TAY JUHANA FOUNDATION

ANNUAL REPORT 2022

Securing Our Food from Crisis

CONTENT

OUR VISION

An ensured food security for humanity and the achievement of relevant Sustainable Development Goals through **environmentally, socially, and economically** sustainable agriculture system of suboptimal wetland, lowland, and flatland.

OUR MISSION

CONDUCTING RESEARCH

Catalyze research and development to advance sustainable agricultural innovation on suboptimal wetland, lowland, and flatland.

CONSULTING

Provide consultancy for independent and collaborative works on sustainable agriculture practice of suboptimal wetland, lowland, and flatland.

EDUCATING

Educate all the relevant stakeholders on effective water management system in wetland agriculture.

ADVOCATING

Facilitate the advocacy to stimulate change towards food resilience through relevant policy recommendations.

ROAD MAP

2018

CONDUCTING RESEARCH

Scientific Research and Innovation

2025

CONSULTING

Suboptimal Land Farming

PRESENT

EDUCATING

Communication Tools for the Needed Change

2030

ADVOCATING

Building Alliance to Influence the Agrifood Policy

FOREWORD

The Year of 2022 has exposed us to the fragility of the global food system. Starting from the pandemic impact that amplified the rising food price, supply chain disruptions that caused food scarcity, and Russia invasion to Ukraine that affected the global supply of essential commodities such as energy, wheat, and fertilizer. One of the solutions to strengthen our resilience to global shock is through the enhancement of the local food system.

The availability of lands to produce food plays a crucial role in ensuring the healthy food system. The dream of Tay Juhana Foundation (TJF) is to enhance our resilience in providing food for humanity by utilizing suboptimal lands, which is the dominant type of soil in many countries such as in Indonesia. Hence, improving suboptimal lands can be a great way to boost the local food system. This notion is increasingly important since in the next few decades the world population will also increase which leads to higher food demands. To achieve the foundation's dream, we delve into our works to form solid knowledge-based information about innovation in solving our food problem, especially on food production security.

On the other hand, we are also aware that the agriculture sector is among the major carbon emission contributors. Therefore, we keep on striving for the most effective way in carbon reduction, especially on peat landscapes. Looking at what we have attained this year, we are glad to find that TJF research and publications have helped other fellow researchers to support their studies, as well as our farmers collaborators that worked with us to identify soil nutrition cycle that improve their organic farming.

Finally, this report will provide you with a brief summary of TJF achievements throughout the year. We thank all stakeholders that put a meaningful contribution to our works. Our big dream in providing food for humanity will not be possible without your continuous support.

Warm Regards,
Us

The reason we exist

Hunger is the source of impatience and anger.

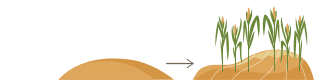
While some people go to bed with empty stomachs at night, there are also people who are overweight and obese. Today, we still have over 2 billion people who do not have regular access to food with 704 million living in hunger.

To feed the people, we face triple challenges of growing population, decreasing arable land, and of course climate change. We must start to find the answer now to prevent disaster for tomorrow, next month, next year, or next decade.

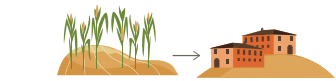
We have to think bigger in space and longer in term about how we can create a better agri-food system to fulfill global food demand.

TJF exists to offer this radical idea: to work with lands that are often forgotten and deemed as unproductive. We refer to this land as suboptimal lands.

Suboptimal lands are available abundantly. They are accessible to regional and local communities. Leveraging suboptimal lands to produce food enables more nodes of area to have local resilience in securing their food supply.



20,000 - 30,000 ha/year
Conversion rate of non-arable to arable land



96,500 ha/year
Conversion rate of arable to non-arable land

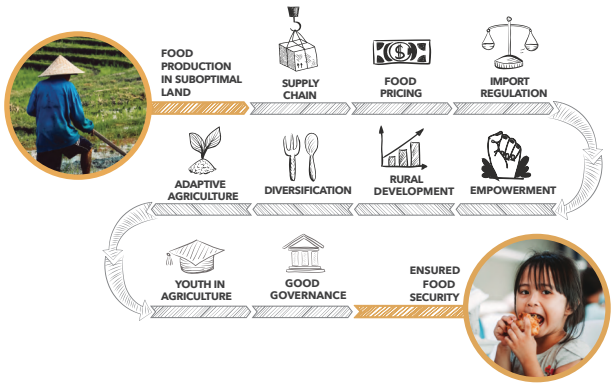
Food from suboptimal lands.

We can unlock the potential of the lands for food production. To ensure everyone can eat, we also need to work on the bigger picture.

First, we work on where the food can grow. We strategize to support sustainable food crop production in suboptimal lands.

Second, we work on how the harvested food can reach people. We eliminate factors that can affect people's capability to access the food. This involves the need to fix the food and agriculture system.

Lastly, we work to ensure people have access to food at all times. We deal not only with the current situation but also the future. To strengthen the system, we must strengthen the core, i.e. the human.



“

Always contribute to society. If you cannot contribute to society, do not be a burden to society.

Tay Juhana
1938-2016

OUR GOAL IN 2022

*"Promoting TJF as preferred NGO on low carbon agriculture especially on peatland through **intriguing local and global** knowledge sharing events and **impactful** program partnership."*

Asia Flux - Kuching, Malaysia

Kedaireka - Pulau Burung

YSEALI - East West Center, USA

CONVEYING OUR MESSAGES THROUGH DIGITAL ENGAGEMENT

To safeguard our food security, we need to gather more hands and heads, so that we can boost up the power, do more efforts and create better impacts. Therefore, we are encouraged to have knowledge sharing events and collaborate with external partners with the same vision.

Along the time, we have reached some friends in more than five countries through our social media, especially Instagram. These friends of ours shared the same dream to safeguard our food security. As an organization that focuses on the research on suboptimal land agriculture, TJF disseminated the findings and encouraged the youth to think more about the land for future food.

As our main social media platform, the contents on our Instagram has reached thousands of people in 2022. Best engagement we have reached was the content about our main event, #tellyourstory since it encouraged our audiences to take an action.

SCAN *here to access our social media*

2022 Publications

The world shifted (again) in 2022, where we were welcomed to start offline activities following the active cases of COVID-19 continuing to fall down. Yet, significant events have happened, such as the Russia-Ukraine war, climate change, global economic recession, etc. led to the threat of food crisis in various countries.

Not only doing the desk research, this year we managed to do field research as well. In 2022, we focused on the contribution of providing scientific documentation for sustainable agriculture on suboptimal land, specifically the low carbon agriculture on peatland agriculture. Our research results were disseminated as scientific articles, e.g., articles in journals, brief and opinion editorials.

TJF BRIEF

1. What Could be the Strategy to Strengthen Our Food System
2. Re-visiting Government of Indonesia Strategies on Food Crisis and Farmers' Resilience

SCAN to read

OPINION EDITORIAL
ON ONLINE MEDIA

1. ***"Gambut untuk Piring Kita"*** on Geotimes.id
2. ***"Krisis Pangan di Depan Mata, Jangan Sampai Kelaparan Menghantui Kita"*** on Geotimes.id
3. ***"Peran Lahan Gambut dalam Memenuhi Kebutuhan Pangan Lokal"*** on kmplhkranita.org

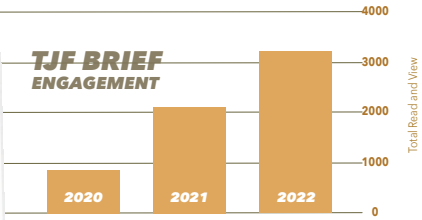
SCAN to read

JOURNAL
ON JURNAL ILMU PERTANIAN INDONESIA

1. Kontribusi Pertanian Berkelanjutan di Lahan Suboptimal Terhadap Aspek Lingkungan dan Sosial Ekonomi di Kecamatan Pulau Burung, Provinsi Riau
2. Mainstreaming sustainable use of suboptimal lands to support food security in Indonesia.

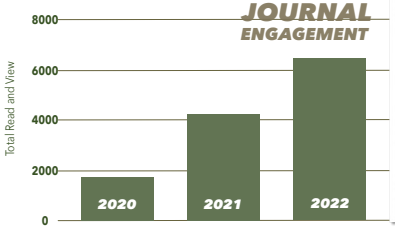
SCAN to read

OUR RESEARCH HAS HELPED FELLOW RESEARCHERS



7.504 view or read, 48.5% increase compared to 2021

Compared to last year, the visibility and accessibility of our articles have increased decently. Yet, our journals have contributed to fellow researchers' study.



6.728 view or read, 115% increase compared to 2021

12 citations

Empowering Fish-Farmer through Coastal Field School: Towards Sustainable Aquaculture Practice

cited by ↓

Ove Hoegh-Guldberg
PhD · Managing Director
Institution and department
The University of Queensland · Global Change Institute
Skills
Ecology · Water Quality · Climate Change + 10 others

Dony Rachmanadi
Doctor of Forestry · Senior Resea...
Working on soil microbe community at post-fire tropical peatland area
Institution and department
National Research and Innovation Agency · Research Center for Ecology and Ethnobiology
Skills
Biogeochemistry · Peatlands · Environment + 1 other

Gert-Jan Nabuurs
Prof. dr. · Professor
Institution and department
Wageningen University & Research · Wageningen Enviromental Research
Skills
Bioenergy · Environmental Science · Forestry Research + 14 others

Budi Hadi Narendra
Dr · Senior Researcher
Institution and department
National Research and Innovation Agency (BRIN) · Research Center for Plant Conservation, Botanic...
Skills
Water Resources Management · Hydrological Modeling · Watershed Management + 1 other

Linda Steg
Professor of Environmental Psych...
Institution and department
University of Groningen · Department of Psychology
Skills
Energy · Energy Policy · Energy Conservation + 3 others

Olayemi Mikail Olaniyi
BTech,MSc,PhD · Professor
Institution and department
Federal University of Technology Minna · Department of Computer Engineering
Skills
Mobile Robotics · Information Security · Image Processing + 43 others

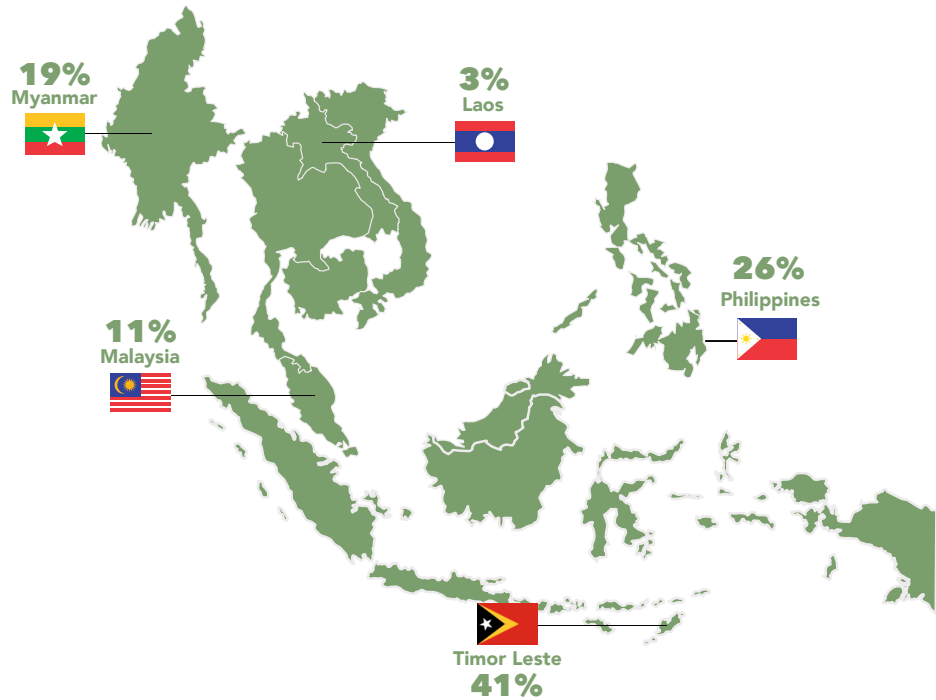
cited by ↑

Lesson learned from the development of sustainable rice farming in peatland

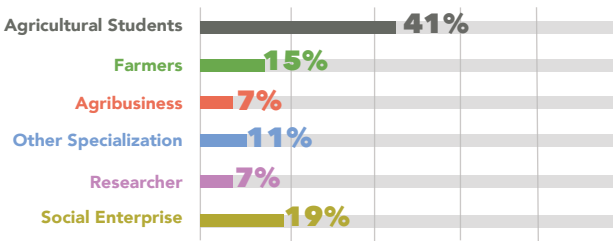
SHOWCASING OUR RESEARCH TO THE WORLD

CAIC

In June 2022, TJF was invited to be one of the speakers on Circular Agriculture Innovation Challenge (CAIC) under the sub topic about Agriculture and Innovation. Zara, as a program manager, represented TJF to introduce and explain about our research and works. CAIC is an innovation challenge program that focuses on circular economics in agriculture while understanding the different challenges of farmers and small-farms today in order to achieve a healthy food system across Southeast Asia. Aiming to provide a more engaging learning experience on the topic of modern agriculture regarding a new economic model, a circular economy. The event was conducted on 18 June - 2 July 2022 virtually and joined by 35 selected participants across Southeast Asia Countries.



Participants countries and their occupations



ASIA FLUX

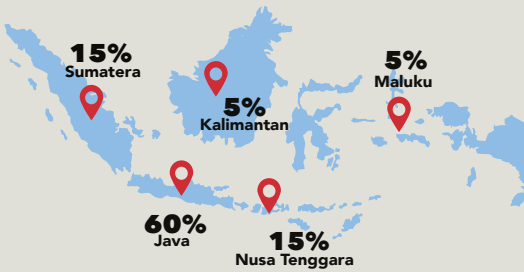
Presented TJF carbon research to 200 delegates from 10 countries and expanded the network to 30+ organizations. The forum has a business model where private sector, academia, and government synergizes for mutual benefit. On 17-22 September, Zara and Ihsan were deployed to attend the AsiaFlux Conference in Kuching, Malaysia. They managed to be invited to present our carbon flux research in front of around 200 international peatland scientists. It was a great opportunity to showcase Sambu Group best practice, gaining network to 30+ global organizations, and knowledge exchange.

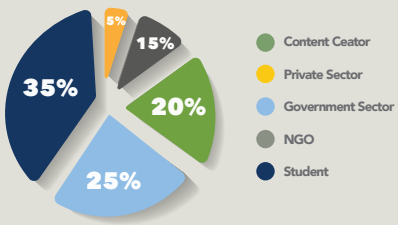
YSEALI

In May 2022, Juni participated in a program named YSEALI Academic Fellowship on Environmental Issues and Natural Resources Management and became one of the representatives from Indonesia. The program took about two weeks (16 May - 2 June 2022) in Hawaii, USA, and involved 19 participants from Southeast Asia countries. In addition to participating in the program, she was chosen as a panelist in the Conservation & Community dialogue at that time. Juni then introduced TJF and gained relations related to the program that could be carried out in the future.

TYS

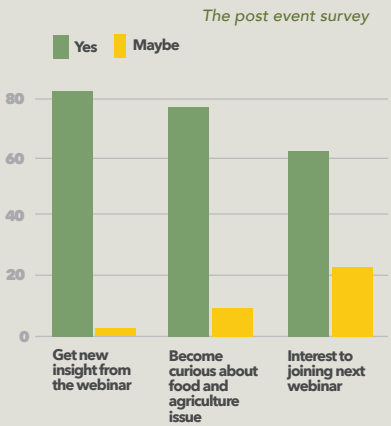
#tellyourstory is a digital story telling competition from TJF which organized annually to celebrating the World Food Day. In this #tellyourstory 2.0, we took the theme "Securing our food from crisis" and collaborated with Niskala Studio and supported by Yayasan Emas Hitam Indonesia, Pongo Ranger Community, ISEC Indonesia, and AIESEC in Universitas Hasanuddin. The event was held on October 1-16 2022 virtually divided to one-day workshop, two-week ideation, and final day on World Food Day. We got 18 applications that came from all over Indonesia with diverse backgrounds. At the end we selected 5 finalists to join our program. The event successfully produced a well-delivered documentary video that concerned the food crisis in Indonesia through different ways.





The participants location and their occupation

CAMPUS VISIT



The post event survey

In 2021, TJF launched a Campus Visit program with the aim of encouraging our fellow students to hand in our efforts to do precautionary measures of all the uncertainties in the future. Students are the future holders. The spirit and enthusiasm shown by the students gave us force to hold the continuity of this program. Campus Visit 2022 focused on creating and disseminating sustainable agriculture practices, especially on the suboptimal land, to be more engaging and tailored. This year, we collaborated with the Department of Agricultural Extension and Communication, Gadjah Mada University, with 86 students attending the session.

LOW CARBON AGRICULTURE AND HOW IT BENEFITS THE FARMERS

We have been researching low carbon agriculture since 2020. At that time, our carbon balance results revealed that the coconut plantation sequestered more CO_2 than it emitted, at rate 78.43 t CO_2e per ha per year. It was quite surprising because the exsiting research and publication have been telling us there's no way peatland agriculture can be carbon positive. This finding led us to collaborate with experts from Bogor Agricultural Institute (IPB University) to explore more about low carbon agriculture in Pulau Burung District.

In 2022, after research on peatland and discussion with experts, we found the scientific reason behind the higher carbon sequestration. It is a thing called the nutrient cycle technique that has been applied for more than two decades. Nutrient cycles omit the use of herbicide though manual weeding of unwanted weed under coconut canopy. The decomposed weed provides nutrients to the coconut which equals to 100 kg of Triple Super Phosphate (TSP) and 700 kg of Potassium chloride (KCl). These two are the major fertilizer component. The application of Nutrient cycle also omits the budget for external input of synthetic fertilizer to the plantation.

To disseminate the knowledge to the farmers, TJF and IPB University conducted socialization in three villages, Pulau Burung, Suka Jaya, and Hibrida Jaya. The socialization was attended by hundreds of farmers. We hope with our effort we can help improving the land quality and yield.

Pulau Burung is a sub-district in Indragiri Hilir Regency, Riau, Indonesia. Where a large coconut plantation lies and is managed by the Sambu Group and the local community, this is where the research begins.

In 2022, we joined forces with the experts from IPB University to develop a science-based method called nutrient cycle that will enable coconut farmers in Pulau Burung to thrive. This study started with young researchers from IPB University, supported by our researchers, to develop and deliver the method that let the farmers be able to minimize their chemical fertilizer use. Two rounds of socialization have been conducted to promote this method in three villages in Pulau Burung.

This research aimed to solve the problem local farmers face continuously; the underbrush problem. The researchers started to collect data from the field and the existing data from Sambu Group's practices.

The researchers developed the nutrient cycle method, which allows the farmers to just let the underbrush grow and cut them manually every four months. Eventually, the decaying bushes turn into organic matters that are highly nutritious to soil and plants. This organic fertilizer can be an alternative to the expensive chemical fertilizer.

TJF & IPB University conducted two rounds of socialization events in three villages in Pulau Burung to promote the nutrient cycle method. This brought a series of insightful discussions between the farmers and the research team.

"This socialization grows our knowledge about how to solve the underbush problem. We thought that herbicide was the efficient way, but now we know that we can just simply let them grow and cut them. This method will not cost us a lot of money."

a farmer in Pulau Burung

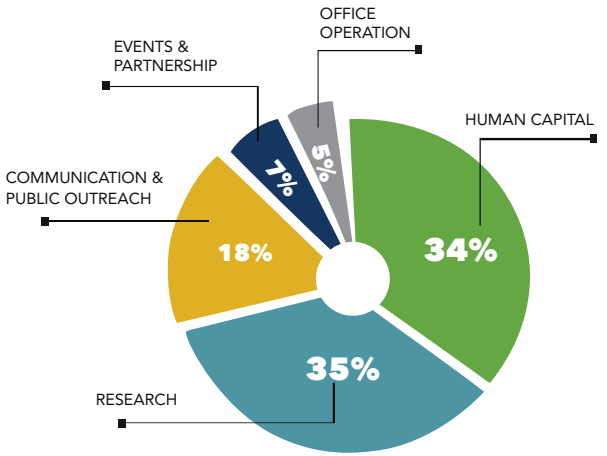
This project has brought new knowledge to **225** of farmers.

FUND ALLOCATION

This year, the total budget absorption rate is 67% (around IDR 1 bn out of IDR 1.5 bn). In terms of program budget, TJF has allocated IDR 626 mio for the whole implementation yet the realization only around IDR 140 mio or 22%. This is caused by two major factors. First, the postponment of Sambu-SWA book that costs IDR 278 mio which equals to 44% of the program budget. This fact is quite challenging since the book project is not directly part of TJF program, but it holds the largest funding allocation compared to TJF actual programs. Thus, its disbursement also highly crucial to determine the TJF budget absorption level.

The second factor is the organizational re-structure that had been occuring throughout the year. This constant changing situation has affect the organizational governance more than we expected. The staff turn over and transition plan have greatly shifted the team's focus to take over the jobdesc of the vacant position and strategize the work governance along with TJF office relocation. This caused a shifting work focus that prioritized internal management rather than implementing TJF programs.

Despite the challenges, the team is grateful that we still could manage to implement flagship program such as Kedaireka - nutrient cycle study and Tell Your Story event. Lesson learned, we underestimated the PM workload as well as the role of team structure stability that led to postponment of program implementation and low budget spending. For 2023, we have designed a system that could help us to determine the human resources capacity of all staff, so that we can ensure everyone has fair workload and TJF will provide assistant in form of intern or freelancer if needed to help us reach our goals in timely manner.



Research	*379,103,782*
Human Capital	*386,506,054*
Communication & Public Outreach	*194,986,414*
Events & Partnership	*71,807,639*
Office Operation	*56,019,937*
Total	*1,070,423,826*

MEET THE TEAM

Besides the continuous support from TJF partners, none of the progress would have happened without our committed team. Thank you for making everything possible, this year and every year.

General Director
Tay Enoku

Executive Director
Tay Ciaying

Advisory Board Member
Christian Hsieh

Program Manager
Ika Zahara Q

Program and Partnership
Andi Junila A.

Research Team
N Ihsan Fawzi, Ratu Nabillah

Media and Communication Team
Dewi Mustika R, K Dwi Agustina

Finance and Administration
Raja Difa







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