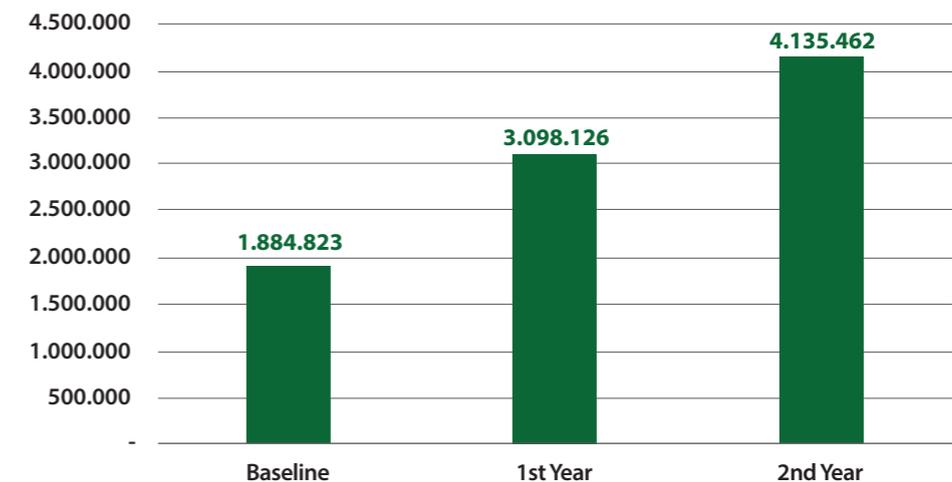
- Rainy season: an increase of 2 fold (> 200%) from Rp 1.9 Million to Rp 4.1 Million;
- Dry season: an increase of 4 fold (400%) from Rp 1.1 Million to Rp 4.3 Million.

These figures showed a very profitable vegetable farming business for the farmers

**Farmer's Income in the Dry Season (Rp)**



**Farmer's Income in the Rainy Season (Rp)**



## Retain, Recharge & Reuse (3Rs) & Soil and water conservation measures

Making water traps, infiltration holes, terraces, planting trees, and zigzag beds

Making 3Rs in the context of landscape level required a process that should involve the village community

There were 3Rs activities performed at the demonstration plot level and individual land as an effort to maintain the availability of groundwater.

Year	FG's	Water trapped (M)	Infiltration hole (M)	Terrace/Bed zig zag (M)	Planting tree (unit)
2018	22	387	90	10000	259
2019	24	93	64	12550	490
2020		40	20	16800	200
<b>Total</b>	<b>46</b>	<b>520</b>	<b>174</b>	<b>39350</b>	<b>949</b>



Making beds according to "A frame" techniques in Oelbubuk village



Water hole in Netpala village

## Water access facility installation

### Water Access

46 farmer groups received support for the installation and adjust to the needs and potential of water sources

To help farmers getting water closer during the planting on their farm, there was a simple construction installed in the demo plots including water piping system, drip irrigation, and manual drip irrigation, water pump, and semi jet pump, as well as UV plastic for water storage. The water facilities construction supported farmers to gain better yields and income to be used as group assets, which would be managed by groups.



Water storage (UV plastic) in Tahatoen FG in Kuatae village



Drip Irrigation installation in agrotourism farm in Biloto village

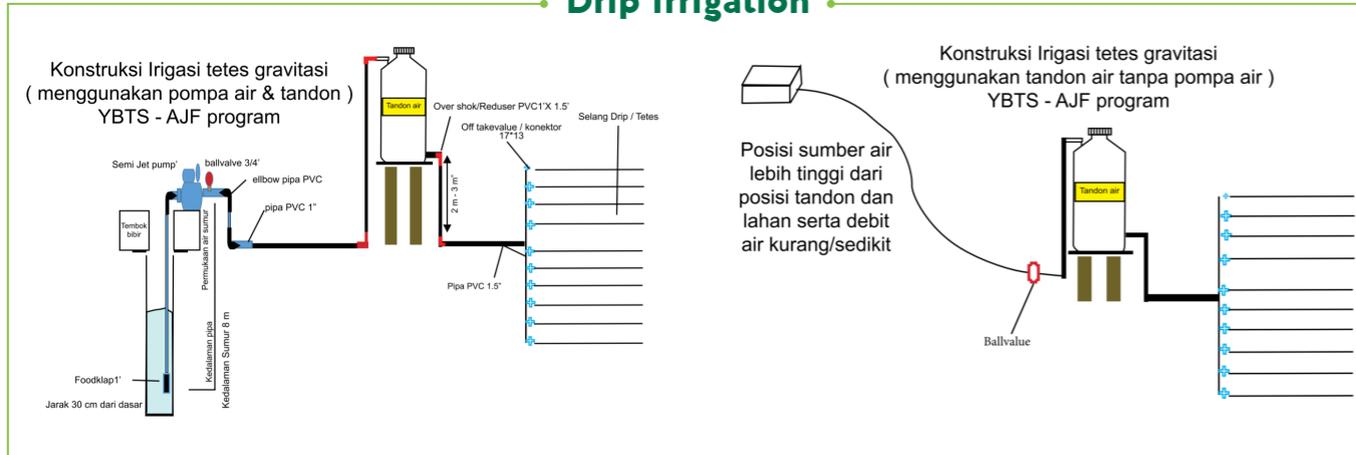


Distribution of water construction material in Benlutu village

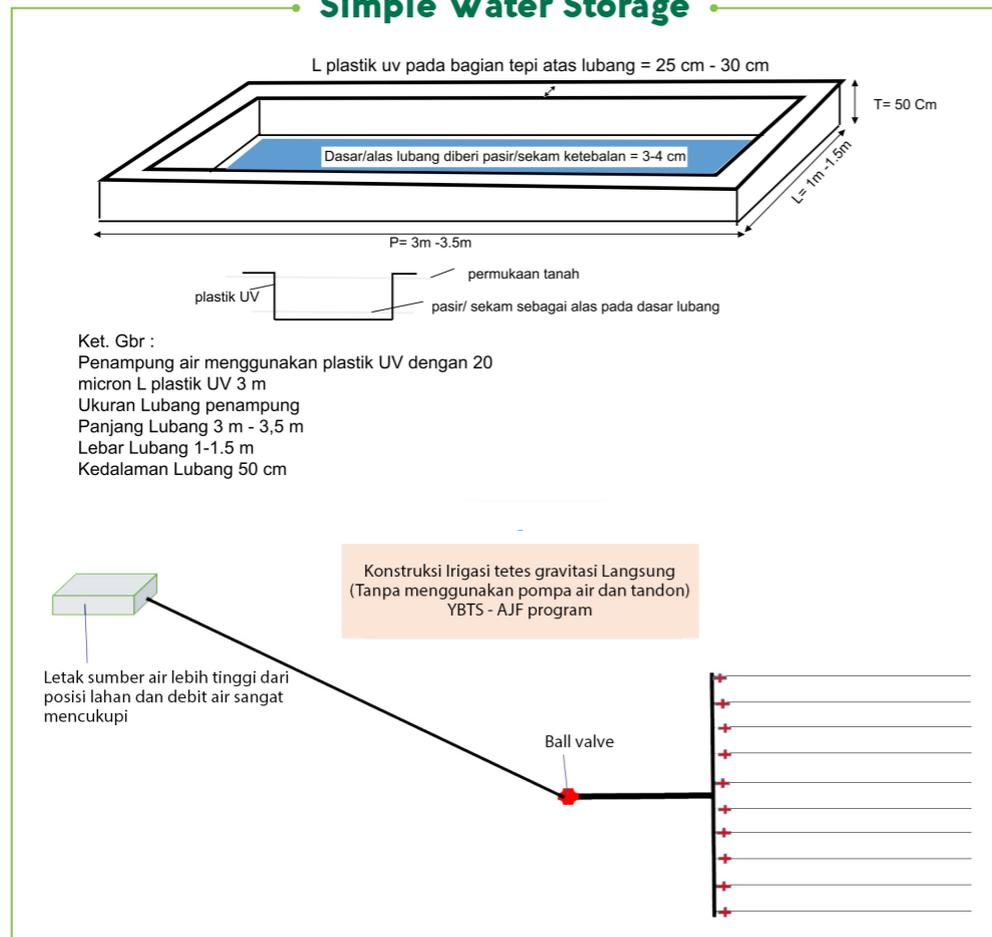
Description	Year	Unit/vol	Year 2	Unit/vol
Pipe installed (meter)	2018 (22 FGs)	1994	2019 (24 FGs)	2220
Drip irrigation (meter)		1200		1500
Manual drip-PVC (meter)		32		1664
UV Plastic (meter)		250		192
Hose (meter)		2600		2650
Spiral Hose (meter)		25		32
Semi Jet pump (unit)		4		5
Water Machine pump (unit)		3		9

## Model of water installation

### Drip Irrigation



### Simple Water Storage



## BUSINESS PLAN AND STRENGTHENING

The development of business plan was not only done at the FG/ farmer level but also with potential farmers individually.

### FG/Farmers

- FGs have BP document
- 5 Individual farmers in 5 villages have BP Document and planting scheme in a year



### Management organisation

- FGs trained and prepare to level up the class from beginner to extended
- FGs have regulation in organisation



### BUMDes and village fund

- BUMDes Noemeto received approval from government for supporting agriculture input
- BUMDes Boentuka allocated village fund Rp 13,600,000 for 1 FG with 25 are and 6 crops



## Access to markets and financial services

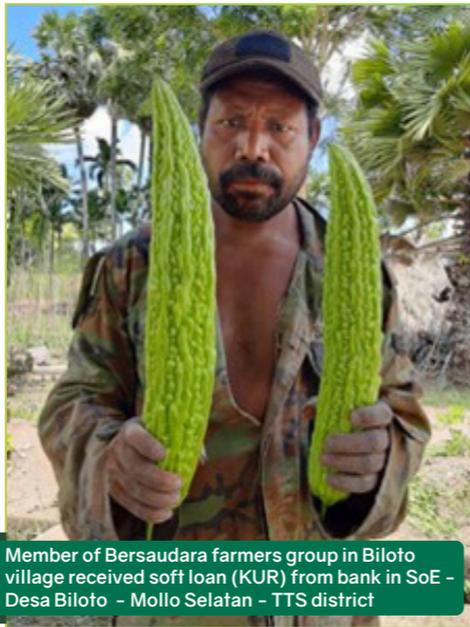
### Access to markets & financial services

a model of market linkage and M4P is tested and deployed for 35 FGs in 19 Villages (Kupang and TTS district)

Individual and farmer groups will easily access soft loans from the Bank by using their business development plan, Technical assistance group strengthening, administrative and financial governance is a must.

Soft loan from BRI (bank) for the FGs ; FG should has business plan).

Bersaudara FG in Biloto village for Rp 15 million, Laharoi FG in Kesetnana village : Rp 25 million.



Member of Bersaudara farmers group in Biloto village received soft loan (KUR) from bank in SoE - Desa Biloto - Mollo Selatan - TTS district

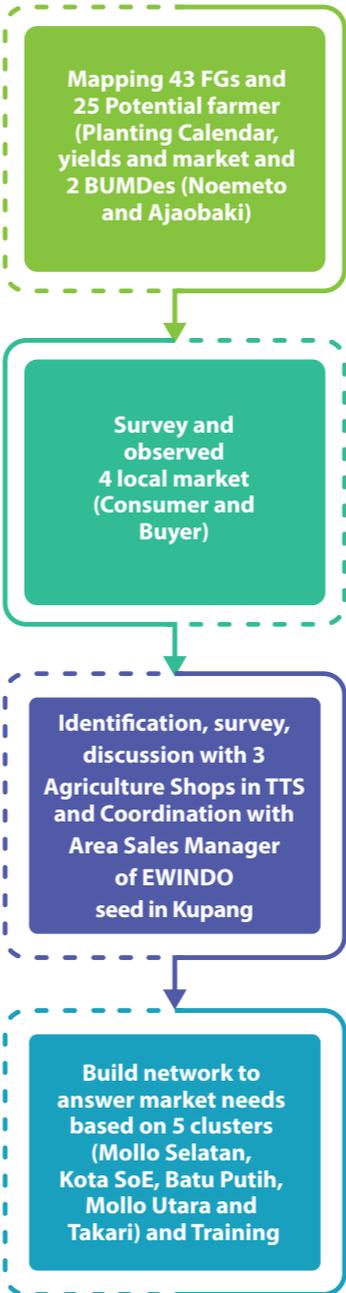


Soft loan disbursement process at the bank office in SoE



Check the pesticide residu by NTT Provincial Food Security Service to ensure it is safe for marketing and consumption in Nekomese FG - Kesetnana village - TTS

## Watershed vegetables Farmer Network – M4P



A strong foundation of network very important to strengthening groups and or individual potential farmers to read opportunities and benefits.

During Covid-19 pandemic, market demand is still there, so farmers should be able to continue to sell vegetables sustainably during the pandemic and through the network they update commodity prices to determine which markets they will sell in.



Strengthening the capacity of members of the Noelmina watershed farmer network in SoE

## LEVEL OF FARMER GROUPS

Regular meeting would be considered as more optimal thus all stakeholders will be able to build coordination, communication, monitoring and evaluation faster to support farmers and farmers groups capacities.



- Registered to Beginner level when farmer group formed then acknowledge by chief of village (10 FGs)
- Beginner to Extended level (20 FGs) by head of sub district government
- Extended to Intermediate level (1 FG) by Regent (Bupati)
- Total 31 FGs level up of classification



Promoted FG's from register to beginner . Authorized by head of village government based on Agriculture division recommendation in Oesusu village - Kupang



Promoted FG's to next level (beginner to Extended). Authorized by vice of major TTS district based on Agriculture division recommendation in Kesetnana village

## Resiliency strengthening and mitigation plan towards drought hazard

### Resiliency strengthening

**Participatory Disaster Risk Assessment (PDRA) & Contingency Plan (CP) through KARINA support and capacity for advocacy with local Government**

PDRA was conducted in 9 villages

Table Top Exercise of CP was conducted in Boentuka and Noemeto villages

Drought Contingency Plan Documents for agriculture in 2 villages (Noemeto and Boentuka)

Engaging governments and other related stakeholders such as DRR (Disaster Risk Reduction) Forum

Drought Mitigation Action Plan documents for 2 villages (Benlutu and Oesusu) as guidelines in proposing village budget plans in 2021



Community planning of drought mitigation action in Oesusu village



Contingency Plan and Table Top Exercise in Noemeto village



Community planning of drought mitigation action in Benlutu village

## EXPO AND FARMERS FIELD DAY (FFD)

Total outreach from 9 times of Expo and 22 times of FFD during AJF3 project was 4,108 participants; 2,191 male and 1,971 female.

Farmers' field day, expo and comparative study were positive and effective way in motivating farmers to better utilize and maximize their potential land and sustainability.

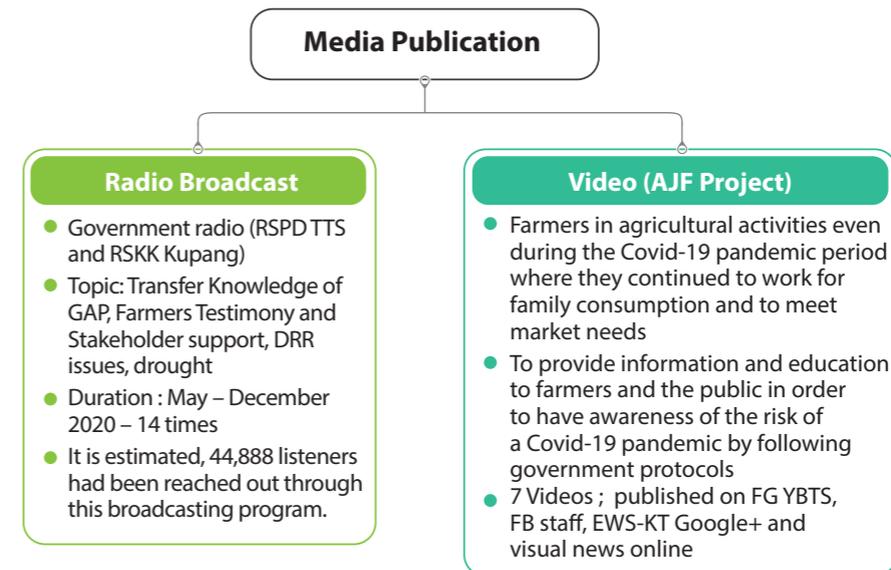
Farmers Field Day (FFD)  
**22 Times**  
Public Expo  
**9 Times**



## MEDIA PUBLICATION

Documentation and publication on the success of the program could be a guide in future government program planning (future allocation of village funds for FGs activities).

Broadcasting media is a good strategy in spreading knowledge to areas that cannot be reached during project implementation.



It is encouraging to see presence of Government officials to support and motivate farmers groups. The Regent of TTS District, Bapak Epy Tahun is very supportive of this livelihood project.



## INTERNSHIP PROGRAM

Motivating young farmers to cultivate vegetable farming as a source of livelihood needs to be done as early as possible. Internship program is an initial foundation.

Collaboration with Agriculture faculty and Vocational school were carried out because they saw evidence of success during project implementation.

**Internship Program**  
Agriculture Faculty  
of Nusa Cendana  
University (71 people:  
July-August 2019)  
Agriculture Vocational  
School - Kilobesa  
(4 Students:  
August- October 2020)



Knowledge Transfer Manager from Dutch visited in Cendana village when internship of Agriculture Faculty student



Teacher and Student of Agriculture vocational school was practising about GAP technical

## WORKSHOP & COMPARATIVE STUDY

- **GAP and 3R evidence Workshop**  
OSM
- **M4P Workshop**  
Networks of FGs (initiation and Form of Networks)
- **BUMDes (comparative Study)**  
PPM Yogyakarta
- **Financial access and Buyer Meeting**  
Agricultural Product Processing and Food Health Permits
- **Internal Evaluation Meeting**  
Workshop on Integrating Noelmina Watershed Management into the Village Development Plan



M4P Workshop facilitated by KARINA Consultant form Jogja. The participants consist of YBTS staffs, Village members, Farmers, PP of EWINDO and Agriculture department in SoE



Workshop of Noelmina watershed mapping and survey facilitated by Open Street Map Indonesia (POI) in SoE



GAP and 3R Evidance Workshop to collect the success and lesson learned from Stakeholder and beneficiaries



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# 6

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## Vegetable Production with Impact Next Level

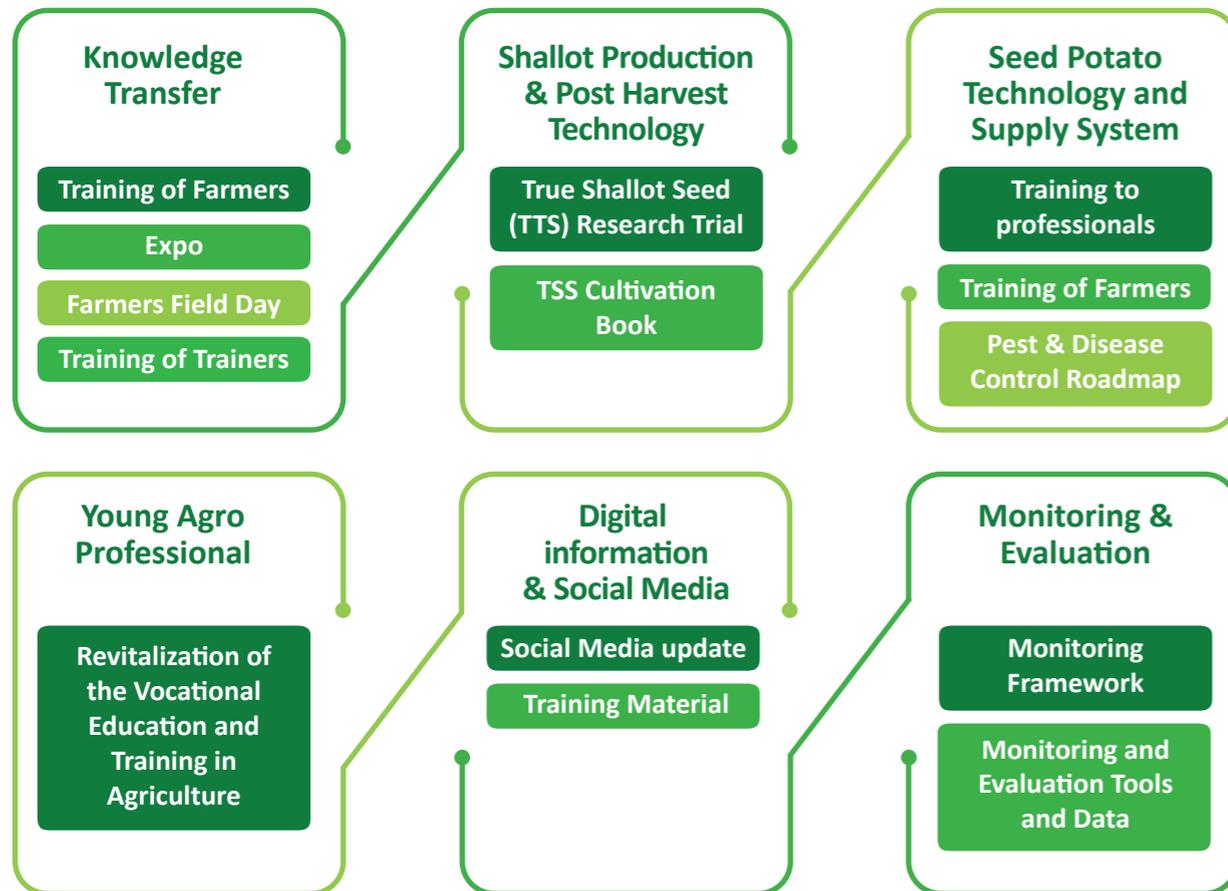


WAGENINGEN  
UNIVERSITY & RESEARCH



EAST-WEST SEED  
CAP PANAH MERAH

## vegIMPACT NL is Knowledge Generation and Knowledge Transfer of 6 Tracks:



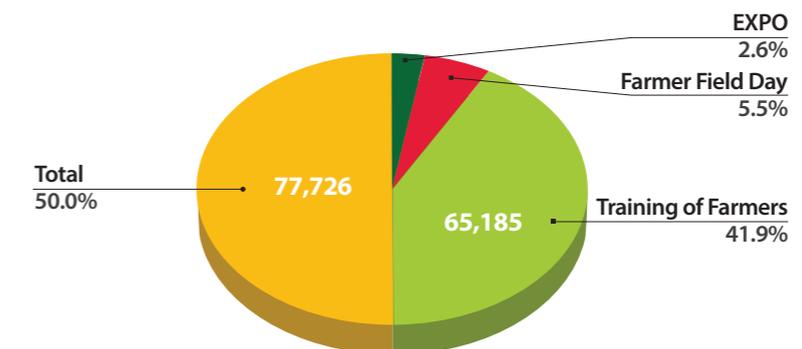
- The vegIMPACT NL program contributes to improved vegetable production and private sector development in Indonesia. The program builds on the results of previous joint Indonesian-Dutch horticultural cooperation projects, especially the vegIMPACT program (2012–2017).
- The addition 'NL' stands for both Next Level and the Netherlands: vegIMPACT NL contributes to the further ("next level") development of vegetable production and private sector development in Indonesia using horticulture knowledge and expertise from the Netherlands and Indonesia.
- The vegIMPACT NL program is fully supported by the Government of the Kingdom of the Netherlands and coordinated by Wageningen University & Research (WUR) in The Netherlands.

## KNOWLEDGE TRANSFER TRACK

Towards completion of vegIMPACT NL program, 38,846 individual farmers in Indonesia had benefited from various Knowledge Transfer field activities. Some farmers participated in more than 1 KT activity, and it tallied up to 77,726 attendances. This means in average, a farmer participated in 2 types of field KT activities.

Areas	Male	Female	Total
EWINDO Areas	18,845	4,961	23,806
YBTS Areas	8,272	6,768	15,040
<b>Total</b>	<b>27,117</b>	<b>11,729</b>	<b>38,846</b>

### Contribution to Each activity in EWINDO and YBTS

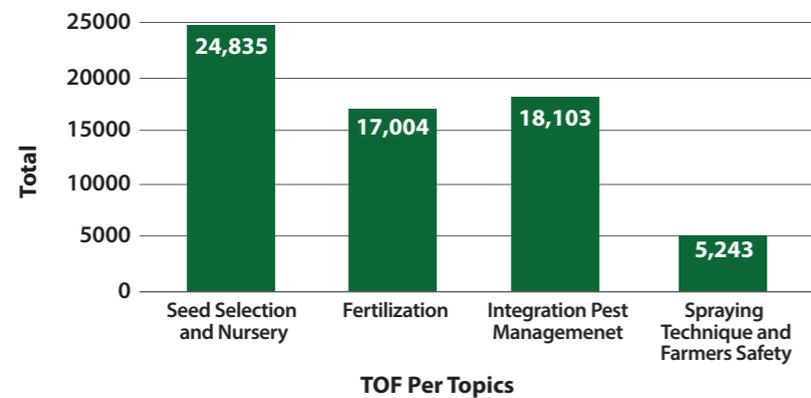


- The number of individual farmers in EWINDO 23,806 farmers and YBTS 15,040 farmers.
- 3 types of KT field activities are: Training of farmers, Field days and Vegetable Expos
- We used different set of Tools in different type of activity
  - » ToF: Flip-charts, brochure/leaflet, practical booklet (pocket), vegIMPACTNL slides, videos, and field tools such as pH meter
  - » Field days and expos: Flip-charts, brochure/leaflet, practical booklet (pocket)
- ToF contributed 83,9% to the overall number of beneficiaries, while both FFD and expos 16,1 %

## Training of Farmers (ToF)

**Training of Farmers (ToF)** : Gives access to smallholder farmers to receive training and practice on Good Agricultural Practice (GAP). Based on attendance lists, each farmer joined one session or more sessions of training with topics: to attend 4 sessions of training with topics: Seed Selection Seedling and Nursery, Fertilization, Integrated Pest Management, Spraying Techniques and Farmers' Safety.

**Number of Farmers Participated for each ToF Topic**



**3,235** Trainings of Farmers were conducted throughout 2020 and based on the above graphic:

**24,835** farmers participated in 1<sup>st</sup> topic Seed Selection and Nursery

**18,103** farmers attended 3<sup>rd</sup> topic IPM

**17,004** farmers in the 2<sup>nd</sup> topic of Fertilization, and

**5,243** farmers in the 4<sup>th</sup> topic of Spraying Technique and Farmers Safety



## Farmers Field Day

Areas	No. of Events	Male	Female	Total
EWINDO Areas	81	3,429	782	4,211
YBTS Areas	53	2,452	1,816	4,268
<b>Total Participants attended FFD</b>				<b>8,479</b>

- Farmers (40-60 persons) are invited to visit a pilot demo plot to learn and observe GAP (cultivation technique, pest and disease identification, detail on crop & varieties)
- In this event, key farmers share their own experience or success stories with others.
- This event usually takes a half day.



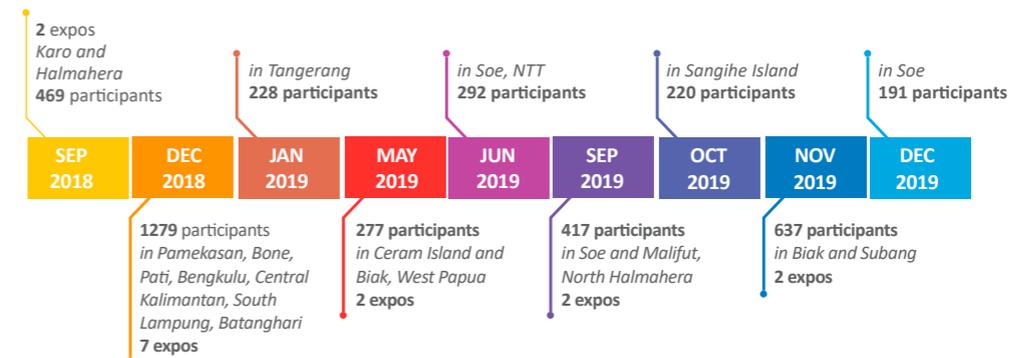
Field Day in East Kutai, East Kalimantan



Field Day in Sangihe, North Sulawesi

## Farmers Expo

A big event (mostly more than 150 participants) to promote GAP and high-quality seeds not only to farmers, but also to local government, stakeholders, students, and related persons, 6-20 different commodities.



Expo in Sangihe, North Sulawesi

## KT materials distribution

vegIMPACT NL has developed knowledge materials of GAP such as posters, booklets, crop and technical guide flyers and videos, also animation videos for the purpose of Training of Farmers. The printed materials are easy to understand with attractive pictures and colors. To date 31,000 booklets and flyers have been distributed to farmers. Farmers also received supporting materials such as farmer t-shirts, spraying masks, and face masks.



Farmer in Ceram Island showed booklet 30 slogans



Agricultural extension officer in Belitung received goodie bag



Farmer group in Manokwari received crop/technical guides and booklet identification of pest and diseases

## Collaboration with SIPINDO

- Develop and promote digital information into mobile Apps and social media accounts with information on (GAP)
- 23 GAP infographics have been posted in SIPINDO App
- Introduce vegIMPACT NL activities in SIPINDO events (offline and online session)



## Qualitative assessment of ToF & adoption of GAP

A qualitative assessment of the ToF was conducted in North Halmahera and Sangihe to gain insight in the implementation of ToF and assess potential spin-off, such as peer to peer learning.



KT assessment in North Halmahera

- Trained farmers have little experience in horti farming
- Out of 38 trained farmers who are still actively growing vegetables, all of them agreed that their yield and income increased after adopting GAP
- GAP topics to learn further: Fertilization (Composting) and Integrated Pest Management
- Non GAP topics to learn further: Shallot cultivation and Post-harvest processing



KT assessment in Sangihe

- Most of the trained farmers have experience in traditional horti farming.
- Out of 46 trained farmers who are still actively growing vegetables, all of them agreed that their yield and income increased after adopting GAP
- GAP topics to learn further: Integrated Pest Management
- Non GAP topics to learn further: Shallot cultivation, Post-harvest processing, and Group management skills

## Summary

Data was collected in focus group discussions (FGD's) using semi-structured interviews of trained farmers (from 2018-2020) and selected stakeholders such as non-trained farmers and public extension staff.

In both regions, farmers have started to adopt GAP after participating in ToF or learning in demonstration plots. Trained GAP knowledge and skills have helped farmers to increase vegetable production.

The chart below shows the farmer adoption rate. In Sangihe, although it is a relatively new area, the adoption rate of farmers is higher than in North Halmahera considering that they have years of experience in cultivating vegetables. Meanwhile, in North Halmahera, most of the farmers are beginners in horti-farming. Therefore, after the ToF was completed, most farmers still needed TFO assistance in implementing GAP.

### GAP Adoption



**Theme of activities together with EWINDO and BALITSA (Balai Penelitian Tanaman Sayuran):**

1. field trial / agronomic optimization of TSS system, i.e. impact of different production method, planting distance
2. development of methods to control *Spodoptera exigua* in shallot system (with UGM, IPB)
3. economic of cost-benefit analysis of TSS cropping system
4. post-harvest technology in shallot (with AgriProFocus)
5. development of manuals on shallot production (crop guides, book)
6. dissemination of TSS and post-harvest technology through workshop



**Dua Teknik Persemaian Bawang Merah dari Benih (True Shallot Seed/TSS)**

Penanaman bawang merah menggunakan TSS oleh petani semakin meningkat di seluruh Indonesia karena petani mendapatkan banyak manfaat: bahan tanam yang hemat biaya dan lebih bersih, serta potensi hasil yang lebih tinggi.

Persemaian yang baik dan tepat untuk menghasilkan bibit muda yang sehat dan seragam sangat penting untuk memastikan keberhasilan budidaya TSS.

**A. Persemaian Menggunakan Bedeng Semai**

**1. Persiapan Bedeng Semai**

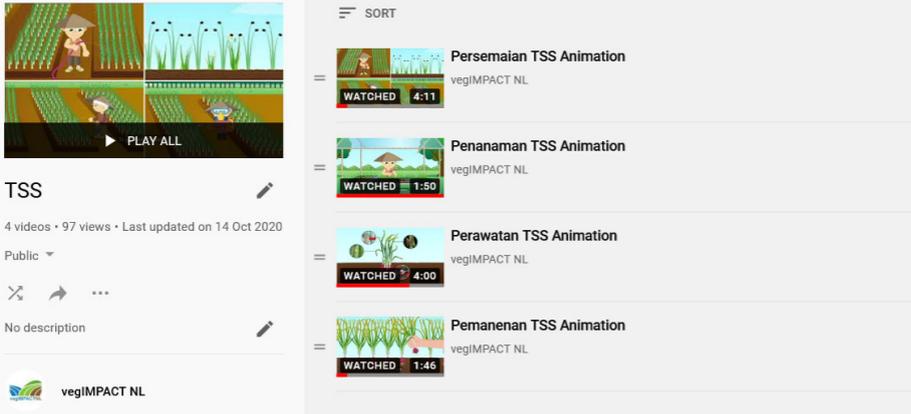
Bedeng semai harus remah agar benih dapat berkecambah, tumbuh normal dan sehat. Pembakaran sekam padi langsung di lahan dapat meningkatkan keremahan bedeng semai serta meminimalkan pertumbuhan gulma dan serangga patogen pengganggu dalam tanah.



Bedeng semai ditaburi sekam padi dengan ketebalan 20 cm dan membuat titik api dengan

Setelah sekam terbakar sempurna, bedeng diberi air yang cukup dan digemburkan menggunakan cangkul kecil. Ratakan sehingga siap untuk persemaian.

**TSS leaflet Persemaian Bawang Merah is printed**



**TSS**  
4 videos · 97 views · Last updated on 14 Oct 2020

- Persemaian TSS Animation (4:11)
- Penanaman TSS Animation (1:50)
- Perawatan TSS Animation (4:00)
- Pemanenan TSS Animation (1:46)

August 2020: 4 animation videos are produced and available on YouTube vegIMPACT NL

Field trial “**impact of planting distance on the size of shallot bulbs from TSS**” was implemented at EWINDO field, Purwakarta in July–November 2020. Preliminary results: the higher the plant population (planting distance), the higher the productivity. the higher the plant population (smaller planting distance), the smaller the bulbs diameter (size), i.e. the higher the population of bulbs with diameter 2.5–3.5 cm and 1.5–2.5 cm. The optimal TSS planting distance will be known after a joint analysis WUR–BALITSA is completed (currently in progress).



### Market study on consumer preference for shallot in Jakarta greater areas

- In 2020, vegIMPACT NL commissioned BOI Research to implement market study on consumer preferences for shallot in Jakarta and surrounding areas
- 280 respondents spotted at traditional markets (41%), local supermarkets (33%) and high-end supermarkets (25%)

### Study results:

- Shallot shopping behaviour:
  - 76% of consumers buy shallot by weekly or daily basis, the rest buy it when needed or occasionally
  - consumers most often purchase at traditional markets (52%), from vegetable vendors (27%), at supermarkets (16%), online & others (4%)
- Shallot usage by consumers: 94% consumers use shallot for vegetable dishes, 67% consumers responded for use with meat or poultry dishes, 61% consumers used it for sambal, and 52% used it for fried shallot.
- Consumers prefer these top-5 drivers to choose shallot in markets: affordable price, doesn't spoil quickly, strong taste, availability, and doesn't dry up quickly
- While consumers' preferences on shallot quality are: freshness, cleanliness, bigger bulb size, strong aroma/smell, and dark red color



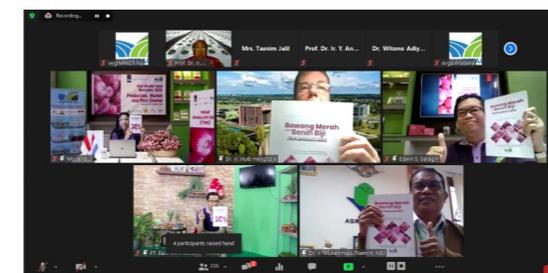
### TSS Webinars – Production, Market and Pest Control on 21-22 October 2020

The webinars presented the state-of-the-art knowledge on true shallot seed production, pest control, post-harvest management and consumer preferences for shallot. The webinars were of interest for stakeholders in shallot production and the wider value chain aimed to strengthen their practical knowledge on true shallot seed production and other aspects of shallot production and marketing.

These 2-day webinars facilitated the dissemination of TSS track progress results and were attended by 531 participants from shallot professionals, extension officers, crop experts, farmers, and students. Bapak Glenn Pardede, Managing Director PT East West Seed Indonesia, Bapak Muhammad Thamrin, Director BALITSA, and Huib Hengsdijk (Program Manager vegIMPACT NL and Sr. Researcher Wageningen University & Research / WUR) gave opening remarks and opened the webinar.

### Line of speakers:

- Dr. Witono Adiyoga, principal researcher BALITSA
- Adriyanita Adin, MSc, crop breeding manager EWINDO
- ing. Herman de Putter, researcher & trainer Agronomy WUR
- Ibrahim Palaz, M.A, new business coordinator AgriProFocus
- Dr. Awang Maharajaya, SP, director tropical horticulture assessment center IPB
- Prof. Y. Andi Trisyono, honorary lecturer entomology dept, fac. of agriculture, UGM
- Ervina Dian Irawati, MSc., director BOI Market Research
- Prof. I Made Sudantha, honorary lecturer fac. of agriculture, Mataram University Jurgen Nagel, UD Sumbawang



## TSS Book Publication

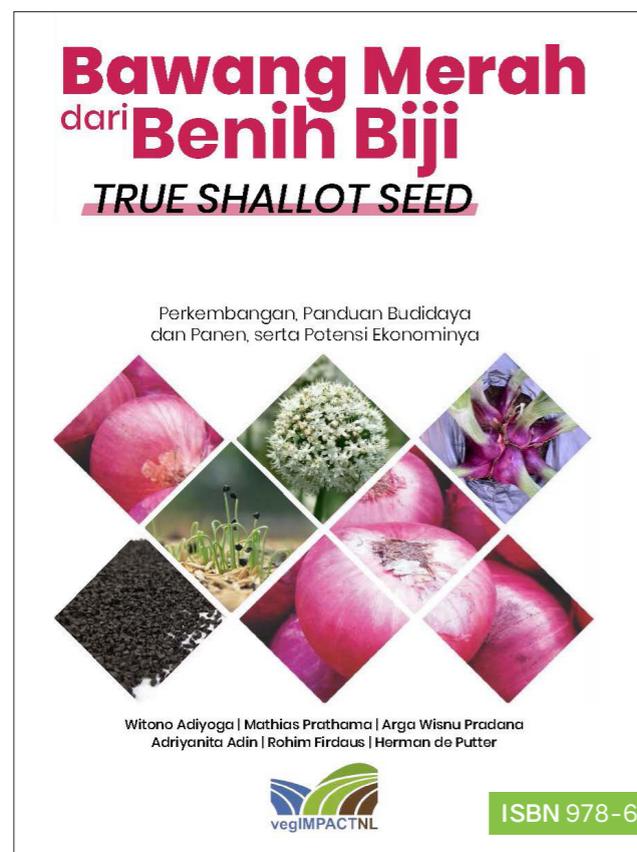
### TSS book “Bawang Merah dari Benih Biji – True Shallot Seed

It is the first book in Bahasa Indonesia discussing true shallot seeds from various aspects, i.e. technology, crop guide, post-harvest and economic potential.

- It is written by:  
Witono Adiyoga and Mathias Prathama from BALITSA, Arga Wisnu Pradana from YBTS, Adriyanita Adin and Rohim Firdaus from EWINDO, and Herman de Putter from WUR
- The book was distributed to project partners, i.e. BALITSA, EWINDO, YBTS, UGM, IPB, as well as lecturers and researchers.

#### Contents: (7 chapters)

- Profil Bawang Merah
- Potensi Budidaya Bawang Merah
- Transformasi dari Umbi ke True Shallot Seed
- Persemaian Bawang Merah Asal Benih Biji
- Budidaya Bawang Merah Asal Benih Biji
- Panen dan Penanganan Pasca Panen
- Aspek Ekonomis Budidaya Bawang Merah TSS



## Young Farmers Track

- prepares vocational students of agriculture for employment in the agricultural sector. A sector can not grow if skilled and educated young resources are lacking.
- promote agriculture and agribusiness as promising livelihood strategy, and
- improves the image of farming for the young.

## SMK Magazine with AgriProFocus and Nuffic NESO Indonesia

vegIMPACT NL reviewed content of the SMK magazine, a joint publication from Dutch and Indonesian partners in the INNOCAP (Innovation in Capacity Building) and vegIMPACT NL programs.

- These partners worked together to strengthen agricultural education at SMK level / vocational schools to bring the vocational education in Indonesia to a Next Level.
- Starting from 2016, Indonesia and the Netherlands work together to improve agriculture vocational education in Indonesia.

AgriProFocus led the production of the magazine which was prepared for the visit of the Vice Minister of Agriculture, Nature and Food Quality from the Netherlands as part of the State Visit of the King and Queen of the Kingdom of the Netherlands to Indonesia in March 2020.



In the period of September-October 2020, together with AgriProFocus and EWINDO, vegIMPACT NL organized SMK Training Webinar Series and Urban Farming Design Virtual Competition. Participated by 50 students from 5 SMKs in TVET Cooperation Indonesia-the Netherlands: SMKN 1 Cibadak, SMKN 2 Subang, SMKN 1 Bawen, SMKN 2 Batu, and SMKN 5 Jember.

1 group from SMKN 5 Jember and 2 groups from SMKN 2 Subang were the winners of the UF design virtual competition.

Training modules:

1. Introduction to urban farming
2. Introduction to urban vegetables, fruits, and flowers
3. Introduction to planting media and process / cycle
4. Introduction to plant care 1 (watering, fertilizer)
5. Introduction to plant care 2 (pest control and disease)
6. Introduction to hydroponic and verticulture
7. Composting technique
8. Marketing strategy

Trainers:

Urban Farming EWINDO:

- Rusli Suleiman - Manager
- Andri Hamzah - UF Supervisor
- Deky Budiman - Sr. Consumer Engagement
- Fathurrohman - UF Specialist
- Feky Candra Abadi - UF Officer
- Iqbal Kusnandarsyah - UF Supervisor

YBTS:

- Andi Bachtiar - Data Coordinator SMARTseeds
- Arga Wisnu Pradana - KT Coordinator East Indonesia
- Rahmat Ariza Putra - TFO West Kalimantan
- Rika Bhernike - TFO Morotai



Above: students actively participated in a training webinar.  
Below: students presented their urban farming design virtually before the assessors



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# 7

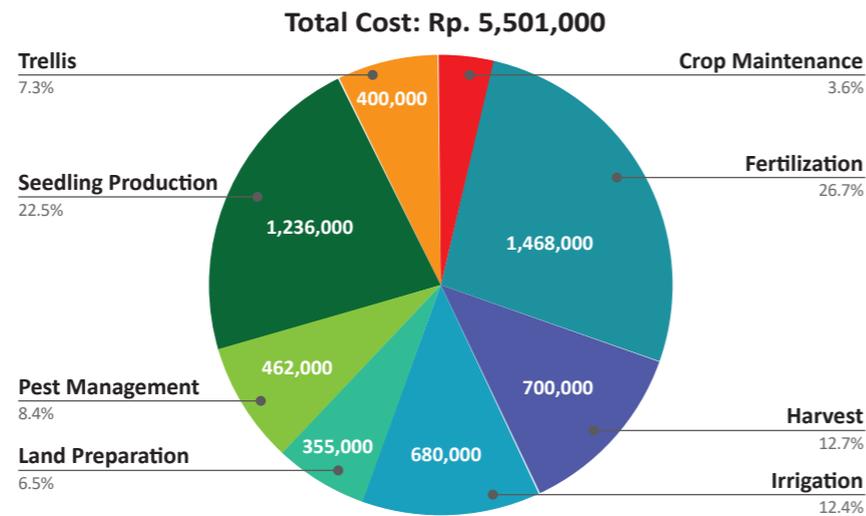
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**DATA, INFORMATION AND  
DIGITAL OUTREACH**

## Data provides useful information

Demplots data collected together with key farmer was analyzed through simple chart. Therefore, a key farmer, like Pak Nurkhalik, could easily understand his cost structure and look into ways to improve cost efficiency.

**Farmer :** Nurkhalik  
**District :** East Kutai, Kalimantan Timur  
**Crop :** Tomato Servo F1  
**No. of Plants :** 2,600  
**Area :** 1,600 Sqm  
**Profit :** Rp. 20,771,500

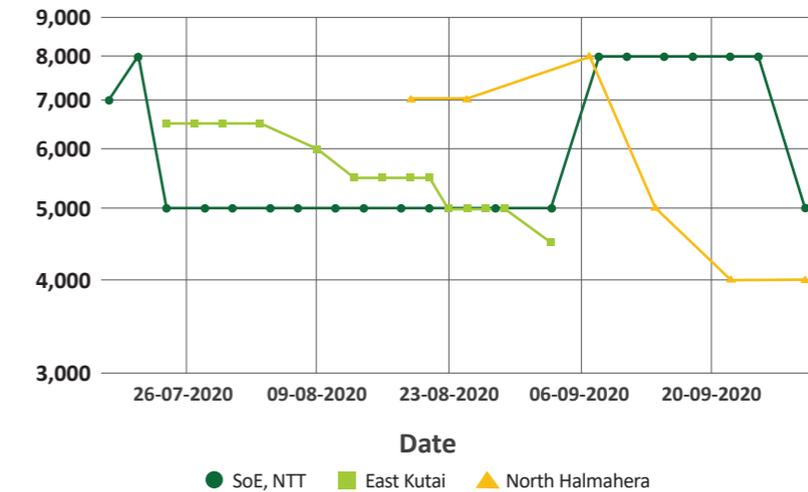


### Activity of Seedling Production

Item	Quantity	Cost (Rp)
Seed nursery plastic bags	500 Gram	45,000
Seeds cost	10 Gram	360,000
Labor hired	1 Day	200,000
Seedling cost	2,600 Seedlings	390,000
Net insects	2 Pcs	100,000
Plastic sheet	10 Meter	50,000
Shading net	12 Meter	75,000
Manure	500 Gram	8,000
Manure	500 Gram	8,000

## Market Price of Tomato in 3 District Carried between Regions

Farmers can learn together about commodity price trend happening during a year. With this information they can decide on planting calendar and perform crop choices accordingly.



Among 3 areas, namely SoE, East Kutai, North Halmahera, it is found that tomato price hit the highest price in June- July and September 2020. Whereas, the lowest is in North Halmahera in late September and East Kutai in early September.

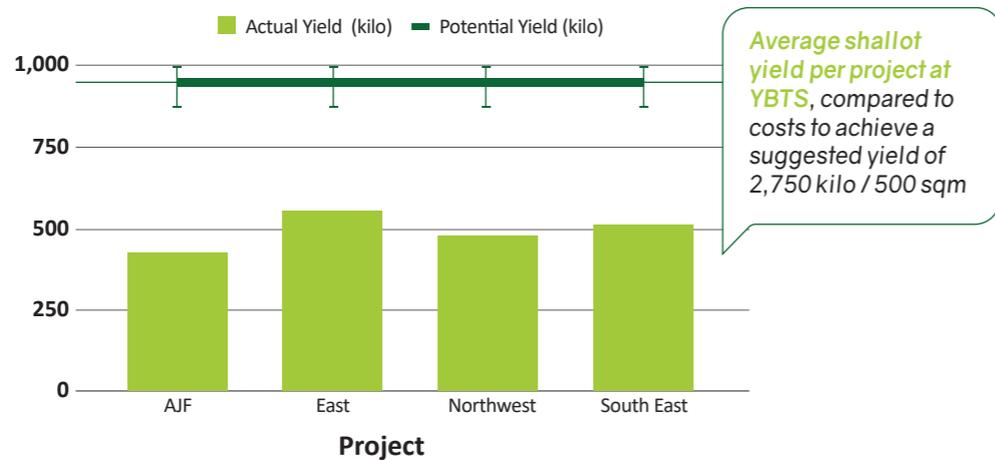
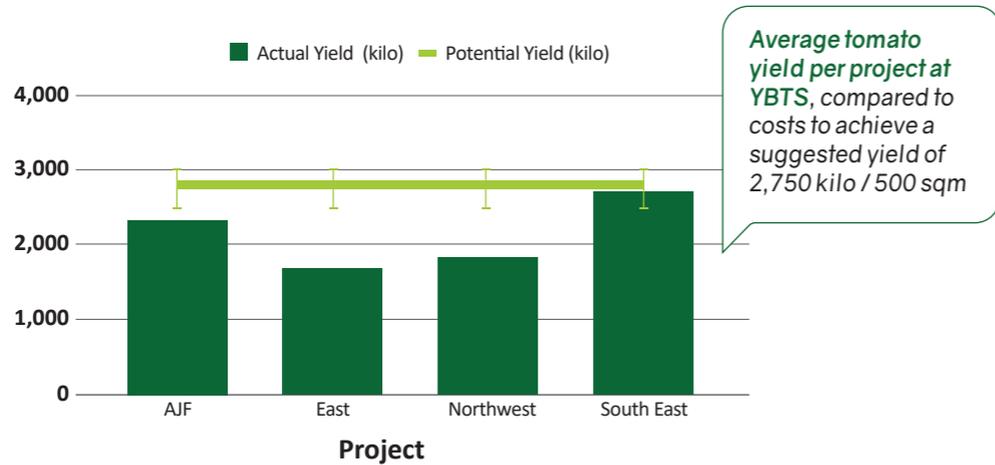
## Yield Performance Crops Analytic

### Top 5 Crop of Average demo RoI per crop for 500 m<sup>2</sup> demo

Crop	Population	Productivity Per Plant (Kilo)	EWS reference for plant population	EWS reference productivity per plant (Kilo)	% Actual Population from EWS reference	% Actual Productivity per plant (kilo) from EWS reference	ROI
Tomato	1,323	1.58	1,000	2.32	132%	68%	714%
Chilli birt type	1,215	1.07	988	0.8	123%	134%	680%
Shallot	25,559	8.4 ton/ha	33,333	19 ton/ha	77%	44%	439%
Cucumber	1,177	1.96	975	4	121%	49%	442%
Bitter Gourd	750	2.65	900	2.65	83%	100%	515%

From the table above, the most favorite crop among key farmers is tomato (89 records). Population per 500 sqm (1,323) has also exceeded the recommended EWINDO guide of 1,000 plants with average yield achieved 70% (1.58 kg per plant) from potential of 2.32 kg per plant.

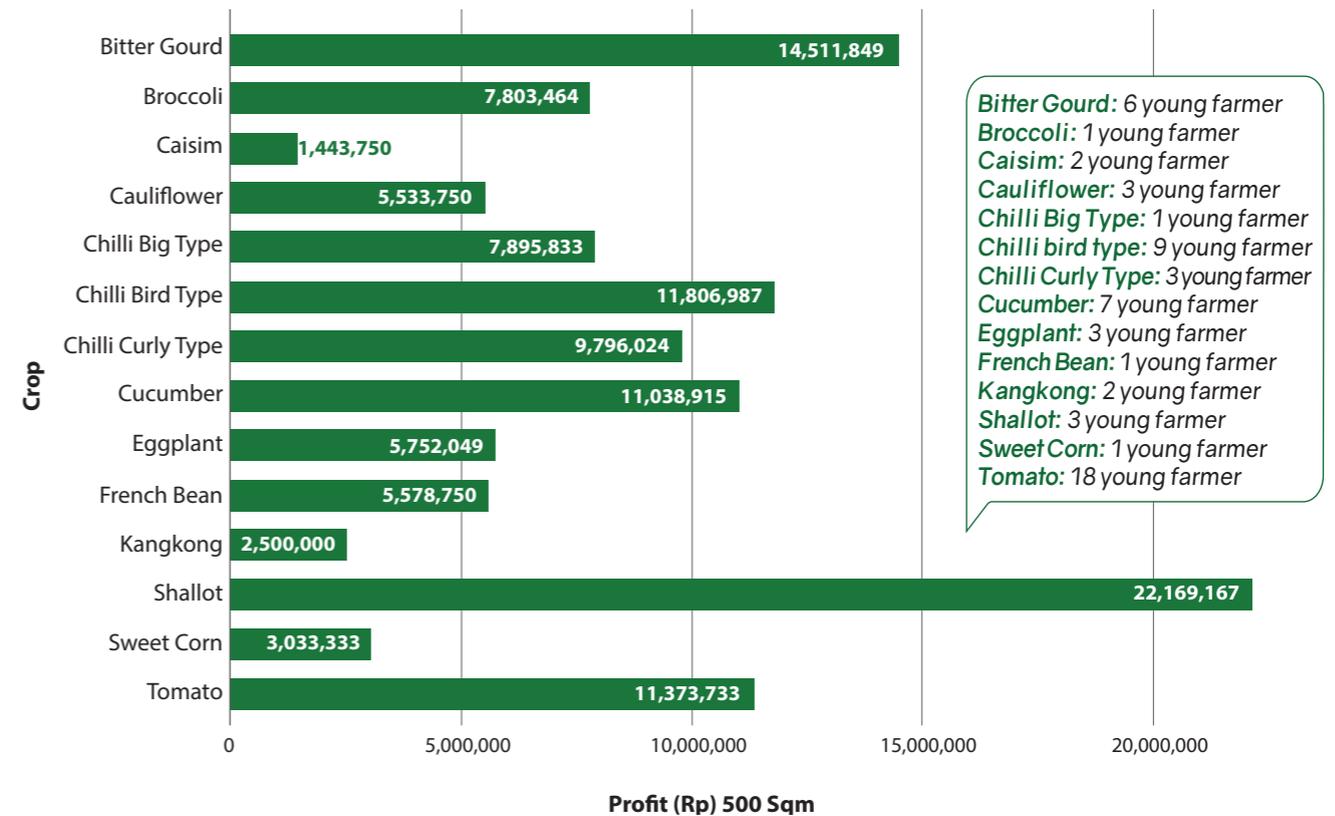
## Farmers can increase crop yields towards potential



### What improvement steps we did?

- Prepare yield collect and record guidelines for TFO
- Inform or Training TFO to use the guidelines

## Profit 59 Youth as key farmers conducted demos based on plants



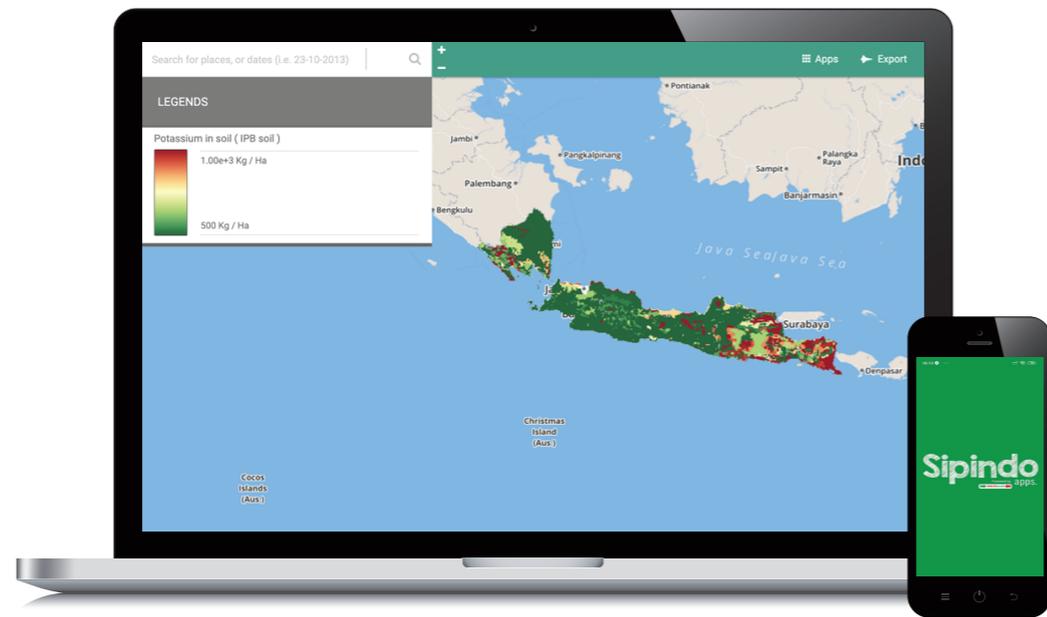
Based on area of 500 sqm, the profession of farmer for youth can provide benefits. Meanwhile, the highest benefit for the shallot plant is Rp. 22,169,167 with 482% ROI. The lowest is the Caisim plant on Rp. 1,443,750 with 137% ROI

# G4AW SMARTseeds

## Information Services

Geodata for Agriculture and Water (G4AW) SMARTseeds is a consortium project funded by the Netherlands Space Office (NSO). This program is implemented by several public private partnerships (PPPs) including ICCO Cooperation, EWINDO, Nelen & Schuurman, University of Twente (ITC), IPB University, and Akvo.

With SIPINDO, we are providing SMARTseeds information services. SMARTseeds is a geodata-based information service which provides reliable information about their farm to farmers and guides them to conduct good and precise agricultural practices.



“Enabling Growth of Smallholder Farmers through Digital Technology”

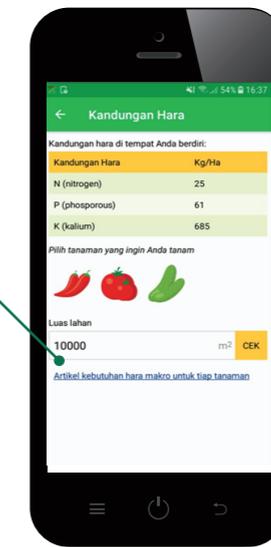


### Features

- Weather and climate forecast
- Precise Fertilizer Advice
- GAP & Pest and Disease Advice
- Online consultation
- Price Info
- Online Marketplace

### SIPINDO powered by SMARTseeds

- Main feature: Location-specific farming advice
- Launched in Oct 2018

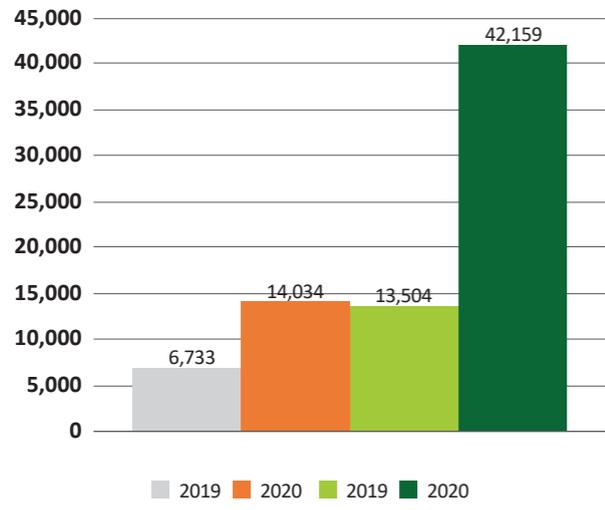


### Achievement in 2020

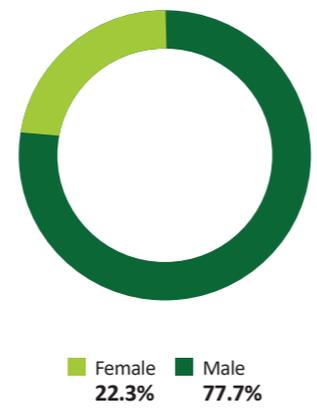
- App users: 76,430, (100% increase YOY)
  - Retention rate: 20%, (80% increase YOY)
- Product development:**
- **New functionality:** ads banner, referral system, chat for marketplace, star rating, point system
  - **New interface:** price, weather, GAP info features
  - **New features:** fertilizer calculator, my farm profile, agri-shops catalogue, irrigation feature
  - **More robust backend record system**

# SIPINDO User Growth

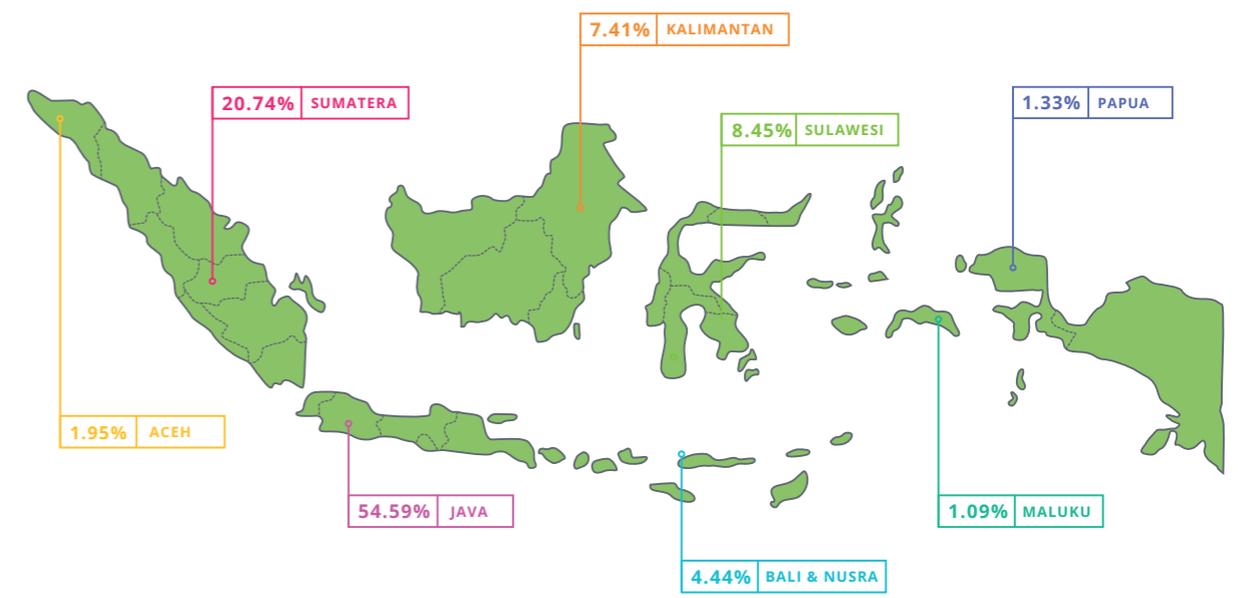
SIPINDO Downloads per Year



Users by Gender



SIPINDO User Distribution

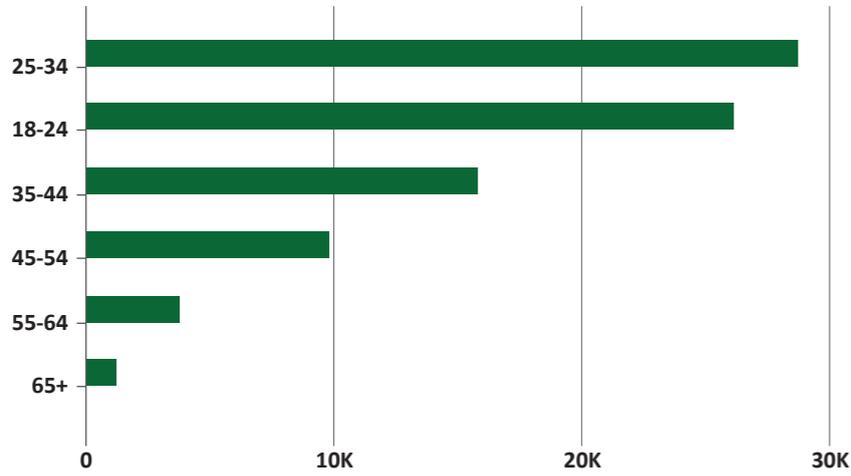


The number of SIPINDO users has increased sharply since the App was launched in 2017.

More publicity and intensive promotion through online platforms resulting a steep increment in 2020.

Based on these figures we can see that digital information is bringing new vibrancy and potential to agricultural practices, especially in engaging young farmers. Meanwhile, male farmers are still dominant in agricultural sector.

Users by Age



Total number of SIPINDO Users by Dec 2020

**76,430**

The area with the highest number of SIPINDO users are Java and Sumatera, in which SMARTseeds project was implemented in West Java, Central Java, East Java, Banten, and Lampung.

By region

ACEH	1,490
SUMATERA	15,852
JAVA	41,723
KALIMANTAN	5,663
SULAWESI	6,458
MALUKU	833
BALI & NUSRA	3,393
PAPUA	1,017

## Capacity Building & Awareness Raising

### Direct beneficiaries

**2,317**

Total beneficiaries throughout 2020

**6,790**

Total beneficiaries throughout y1-y3

**5,497**

Total beneficiaries trained by PP

**14,604**

Total number of farmers that have been trained within SMARTseeds Project



ToF 640  
Expo 180  
ToT 19



ToF 694  
FFD 97  
ToT 54



Webinar 633

### Indirect beneficiaries

**1,282**

Printed materials distributed in 2020

**3,459**

Digital reach by TFO in 2020

**3,5M+**

SIPINDO reach on socmed by Dec 2020

**3,633,322**

Total number of farmers that have been received information from printed materials and digital platforms



Printed materials 457  
Social media 591



Printed materials 825  
Social media 2,868



FB followers 5,703  
FB reach 3,184,891

YT subscribers 803  
YT reach 443,690

## Digital Platforms Impact



Despite difficulties that occurred due to Covid-19 pandemic, we also saw that this pandemic has increased the urgency of our use cases in SMARTseeds to farmers.

Covid-19 conditions have accelerated the digital adoption process for many farmers and it has allowed them to get a taste of how online services could help them solve their problems.

## G4AW evolves into a spin off SE



SIPINDO social enterprise is a spin-off of a development project named SMARTseeds. Our mobile app, SIPINDO powered by SMARTseeds is launched in 2017, and the geo-data services (SMARTseeds feature) is launched in 2018.

A mutual agreement between shareholders (EWINDO, ICCO Cooperation, IPB University, and Nelen & Schuurman) was virtually signed in December 2020 and officially marked the kick-off of the SIPINDO social enterprise.

# Digital Outreach via Social Media

Distribution Area of FB Followers



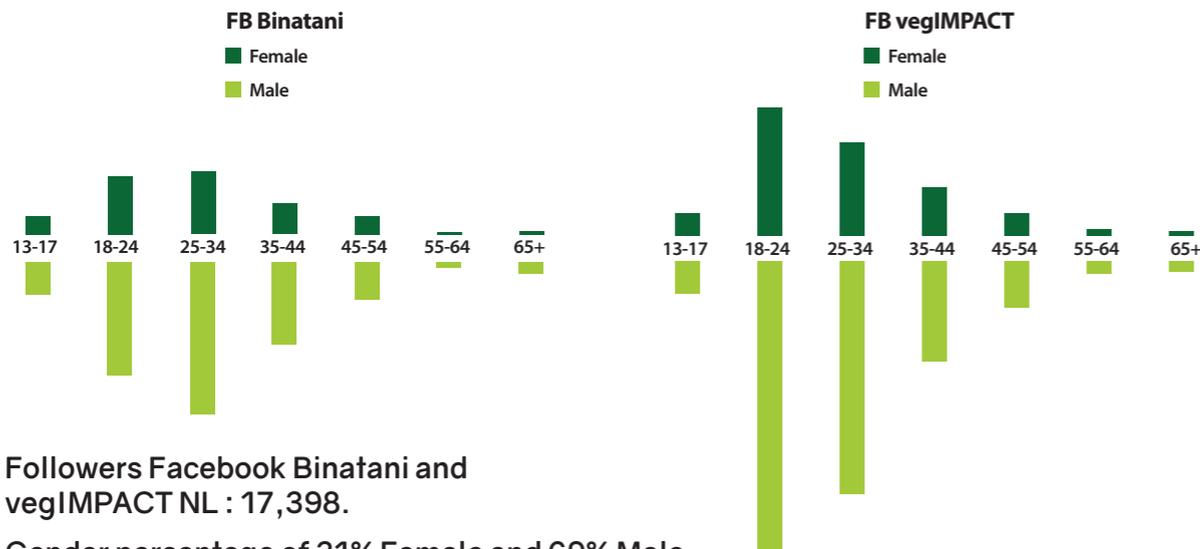
### Top 5 Area of followers Binatani

- East Nusa Tenggara: 717 Followers
- West Nusa Tenggara: 225 Followers
- West Kalimantan: 163 Followers
- North Sulawesi: 160 Followers
- Papua: 144 Followers

### Top 5 area followers vegIMPACT NL:

- East Nusa Tenggara: 530 followers
- North Sumatera: 527 followers
- West Java: 487 followers
- Jakarta: 407 followers
- South Sulawesi: 291 followers

## Social media followers based on gender and age



Followers Facebook Binatani and vegIMPACT NL : 17,398.

Gender percentage of 31% Female and 69% Male

Facebook is a social media platform that is used widely by most farmers in Indonesia, more farmers are reach out through regular postings on @yayasanbinatani and @vegimpact account. Moreover, to make sure that the information is delivered to the right audiences, the targeted audience and location are also set.

## What content we made

### Interactive Content

In social media, Binatani published 4 types of interactive content. This contents were made to create engagement between TFOs, farmers, as well as public.

#### Content from TFOs/Farmers

TFOs and farmers can freely post their activity on our FB Page

#### Activity Update

TFO and Farmer Group/Individual Farmer activity were posted daily

#### Success Stories

Farmer/success stories to inspire and motivate other farmers

#### Technical Messages

Technical message is posted weekly as the guidance

# Digital Events

To reach more farmers and larger audiences, Binatani also held digital events such as: LIVE Sessions, Radio, Podcast, Webinar and Online Field Activity

## Live Sessions

Collaborated with TFO to hold Q&A sessions live through FB & IG. Viewers are able to have direct communication with TFO.



## Radio

Increased awareness and exposure about Binatani, sharing session on agriculture through radio broadcast



## Online Field Activity

Some field activities are also done online, particularly during the pandemic situation. This event also helps us to reach more farmers in different areas.



## Podcast

The podcast talks about TFOs' experience on agricultural topic. Broadcasted on Spotify, Anchor and Google Podcast.



## Webinar

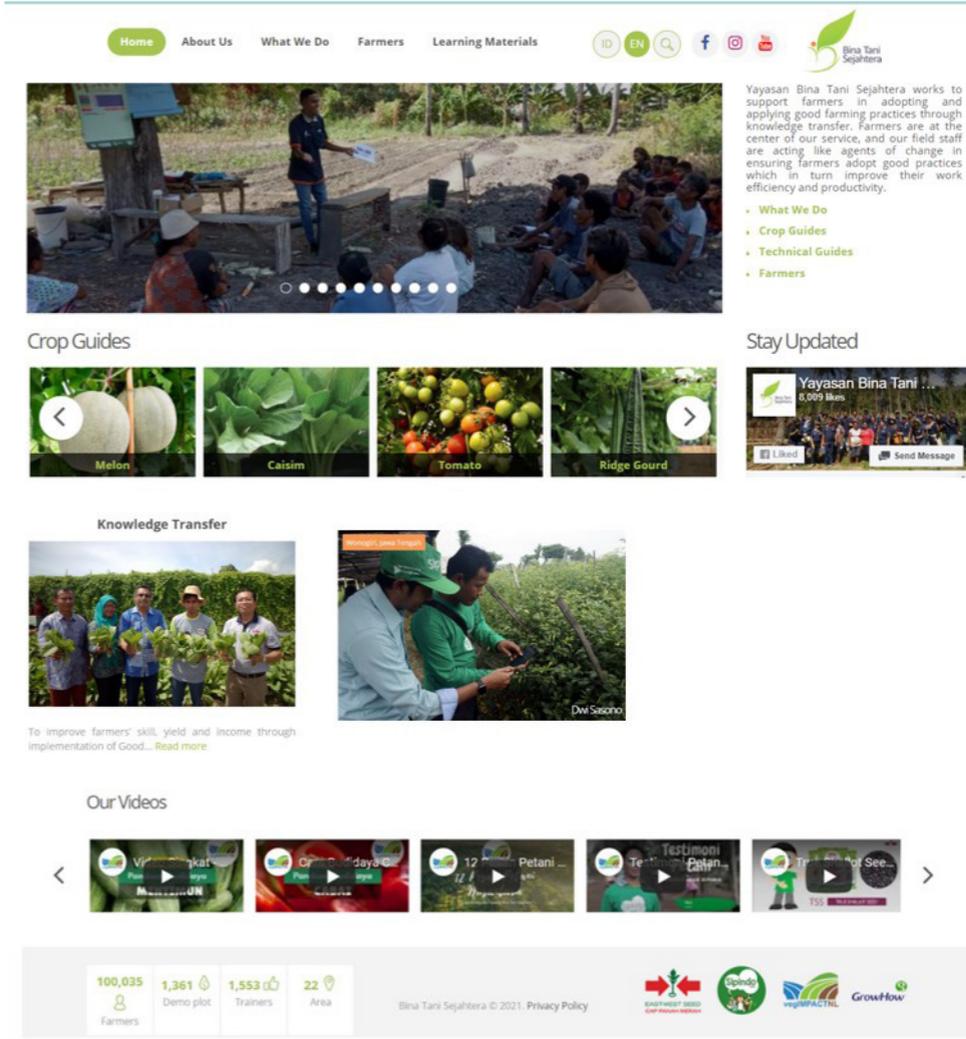
Collaborated with experts and practitioners to get hands-on specific topic.



# Website

YBTS' website, [www.binatani.or.id](http://www.binatani.or.id), provides the following information:

- The foundation's profile
- Projects information on Knowledge Transfer, Integrated Livelihood, vegIMPACT NL, SIPINDO, Women Empowerment and Youth
- Easy-downloaded learning materials: Crop guides, technical guides and webinars
- Stories from assisted farmers
- Digital channels info: FB, Instagram, YouTube

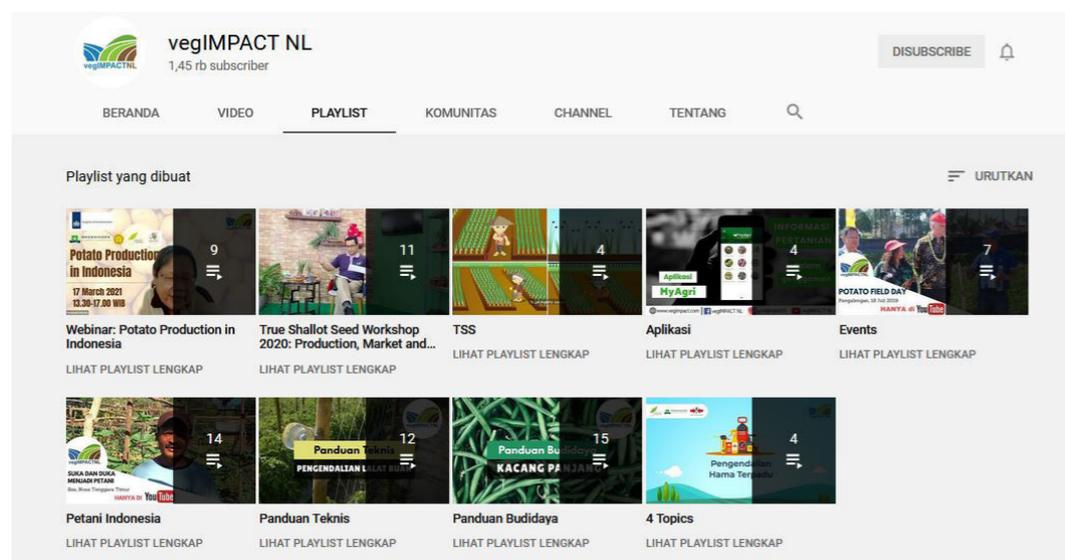


## Youtube

To reach more farmers, YBTS also provides visual information through YouTube channel: vegIMPACT NL. This channel consists of: Crop and technical guide, 4 topics of GAP, farmers stories, youth, field activities, and webinar recordings.

5 top videos:

1. Harvest optimization with fertilizer
2. Spraying technique with pesticides
3. How to prepare vermicompost
4. True Shallot Seed animation: Cultivate
5. True Shallot Seed animation: Harvest



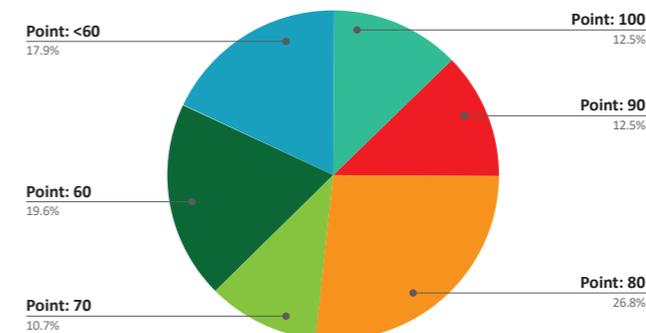
Video	Average view duration	Views
1. Optimalkan Hasil dengan Pemupukan - vegIMPACT NL 15 Oct 2019	1:53 (72.2%)	132,588
2. Teknik Penyemprotan dengan Pesticida - vegIMPACT NL 29 Oct 2019	1:25 (85.3%)	127,309
3. Cara Menyiapkan Kascing untuk Vermicomposting - vegIMPACT NL 5 Dec 2019	2:29 (68.2%)	90,869
4. Penanaman TSS Animation 27 Aug 2020	1:31 (83.2%)	67,010
5. Pemanenan TSS Animation 29 Sept 2020	1:28 (83.6%)	64,222

## Webinar

In 2020, YBTS had conducted a webinar entitled “Fertilizer and How to Apply it”, collaborating with partner PT Lautan Luas Tbk. and our Technical Field Officer on September 24th, 2020. There were 86 participants joined the webinar, including farmers, government agricultural officers, farmers groups and others who interested in Agriculture. The event was also broadcasted on Facebook with 135 viewers.

The participants also able to test their knowledge on the presented materials through 10 questions quizzes, as many as 56 participants took the quiz. They need to passed the minimum score of 60 to get e-certificate.

Percentage of Participant Points in Answered the Quiz from Webinar





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# 8

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RESOUNDING STORIES

## Indonesia : youth engagement in vegetable farming

In 2020, our KT Team in Yayasan Bina Tani Sejahtera, Indonesia served 2,602 young farmers through a series of training on GAP (Good Agricultural Practices) and field day at crop demo sites. Our Technical Field Officers (TFO) are also active in providing technical assistance as needed by the young farmers in order that they can achieve vegetable farming success. These are a few brief stories of the youth farmers from Indonesia.

### Learn and practice together

We have seen how young farmers are being engaged through working together as a group in establishing vegetable demonstration plots. They can learn and practice together. They share knowledge and also plan and implement together as a team to make their crops a success production. A group of 25 young (in between 19 - 29 years) farmers in Cendana municipality, Timor Tengah Selatan district, Indonesia have proven that vegetable farming can be a source of income in addition to what each of the members do for a living such as motorcycle taxis drive, shopkeeper, honorarium teachers, or other types of jobs in nearby town. They grew 1,600 tomato crops and harvested 1,675 kg of fresh tomatoes, an average of 1 kg per plant out of potential 3 kg per plant. They already knew how they can improve production i.e. consistently adopting good practices. They see that vegetable farming is quite promising for farmers as a source of income, and working as a group they enjoy learning together. They are grateful that YBTS Project Officer Hermina Supadi supported the group with learning and working together in vegetable farming.



### Never give up, despite challenges & difficulties



His friends called him Bang Ari (29), a new entry into vegetable farming. He lives in Cerucuk village, Belitung Regency, a scenic island positioned southeast of Sumatera island, Indonesia. Before starting farming on his own, he worked as a fisherman laborer, sometimes he also served as a worker in a vegetable trader's farm in his village. One day, YBTS' TFO Andre Ferinando encouraged him to do his own vegetable farming. Everybody knows that Belitung acid soils are a very big problem for seasonal crops. He started planting sweet corn with a disappointed harvest only 30% yield he got from a fairly harvest possible. However, this did not dampen his intention to plant again. Now this time he decided to plant 2000 cauliflower plants with the hope of getting a satisfactory yield and a high selling price. And he did it. "Being a farmer is a never-ending job, because everyone would eat from a farmer's harvest, if a farmer is giving up then everyone will starve", said Bang Ari who already reaped the results of his efforts.

## Nursery project is fun

During this pandemic time, YBTS' TFO Rika Bhernike took an initiative to carry out a "Nursery Project" in Morotai island, North Moluccas, Indonesia. This project aims to encourage young people in this island to grow the vegetables in their yard when they stay at home. In the first month, there are 20 youths who started a new hobby to plant vegetables at home. We start to grow chili and eggplant. Hope for the next month there are more people joining this project. The youths see this project as a fun and enjoyable activity.



## Why should one go to the city? Farming in the village is profitable

Selfina Bere (20), is one of the female farmers from the Manektob farmer group, Ajaobaki village, Mollo Utara, West Timor province, Indonesia. Initially, Selfina, her friends usually called her Isa, joined the group because of an invitation from her mother, also a member. Isa had been working as a shopkeeper in Kupang, the province city right after graduating from high school.

In short, Isa finally has been involved in group activities assisted by YBTS Program Coordinator Junike Medah and her team since 2019. In the group, she learned a lot of knowledge about seed selection, nursery, fertilizers application, and crop management. After seeing the results of studying in the group demonstration plot and getting the income, she became interested in farming. Isa planted tomatoes and got money Rp 4,000,000 (USD 400) a season after selling her own harvest. Since then, her desire to continue work in the city has receded. Farming is better, and she has a lot of other crops as choices to be planted. According to her, when compared to working in a shop, she now earned 3-4 times from vegetable farming compared to what earned as a shopkeeper. Besides being closer to her parents and family, it turns out that in the village there is great potential to be worked out and get a real better income.





YBTS has also working on women empowerment through women farmers assistance. In 2020, our team has delivered GAP materials and knowledge to 1,393 women farmers.

From the assistance, women farmers are able to cultivate their own field, particularly on leafy vegetable. Therefore, they are not only able to fulfill their household needs but also increase their family's economy.



### From a housewife to a trained farmer

By Dominggus Sesfaot in Nabire, Papua

Orpa Simopraf (37 years), or also called as Mace Orpa, is a housewife in Air Mandidi Village, Teluk Kimi District, Nabire Regency. In early 2020, she formed a women farmer group called Barisen (Waves) due to the low quality, small quantities and high price problems that she used to face while buying vegetables from traders. With the guidance by YBTS' TFO, Mace orpa and the group started to plant water spinach and tomato. They also learned about nursery, fertilization and use of pesticides.

Around 400 tomatoes were planted on an area of 250 m<sup>2</sup>, she could even earn as much as Rp 3,920,000. After this successful experience, each member started to grow leafy vegetables (kale, mustard greens, spinach) in their private gardens, both to fulfill their daily needs and sell to the market. Now, Mace Orpa and the group were not only a housewife but also a trained farmer.

### Sekolah Mama Berkebun, a school for women farmers

By Paschalis Bagus Satrio Utomo in Amahai, Maluku Tengah

Sekolah Mama Berkebun (SMB) is an informal school for women farmers who lives in 5 village, namely Lesluru, Trana, Jerili, Kuralele, and Waru in Teon Nila Serua, Maluku Tengah. This school was created to get women farmers hands-on agricultural practices.

Mama-mama in SMB had received trainings on good agricultural practices by the assistance of our TFO, Paschalis. They were able to select crops' branches, prune, and pollinate non-seed watermelon crops. Not only that, they even able to produce 2 watermelon in the same weight with sweet fruits.



### From Copra Farmers to Horticultural Farmers

By Elisabet Novia in Tobelo, Halmahera Utara



Mama Nur is also a member of SMB. She used to be a copra farmer with uncertain income. Because of relatively long time to plant and a short time to harvest, Mama Nur could only earn around Rp 3,000,000/harvest season. However, after she get trained by our TFO, Mama Nur is enthusiastic to learn about vegetable crops. She and her husband started to plant water spinach, mustard and bitter gourd. Monitoring was also done regularly to make sure her crops grow optimally. At the end of season, Mama Nur managed to get a total yield of around 380kg bitter gourd from 100 populations, with a selling price of Rp 5,000/kg. Becoming a horticulture farmer, she got a total profit around Rp 3,850,000. She realized that being a horticultural farmer is indeed more profitable.



## Ibu Salama, a resilient farmer in Fakfak Regency

By Roberd Abanaf in Fakfak, Papua

Ibu Salama is one of YBTS assisted framers from the Pitak farmers Group in Pirma village, Central Fakfak, Papua. She is very proud of the assistance from YBTS because for her, YBTS approach through regular mentoring and trainings had helped her to understand more about cultivation.

From YBTS, she learned about new varieties of crops such as melons, onions and cabbage. By applying the knowledge that she got, she realized there is an economic increase in family as she could sell her harvest regularly. "Now, I can send my kids to college," said Ibu Salama.



## Watermelons for early childhood consumption

By Rika Bhernike in Kepulauan Morotai, Maluku Utara

YBTS in collaboration with PKK (family welfare program) and Paud (early childhood education) teachers in Morotai were cultivated fruits. This program is an initiative of the of the Morotai Island Regency, Ibu Sherly Laos, who asked YBTS assistance. The crops were done by minimizing the use of fertilizers and pesticides, as it would be consumed by children in the healthy food consumption program which is carried out every Saturday.

Paud in Sakita village is one of the demonstration plot that had successfully harvested watermelon and melons. Although it was not as big as the farmers' harvest, but the fruits still had a sweet taste that was loved by students in Sakita Village Paud.



## Sweet Corn, Sweet Smiles

By Ganang Gaga Prakoso, Biak, Papua

Mama Marandof is one of the women farmers in Bakrobo Village, Oridek District, Biak Numfor Regency, Papua. At the beginning of her farming days, Mama Marandof's demonstration plot area was filled by Bonanza F1 Sweet Corn. In her first harvest, she was able to make a profit of around Rp 2,503,000 out of her yield. Her successful experience has motivated Mama Marandof to be more active in cultivating vegetables. She even expended her field to 1,000 m<sup>2</sup> to plant long beans, kale, watermelon and cabbage. Out of her garden, Mama Marandof can pay her children's school fees and family needs.



In 2020, our team delivered sessions of ToF on Seed selection and nursery to 2,653 farmers, which of 1,184 are women farmers.

Selection of good quality seeds and establishment of good nursery will ensure high germination rate and good vigour of young seedlings before they can be transplanted into the field.



### Starting from good quality seeds

By Ganang Gaga Prakoso in Biak, Papua

Ibu Warnares and her fellow in Afefbo Village, East Biak District, Biak Numfor Regency, Papua Province enjoyed learning and working together on seedling raising for their needs.

Ibu Warnares said that this was her first time doing a nursery. Previously, she used a direct seed planting system in the field. As a result, many seeds did not grow due to insect attacks and could not adapt properly due to harsh environmental factors. She was very happy with the training from the YBTS field staff, apart from getting new knowledge, she was sure that the continuous assistance could improve further her livelihood.

### Whenever plastic tray is not available, bamboo pots are very useful

By Elisabet Novia Listiawati in Tobelo, Halmahera Utara



These groups of farmers from the Higaru group in Toliwang village, Halmahera District, Maluku Utara Province use cut bamboo pots as a substitute of plastic seedling trays to nurse Cabbage seedling. They learned and practiced together about vegetable cultivation techniques. The bamboo pots nursery is very easy and fast to do by farmers, and they get better, healthier and more uniform seedlings. Besides, bamboo can be used more than once in the nursery.

### Change is possible, and learning make it happens

By Sepriyason Kono in Manokwari, Papua



Farming is nothing new for the Papuan people, especially the people of Warmare District, Madrat Village. They do farming from generations to generations largely without significant change of practices, They practice shifting cultivation with slash-and-burn and it poses impact to the forest and environment degradation.

Together with our partner Yayasan Cinta Papua (YCP) team, we promote cultivation system on a piece of land sustainably starting with good land preparation and nursery. Making good raised beds, prepare seedlings by using banana leaves, followed by good practices in crop maintenance are key to the success of making a significant change. We love to see a group of farmers in this village learn and work together.

YBTS have seen a promising outcomes of our technical assistance to local Papuan farmers, and we do hope more progress further.

## Curiosity to access new knowledge

By Andre Fernando in Belitung



Pak Ade (56 years old), was trying to plant cauliflower, cabbage and patsai for the first time. At first, he was in doubt whether these plants can be cultivated in lowlands such as in the Belitung region where the weather is very hot.

Through assistance from YBTS, Pak Ade was given the information that there are varieties specific to the lowlands condition. Next, it is proven that the seedling has been planted successfully. During the transplanting, all seedlings were healthy and uniform. With a smiling face, he and TFO Andre planted the seeds together in the field.

“

We shouldn't quickly be satisfied with the knowledge we already have, but in-still curiosity about new knowledge and experiences. - Pak Ade

”

## Key success factors for good nursery

By Petrus Aprido Faot in Waikabukak, Sumba Tengah



Gadung Farmers Group is located in Ngadu Mbolu Village, Umbu Ratu Nggay Barat District, Sumba Tengah Regency, NTT Province.

A group of 15 members (7 men and 8 women), used to sow vegetables saved seeds by spreading directly on seedling beds. The results was bad, merely 50-60% of emergence because many seeds and young seedlings were eaten by insects, and the growth were not uniform. Also they tended to do transplanting when the seedlings are 1 month old. When they uprooted the seedlings at that age, this posed a risk of roots break off which hampered growth when transplanted into the fields.

After participating in training session from YBTS field staff, they began established a nursery house of 3 by 3 meters in size sheltering seedling raising process in a good manner. They bought good quality seeds from local kiosk. They use coconut leaves as roofing. They used banana leaves or small plastic tubes to contain good mixture of topsoil and compost as media. They watered young seedlings regularly. They have succeeded in raising small chili seedlings at 85% or more emergence rate. They also learned that 3 weeks age of seedlings is proper timing for transplanting as seedlings roots are well contained.



Pests are the factor which affected farmers' yield lost. We help the farmers through an approach on Integrated Pest Management as the part of Crop Protection. We share pest identification, monitoring and intervention of pests to farmers. Thus, the farmers will be more wisely in use the pesticide. Pesticide use is also related on farmers safe and health. We also introduce to the farmers how to apply pesticide properly, to avoid the pesticide exposure to the farmers and environment.

In 2020, we have been trained to 2,783 farmers, 1,131 of which are women farmers for the topic of Crop Protection and Farmer's Safety.



### The importance of knowing natural enemies

By Elisabet Novia Listiawati in Tobelo, Halmahera Utara

Pak Fauzi is a farmer from Popilo Village. Initially, he worked as a member of the Halmahera Utara Regency DPRD in 2014-2019. Pak Oji, his nickname, has started planting vegetables in 2018. He even invited the farming community in the village to grow vegetables.

Pak Oji focused on cultivating Laba variety of curly chillies. However, on 27 DAS, some of his crops are attacked by the gemini virus, with mealybugs as the vector. Pak Oji also diligent in monitoring his crops to determine what actions need to be taken to control the pests. Knowing his enemy, Pak Oji decided to use pesticides with the abamectin as the active ingredients for the first step. He also gave plant nutrients to restore his crops so that his chillies still able to grow optimally.



### Monitoring and identifying, keys to protect crops

By Ganang Gaga Prakoso in Biak, Papua

After the integrated pest management trainings, the farmers in Biak, Papua, were trying to applied their knowledge through monitoring and identifying pests and diseases activity. In this activity, each member of the farmer group was given the task of finding pests and diseases along with the symptomatic that exist in each crops. Based on the results, leaf worms or Plutella were found in the crops. After being analyzed and discussed, they decided the best action that can be done is mechanical control.

Ibu Rumbiak (50) said this activity was very good to do, "Before the training, we have to spray the pesticides to control pests. Now, I understand the importance of monitoring our crops to know what types of pests and diseases that are attacking the crops so we can find the best solution."



Fertilization or Crop Nutrition is the second topic of our Training of Farmers Activity. The purpose is to deliver the knowledge to the farmers related the 4R's principle (Right Fertilizers, Right Dosage, Right Time, and Right Place). At the end of the ToF and demplots, farmers will apply the 4Rs principle and get the impact in increasing yield and cost efficiency.

In 2020, our team delivered sessions of ToF on Fertilization / Crop Nutrition to 1,801 farmers, 849 of which are women farmers.



## Measuring right fertilizers for right plants

By Paschalis Satrio Utomo in Teon Nila Serua, Maluku Tengah

Fertilizer is important in planting, lack or excess of it will hinder the growth of the plants or even make our plants die. Therefore, our Technical Field Officer provides trainings on fertilizers and fertilization practices for farmers in in Lelsuru Village, TNS District, Maluku Tengah Regency, Maluku.

Through the trainings, the Women Farmers Group and BABINKAMTIB-MAS (community police officers) learned to identify fertilizers based on nutrients, plant needs, and right dosage per plant. From the trainings, farmers understand the difference between organic and inorganic fertilizers in terms of their function.



## Crop nutrient from waste efficiency

By Anita Ariani in Blitar, East Java

Pak Rio is a farmer in Wonorejo Village, Blitar Regency, East Java. He has been cultivating vegetable in his house yards, such as lettuce, caism, cabbage and celery. Apart from that, he also maintained various types of fish for consumption. As he realized the amount of water waste from his fish pond was quite large, thus he decided to utilize wick method to watering his crops. Whereas, for fertilization, he used chicken manure which then processed into bokashi fertilizer by adding NPK. By making use of natural waste, Pak Rio managed to get yield optimally with minimum expenses.

## Fertilizer and its essential role in crops

By Elies Winfried Kitu in TTS, SoE



Ibu Yosefina Neolaka is one of the members of the Tahatoen Farmers Group in Kuatae Village, SoE, TTS District. As a farmer assisted by YBTS, she sent her gratitude because our TFO has taught them about cultivating vegetables. "Before, we only planted water spinach and mustard greens. We don't how to take care the crops properly. We don't know the function and dosage of fertilizers. As well as crop rotation, which makes our harvest decreasing," she said. With the help of YBTS, Ibu Yosefina came to know the importance of nursery with recommended techniques. She also able to calculate the right amount of fertilizers for her crops. This never been experienced by all members of the group. "It turns out that growing vegetables requires learning. To get good harvest, we must to be a smart farmers. Thank you, YBTS," she added.

## Composting bokashi, a nutrient-rich fertilizer

By Frinto Sopaba in Talaud, Sulawesi Utara



The members of Sanggigilang Farmers Group learned how to make bokashi fertilizer in fertilizing training. The purpose of bokashi fertilizer is to ripen the manure that farmers often use in raw conduction. Activator EM-4 and additional ingredients such as husk, charcoal, and forage were used to ensure the fertilizer was ripe and ready to use.

Jerri Takalawangeng, on behalf of the group, is grateful to the TFO of YBTS for giving them training on composting organic fertilizer. Such materials, particularly forage and rice husks, are actually abundant in the area. However, because of the lack of knowledge, the farmers used to leave it without being processed into goods.

### Farmer Stories



### Water use and conservation

Efficient use of water is critical not only for the sustainable crop production but also for the environment. YBTS has placed conservation agriculture, particularly on water use into interest. Drip irrigation and water trapped has also practiced by our farmers to support water use efficiency, it is also proved that farmers are still able to have high crop production.

### *Drip irrigation for vegetable crops*

By Elies Winfried Kitu in TTS, SoE

Sepri Faot is a member of the Nekmese 1 farmer group in Benlutu village, Batuputih sub-district, TTS district. In 2018, he started to cultivate vegetables on the group's demonstration plot. Sepri stated that the use of drip irrigation is a big help for them as they could maintain the water supply from the reservoir as well as on watering time. With the drip irrigation, they were able to plant 1,819 trees of Nirmala F1 cayenne pepper on an area of 5 acres land, with an income of Rp 10,395,000.



### *Using water trapped in the field*

By Elies Winfried Kitu in TTS, SoE

Pak Nimrot Tahun implementing 3Rs (recharge, retain, reuse) by utilizing water trapped in his field. According to him, it is beneficial because it can reduce soil erosion. When rains fall down, the water will be caught in the hole and can be used for watering later on. Not only that, the water hole absorption can also keep the soil fertile.

By applying 3Rs, Pak Nimrot is able to plant tomatoes on land that previously used for growing corn.

After creating terraces, the tomato crops that he planted are indeed more fertile. He is happy because he could get more results than before.



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