

**The Economics of Ecosystems and Biodiversity:
Promoting Biodiversity and Sustainability in The Agriculture and
Food Sector Through Economic Valuation**



IPB University
Faculty of Economics and Management



1st Deliverables Report

Report of First Stakeholder Workshop

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INTRODUCTION

Background

The food system in Indonesia is a complex concept with all the opportunities and challenges that are closely related to environmental and ecosystem factors, climate change, water quality, biodiversity, farming management practices, innovation and technology, food security as well as external factors such as international trade. The complexity of food system is reflected in each subsystem which includes production, processing and distribution with very diverse drivers of consumption patterns which are influenced by nutritional needs and preferences for food.

UN Environment Programme – Ministry of National Development Planning initiate The Economics of Ecosystem Biodiversity: Promoting a Sustainable Agriculture and Food Sector (TEEB Agriculture and Food Implementation)-TEEBAgriFood Platform Indonesia which applies a food system approach beyond the production-centric approach.

Cacao production is a part of Indonesian food system approach through its role in farmer income in securing healthy nutritious food. Cacao as an export-oriented commodity makes the scope of analysis conducted at international and domestic levels an inseparable part (interlinked) of the food system approach. While increasing cacao production can generate and diversify incomes, it can at the same time protect both farmer and ecosystem health.

The analysis of agroforestry assessment would be focused to natural capital, human social capital, value chain and also external factors to reach the outputs: i) promoting production of diverse and nutrient-rich food, ii) respecting both socio-cultural and local community context, iii) ensuring social inclusion and household resilience, from an income perspective.

TEEBAgriFood Platform of Indonesia focusing in cacao, will be conducted in Luwu Utara, South Sulawesi province. Internally, several challenges and issues concerning the cocoa production including aspects of low productivity, pests and diseases, determinants of agroforestry adoption including behavioral aspects, and the urgency of regeneration of cocoa farmers. Nevertheless, the external demand still shows prospects with the performance of domestic demand increasing by 10 percent year, along with 3 percent in exports of processed cocoa products per year, in the last 5 years with the higher requirements of sustainability.

With various challenges and problems in the cocoa sector, this research is expected to provide insights for the future development of the Indonesian cocoa sector, thus developing dynamic adaptive strategies concerning the sustainability and resilience to support the competitiveness of the sector with a prototype tropical ecosystem is very important. In addition, this activity is expected to maximize the construction of body of knowledge in order to encourage investment patterns in the cocoa sector in the future.

The urgency to involve stakeholders who are directly engaged to the product flow as well with the the external stakeholders such as the government, academic community (universities), in order to accelerate the creation of added economic value and to ensure a thriving, sustainable and resilient cocoa supply chain flow is very necessary. The Multistakeholder Partnership is expected to be able to

encourage farmers to adopt more sustainable and resilient agricultural practices, especially agroforestry practices that have been stated the policy direction in order to increase economic added value in RPJMN, year 2020 – 2024.

Objective

A major objective of the Stakeholder Meeting of TEEBAgrifood Platform Indonesia is to describe the TEEBAgrifood program and to bring together all stakeholder to obtain input regarding strategies and plans to implement the activities of TEEBAgrifood Platform Indonesia. Specifically, experts and participants are expected to be able to:

- Identify elements that can be part of the implementation of the research, including future practices scenarios for developing cocoa production system, identification of ecosystem-related variables and other drivers.
- Provide ideas, insights, thoughts and analysis in formulation Indonesia's cocoa development strategy in general and how the TEEBAgrifood Platform Indonesia can contribute to the development of the policy portfolio of the competitiveness and resilience of Indonesian cocoa.

Participants

A. Offline participants:

1. Ir. R. Anang Noegroho Setyo Moeljono, M.E.M – BAPPENAS RI
2. David Ardhian – FAO Indonesia
3. Insyan Syafaat – PISAgrro
4. Prof. Dr. Nunung Nuryartono – IPB
5. Prof. Dr. Suria D. Tarigan – IPB
6. Prof. Dr. I Nengah Surati Jaya – IPB
7. Syamsul Pasaribu, Ph.D - IPB
8. Sahara, Ph.D – IPB

B. Online participants

1. Barlev Nico Marhehe – UNEP
2. Agus Purwantara – MARS Inc
3. Dewi SS – ASKINDO
4. Dr. Agung Wahyu Susilo – PUSLITKOKA
5. Iswanu Priharsanto – Dinas Pertanian Luwu Utara
6. Sindra Wijaya – AIKI
7. Saharuddin – Kelompok Tani Kakao Luwu Utara
8. Made Sudana – BPP Tanalili
9. Sholahuddin Akbar – Indonesian Coffee and Cocoa Research Institute
10. Linda Sari – DKP
11. Cheryl Mahdayani – BPP Tanalili
12. Yustin – DKP
13. Novi Lestari – DKP
14. Abi Hargiyanto – DKP
15. Sandiono – DKP
16. Lindayani – DKP

17. Gamaliel – DKP
18. Ni Luh Sulviani – DKP
19. Alauddin Sukri – DKP
20. Prof. Edi Santosa – IPB
- C. Committee (Facilitator, MC, Notetaker)
 1. Pini Wijayanti, PhD
 2. Triana Anggraenie, M.Sc
 3. Syarifah Amaliah, MAPP.Ec
 4. M. Amin Rifai, M.Si
 5. Sigit Yusdiyanto, M.Si
 6. Audrey Navastia
 7. Philip Barton
 8. Bahroin Idris Tampubolon, MSi
 9. Arief Lesmana
 10. M. Iqbal Firdaus
 11. Yudha Kristanto

Time and Place

Day/Date : Thursday, 27 May 2021
 Time : 09.00 – 12.30 WIB
 Location : The Hermitage – Courtyard Room
 Jl. Cilacap No.1, Menteng, Jakarta 10310
 Meeting ID : 825 1456 9035
 Password : TEEBAIndo
 Link : ipb.link/stakeholdermeeting-teebagrifood

Programme Details

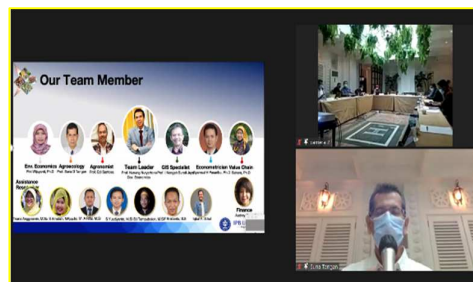
Time	Activity	Facilitator
08.45 – 09.00	Registration	
09.00 – 09.05	Opening and activity overview	MC: Dr. Pini Wijayanti, SP, MSc
09.05 – 09.20	Opening remarks from Chief of Project Steering Committee	Ir. Anang Noegroho Setyo Moeljono, MEM Director Food and Agriculture BAPPENAS
09.20 – 09.50	Presentation of Project Plan TEEB Agriculture and Food – TEEBAgrifood Platform Indonesia	Prof. Dr. Suria D. Tarigan
10.05 – 11.05	Discussion and Q&A Session 1	Prof. Dr. I Nengah Surati Jaya Dr. Sahara, SP, MSi
11.05 – 12.05	Discussion and Q&A Session 2	Prof. Edi Santosa Dr. Syamsul H. Pasaribu
12.05 – 12.25	Conclusion and Follow Up	Prof. Dr. Nunung Nuryartono
12.25 – 12.30	Closing	MC: Dr. Pini Wijayanti, SP, MSc

ACTIVITY REPORT

Prof Suria Darma Tarigan

Introduction

- Cocoa production in Indonesia ranges from 600-700 thousand tons per year, of which the largest production is located on Sulawesi Island.
- Cocoa production is dominated by small holder farmers so that the use of labor is more efficient.
- Cocoa productivity tends to decline (before the year of 2000 it was high but nowadays the productivity is around 300-400 kg/ha) but the demand for downstream products is increasing.
- Low productivity of cocoa, mainly due to plant pests and diseases, causing farmers incentives to develop cocoa decrease.
- In addition, due to the implementation of export tax policy, the export volume of cocoa beans is decreasing but the export volume of downstream products is increasing.
- Efforts to increase cocoa productivity are needed, along with the value chain from on farm, processing, marketing, and consumption accompanied by sustainable natural capital, social capital, and livelihood capital (income of local farmers) through MPTS (multipurpose tree species) from the agroforestry system through the TEEBAgrifood framework.
- TEEBAgrifood framework: economic value is calculated from stock capital and flow capital (ecosystem services), where economic value previously tends to be calculated from costs and benefits on farm, not included the contribution of natural capital, in this case is ecosystem services in cost benefit analysis (natural capital is considered as an externality).
- Currently the global market includes a sustainability component in products which traded globally, so that ecolabelling opportunities are obtained from this framework.
- The sustainability system tested is agroforestry, where the hypothesis used is that agroforestry can increase farmer's income and other components of ecosystem services. Cocoa with an agroforestry system has a better environment so that it has better nutrition, minimizes Cocoa Pod Borer (CPB) attacks through natural enemies (imago-eating birds) and has a longer lifespan.
- An increase in the tree cover from agroforestry systems can improve ecosystem services, such as carbon sequestration, and among ecosystem services that are local for residents around plantations: water yield and crop yield.
- Although agroforestry cocoa production is not as high as monoculture, the agroforestry system combined with MPTS is able to produce other income that compensates for the reduced income from cocoa.

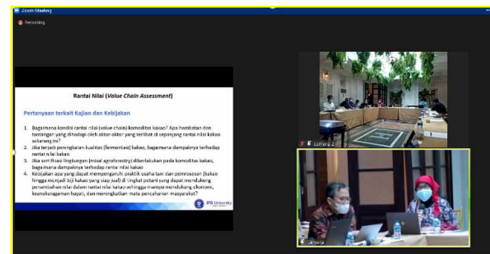


- The methodology used is to explore monoculture and agroforestry cocoa plantations in the study area (North Luwu) and to investigate the benefits of agroforestry to raise new hope for the cocoa industry in the future.
- Pre-analysis results: Covid-19 and climate change have an impact on macroeconomic decline, the existence of an agroforestry system is able to mitigate the impact caused by these two factors. If the results are positive, then the agroforestry system can be applied to other monoculture systems so that natural capital is productive and regenerative in the long term.

Discussion Session-1: Value Chain

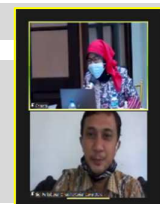
Dr. Sahara

- The main actors in the cocoa value chain are farmers, processors, traders, and exporters.
- Supporting actors are Government, Research Institute, and NGO.
- What is the condition of the cocoa commodity value chain? What are the current barriers and challenges faced by the actors involved along the cocoa value chain? Baseline of current cocoa condition:
 - If there is an increase in the quality (fermentation) of cocoa, how it will impact the cocoa value chain?
 - If environmental certification (such as agroforestry) is applied, how it will impact the cocoa value chain?
 - What policies that can influence farming and processing practices at the farm level that can support adding value in the cocoa value chain so as to support the economy, biodiversity, and improve community livelihoods?



Discussant

1. Arif Zamroni (Ketua Asosiasi Petani Kakao Indonesia –APKAI)
2. Iswanu (Kabid Perkebunan Kabupaten Luwu Utara)
3. Dr. Agus Purwantara (Mars Symbioscience - Steering Committee)
4. Insan Syafaat (Direktur PISAgro - Steering Committee)



1. Barriers and challenges to cocoa production seen from two sides (farmers and collectors):

- **On Farm**
 - Productivity has decreased, currently productivity is 300-400 kg/ha while the normal condition is 2000 kg/ha. Like the other perennial plants, low productivity is a major issue and opportunity.

- Extraordinary land conversion, where 30% of cocoa land has been converted to other commodities which are more profitable.
 - Pest and disease attacks, especially Cocoa Pod Borer (CPB).
 - Need sufficient support.
 - Trees are old and need rejuvenation: request by farmers is a priority for CPCL (prospective recipient - prospective location) North Luwu plantation office, replanting needs to be done with certified seeds.
 - The heyday of cocoa in North Luwu occurred in 2009-2010, where the cocoa area at that time was 56 thousand hectares. Due to floods and pest and disease attacks, the land area fell to 36 thousand hectares in 2015 and in 2020 slightly increased to 40 thousand hectares.
 - The cocoa production has been decreased nationally, but in fact there has been an increase in Luwu Utara district
 - North Luwu local cocoa clones: MCC-01 and MCC-02 (Masamba Cacao Clone), currently the most widely cultivated are MCC-02. The existence of these clones motivating the community's interest in planting cocoa
 - Increasing cocoa productivity is prioritized by intensifying and reducing extensification
 - Extensification: when the price of cocoa is high, most of the land is planted with 100% monoculture cocoa without considering the environment and potential disasters, such as riparian zone so that cocoa plantations with an agroforestry system are needed to reduce the impact of disasters
 - Intensification: There is a need for new certified and qualified varieties or clones that are resistant to disease and capable of increasing cocoa production. In some places have done intercropping with spice plants
 - The presence of a new clone of cocoa that has high productivity, farmers will respond well to revitalize the cocoa industry
 - The main priority is to fulfill the request of seed aid for shoot grafting, currently there are 1000 ha of CPCL and will continue to grow.
 - 90% of cocoa farmers are small holders, so that if we give them some good inputs, access to building capacity, market certainty, funding certainty, and good agricultural practices, cocoa economic development can be ensured.
- **Agroforestry**
 - The North Luwu region is a flood-prone area, so that the agroforestry system can minimize the impacts arising from cocoa farming. Due to the cacao fever, extensification does not pay attention to the environment, such as riparian zone that planted by cacao plantations. For this reason, in the future, cocoa plantation is needed that takes into account the environment.
 - Agroforestry can be tricky because most of the land has to be converted to other plants and reduce cocoa production so that it is necessary to have a good understanding of the

concept. This commitment must be supported by farmers so that agroforestry plants are not cut down and replaced with other plants which are more profitable.

- Agroforestry is not a matter of being ready or not ready, as long as there is a good contract, good assistance, good seeds, and a good price, farmers can apply it.

- **Price**

- Cocoa prices are unstable, fluctuate drastically even though the input prices such as fertilizers and downstream products never decrease
- Discounts from the industry, because according to the cocoa industry, farmers do not meet SNI (Indonesia National Standard) requirement (farmers lose in the laboratory). Low productivity, low quality, and high discounted prices from penalties related to SNI cocoa causing farmers loss the benefit.
- The long distribution chain due to weak farmer groups causing prices at the farm level to be very low. Weak farmer groups, sometimes even ungrouped, become easy targets for middlemen. Therefore, farmer group development is needed to strengthen farmer groups.
- In areas that are not cocoa centers, the distribution chain is at least 3 middlemen, while in production centers, the chain can be reduced by the presence of Cooperatives. Assistance and development of cooperatives in accommodating the results can minimize the presence of middlemen
- It is necessary to share the value (production-consumption commitment) of cocoa products where in high production on the production side and certainty of purchasing from the market on the consumption side this share value needs to be adopted from oil palm plantations

- **Fermentation**

- There is no real market for fermented cocoa products farmers' fermented products rarely enter the industry's goal of fermentation, so they are considered not fully fermented
- Fermentation reduces the weight of cocoa beans by 10%, but the price margin for fermented and unfermented cocoa beans is not too far so it is not profitable for farmers (price margin is around IDR 2000-3000 which is unprofitable, minimum price margin is IDR 6000)
- Fermentation technology for smallholder farmers is still rare. Small-scale fermentation boxes (10-15 kg) will help farmers and have been socialized but not much in the community. Currently most of the fermented boxes are 50 kg in size where there are rarely farmers who are able to harvest 50 kg a week unless the group is strong.
- There is no utilization of by-products, for example the use of cocoa shells or the manufacture of chocolate on a small scale

- Weather constraints: bad weather causes fermented products that should be dried become rotten so that farmers lose their outcome.

- **Policy**

- The need for enabling regulation at the regional level, namely policies that focus on the issues in the field in order to support and have a direct impact on the main actors of the cocoa value chain. The policy must be long-term, where if the government changes, the policy will not be replaced

Discussion Session-2: Landscape and Land Use

Prof. Nengah

- Which areas that have the potential for expansion to be developed and the potential to decline?
- Impact of the land use and provision of ecosystem services from cocoa production expansion?
- The impact on nature, human and social capital if the expansion is managed, planned or regulated?

Discussant

1. Iswanu (Kabid Perkebunan KabupatenLuwu Utara)
2. Agung (Puslitkoka)
3. Alauddin (Dinas Ketahanan Pangan KabupatenLuwu Utara)
4. InsanSyafaat (DirekturPISAgro- Steering Committee)

- **Characteristics of Cocoa in North Luwu Regency**

- The North Luwu Regency area is 750 thousand ha, 500 thousand ha is forest area. The majority of developing commodities are cocoa, palm oil, food (corn and rice) in terms of land area
- The climate is almost non-dry (the majority is rainy climate).
- There are weaknesses in controlling smallholder cocoa plantations and land-owning farmers because they tend to replace commodities that resulting more income
- Compared to the other regions, cocoa productivity in North Luwu Regency is still quite high at 800 kg/year, but some efforts to increase it are still needed.

- There are monoculture and intercropping cocoa plantations (depending on the farmer's mindset). Traditional farmers will plant a mixture with other commodities such as bananas, while farmers who understand cultivation techniques plant monocultures.
- Soil fertility has decreased due to the agriculture which exploits nutrients in the soil, and an education on the use of organic fertilizers has been carried out, so that marginal soils become a limiting factor for cocoa farming in certain locations
- Cocoa is the largest contributor to regency income along with oil palm and seaweed
- North Luwu Regency supports sustainable cocoa which is supported by local government policies because flood-prone areas need a more sustainable agricultural system through agroforestry
- There are so many farmer groups engaged in plantations, 600 groups are still need to be educated to be directed to sustainable agriculture
- There is a Doctoral Cocoa Association under the guidance of PT MARS in the North Luwu area

- **The Potential of Cocoa and Agroforestry**

- There is no cocoa expansion program in North Luwu Regency, the priority is the rejuvenation of damaged cocoa and it has not been fully fulfilled.
- Cocoa still has good potential for production and economic development, cocoa prices are relatively stable. Domestic cocoa is only able to meet 50% of the domestic industry, so the rest must be imported
- Domestic and export needs still have high opportunities in cocoa development
- The existence of chocolate-based SME such as Kampung Chocolate in Blitar is able to move the on-farm sector and shorten the upstream to downstream supply chain
- Farmers who understand the processed products or the value of the cocoa benefits will have a spiritual closeness to the cocoa plant, so that they will survive growing cocoa from the temptation of conversion to other commodities.
- Farmers knowledge is not evenly distributed, there are productive farmers so they have high productivity and vice versa
- Cocoa intercropping, where cacao plants are not possible with monocultures plants because they need protector that is adapted to local commodities
- MCC-2 clones are known to have high productivity and have been planted throughout Indonesia. This needs to be scaled up again by increasing the independent instructors and regenerating cocoa farmers
- The need for effective provocation and dissemination related to cocoa farming through social media
- Agroforestry models have been developed, ranging from polyculture to multicultural.

- The need to adopt a Landscape Approach or Juridical Approach, namely social-economic development that focuses on seeing all the potential that exists in the region. Enabling regulations must be made by the regions so that there are all efforts to improve the socio-economics in the agricultural sector. In addition, the potential of cocoa is not only seen in 1-2 individuals, but is seen from all regions.

Discussion Session-3: Human and Social Capital

Dr. Samsul

- The level of welfare of cocoa farmers?
- The relationship between farmers, traders and industry?
- Can the nucleus-plasma model be developed in cocoa farming?

Discussant

1. David-FAO Indonesia
2. Iswanu (Kabid Perkebunan KabupatenLuwu Utara)
3. Sidra Wijaya (Pemerhati Kakao)

● Partnerships and Policies

1. An important aspect that needs to be strengthened is governance, there are forms of regions that innovate in governance, a landscape approach with driving commodities according to their respective regions.
2. Issues of human capital and social capital: partnership is the key, in farmer-industry-consumer relations, the government needs to be present, connecting parties with different level playing roles. Farmers: the position of farmers is not on the same level, so the impact of prices and levies appears. Equal partnerships provide developing farmers with a decent livelihood
3. Agroforestry has several models, some are complex, some are simple.

Simple: intercropping (additional land use), Complex: linking wider ecosystem services, agroforestry development id highly depending on the location, social group characteristics of the community. Cocoa farmers are competitive with each other, but cocoa farmers who are also food farmers have social capital to work in groups. The entry of commodities becomes a trigger to social change, and it needs to be seen in the transformation of agrifood
4. Strategic landscape management issues: land use competition between sectors (agriculture in forest areas, etc.) and between commodities (land conversion to more profitable commodities). Land security needs to be considered in the transformation process.
5. There is a lot of available technology but few are adopted by the farmers, so policy support is needed and the local government must play a role in distributing technology.
6. Nucleus-plasma is possible with examples in oil palm. The companies that have concessions have to set aside a certain percentage to be developed by smallholders in the nucleus and plasma schemes. The problem is that the downstream cocoa industry has not developed as much as in oil palm.

- **Welfare of Cocoa Farmers**

1. Compared to other commodities, cocoa farmers are more prosperous because cocoa prices have not experienced a sharp decline so that farmers' incomes are relatively stable even though the cocoa area of farmers is small (average 0.5-3 ha)
2. Farmer-trader relations exist in two systems:
 - a. Bargaining directly on the farmers' land (retail buyers come to the land), purchases in the form of dry or semi-dried seeds depending on the agreement of both parties. Done by farmers whose land is small.
 - b. Collection by the company, purchase wet seeds by PT MARS. Done by farmers with larger land. The advantage is plantation certification by PT MARS
3. The nucleus-plasma model does not exist yet in North Luwu

- **Cacao National Movement**

1. The year of 2005-2010 was the heyday of cocoa, where cocoa production reached more than 600 thousand tons/year. The last 10 years the cocoa production have decreased drastically where in the year of 202 is only 260 thousand tons / year due to old plants, land conversion to other commodities, especially oil palm, and government focus on the food products
2. In addition, the industrial capacity was also 800 thousand tons in 2010, so that investors entered the cocoa industry because of the GERNAS KAKAO (Cacao National Movement) program from the Ministry of Agriculture.
3. However, when GERNAS COCOA (Cacao National Movement) is not promoted, cocoa production continues to decline so that industry utilization is only 55% and raw materials are not 100% from within the country.
4. As a solution, GERNAS COCOA (Cacao National Movement) is re-promoted, with a note as follows:
 - a. The Government needs to involve in this promotion
 - b. Program modification
 - c. Planning needs to involve all stakeholders both main and supporting
 - d. Focus on intensification, no need for intensification
 - e. Focusing on locations, 4-5 which are really cocoa centers
 - f. Tighten the distribution system to avoid Corruption, Collusion, Nepotism
 - g. Ministry of Agriculture must revise cocoa data
 - h. Agroforestry can be added

Discussion Session-4: Conclusion

Prof. Suria

- New hope in revitalizing cocoa cultivation and industry
- Linking on-farm and off-farm interventions with agroforestry systems as they relate to product acceptance in global markets
- Of the two agroforestry systems (complex vs. simple), the complex type will be studied further because of the added value in landscape-scale ecosystem services perceived by local communities such as increased pollination and natural enemies of pests and diseases
- Incorporating a food system in cocoa production is expected to increase food composition and livelihoods, both in terms of nutrition and quantity
- Support from policy makers for agroforestry to be accepted by farmers

Discussant

1. **Dr. Agus-PT MARS**
2. **Iswanu (Kabid Perkebunan KabupatenLuwu Utara)**
3. **Saharudin-Kelompok Tani**

1. Testing commodities that can increase farmers' income until cocoa is produced, especially short-term plants, such as vegetables, chilies, bananas, etc.
2. There must be further studies, it is impossible for all agroforestry plants in one area to be the same. Timber plants such as sengon with longer harvest times also need to be considered.
3. Vegetable residues can be used as organic fertilizer.
4. Host plants that suppress pest populations are studied which are complex or simple
5. The comprehensive and massive movement is needed, when the community wakes up, the government is even overwhelmed so that higher policies are needed to help at the regency level
6. GERNAS Cocoa (Cacao National Movement) plays a very important role in saving cocoa, if there is no GERNAS Cocoa, the enthusiasm of farmers will be lost and various plants will grow to replace cocoa.
7. GERNAS Cocoa (Cacao National Movement) led to the discovery of MCC-02 which is currently developing
8. Agroforestry is important to be studied further because cocoa has not yet reached the target of cocoa cultivation
9. MCC-02 aged more than 5 years experienced a slight decrease in yield, what happened to this clone needs to be studied as well
10. Agroforestry causes natural enemies of CPB to develop, the bird hunting need to be controlled
11. Education is needed so that agroforestry becomes additional income for farmers

Closing by Prof. Nunung

- Chocolate products have become part of the lifestyle, so there is quite large demand. From the available raw materials, Indonesia still has potential because it used to have a high enough production.

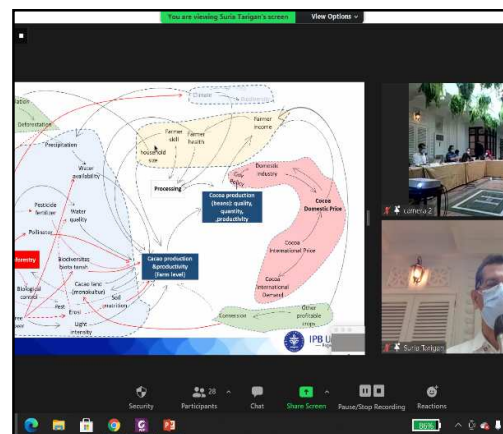
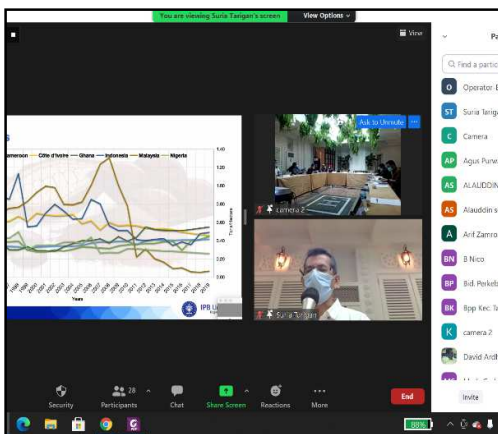
Questionnaire results:

- Perceptions of the future of cocoa commodities and the cocoa industry are 80% positive, meaning that they are still convinced that the cocoa industry will not become a sugar industry (once number one but slowly crumbling)
- Perceptions of the future of cocoa is currently 83% with some notes for consideration. A positive outlook must be implemented.
- Perception of agroforestry system, 80% agree. We need to anticipate the negative thing.
- Upstream side must be improved with a better approach by TEEBAgrifood approach, not biased towards looking at one commodity from its economic value. Sustainability must have a portion in other aspects such as social, economic, environmental (people, planet, and profit).
- An intensive system needs to be developed, utilizing all parts of cocoa to be developed (implementing a circular economy in cocoa)

ACTIVITY EVALUATION

In the discussion process, the stakeholders and participants have shown their enthusiasm and actively collaborated. With chocolate products have become part of the lifestyle, thus we do have a new hope in revitalizing cocoa cultivation and industry due to the high demand. It is outlined that all the stakeholders have given positive responses and gained beneficial insights. Nonetheless, there are also several notes and evaluations discerned from the process.

Firstly, it is apparent that we need effort to increase the cocoa productivity along with its whole value chain. Secondly, the need for enabling regulation at the regional level. The policy must be long-term, as if the government changes, the policy will not be replaced



- Rantai Nilai (Value Chain Assessment)**
- Pertanyaan terkait Kajian**
1. Bagaimana kondisi rantai nilai (value chain) komoditas kakao? Apa hambatan dan tantangan yang dihadapi oleh aktor-aktor yang terlibat di sepanjang rantai nilai kakao sekarang ini?
 2. Jika terjadi peningkatan kualitas (fermentasi) kakao, bagaimana dampaknya terhadap rantai nilai kakao
 3. Jika sertifikasi lingkungan (misal agroforestry) diberlakukan pada komoditas kakao, bagaimana dampaknya terhadap rantai nilai kakao
 4. Kebijakan apa yang dapat mempengaruhi praktik usaha tani dan pemrosesan (kakao hingga menjadi biji kakao yang siap jual) di tingkat petani yang dapat mendukung penambahan nilai dalam rantai nilai kakao sehingga mampu mendukung ekonomi, keanekaragaman hayati, dan meningkatkan mata pencaharian masyarakat?

