



TROPICAL FOREST ALLIANCE



THE BUSINESS CASE: COCOA SEED GARDENS

Enhancing Livelihood
and Forest Protection

02/2022



Executive Summary



Indonesian cocoa sustainability in terms of increased productivity, improved farmer livelihoods, secure supply chains, and environmental preservation is an ongoing struggle. The social, economic, and environmental implications cannot be separated one from another.

A major pressing need is for availability of quality planting material for farmers in order to increase productivity and optimize land use. Seed gardens are important to feed quality certified rootstock into cocoa nurseries for distribution of seedlings for replanting. Sulawesi, the largest cocoa-producing area of Indonesia, currently contains no certified cocoa seed gardens, creating a barrier to increased productivity for aging cocoa farms.

There are clear overlapping interests between cocoa stakeholders and non-profit stakeholders, particularly those concerned with deforestation. Cocoa is a shade crop and lends well to agroforestry models. The optimization of land use through replanting presents one of the greatest opportunities to disincentivize deforestation in smallholder farming communities. An analysis of the situation reveals the benefits of local seed garden establishment to a variety of stakeholder

- government, private sector, non-profit sector, and smallholder farmers. The seed garden business case for farmers is profitable with minimum risk. The seed garden business case for the private sector is contingent upon calculation of indirect profitability related to supply chain improvement. Local seed garden establishment contributed to government and non-profit objectives.

A multi-stakeholder approach to localized seed garden establishment is preferable, with each party weighing respective investment and return from both monetary and non-monetary perspectives. This document outlines the broad justification for such a collaboration to be initiated, driven by Cocoa Sustainability Partnership (CSP) and one or more of its private sector members located in Sulawesi, bolstered by support from central and regional Indonesian government departments and the non-profit sector.

Introduction

Deforestation remains a problem in Indonesia. It is true that statistics reveal improvement in mitigation efforts over the last several years, however, the majority of focus has been on the oil palm industry. Cocoa farming, on the other hand, is dominated by smallholder farmers scattered throughout several cocoa production centres, making regulation considerably more difficult (an estimated 97% of Indonesian cocoa is farmed by smallholders on 1-2-hectare plots)



Cocoa



97%
Smallholder



Oil Palm



40%
Smallholder

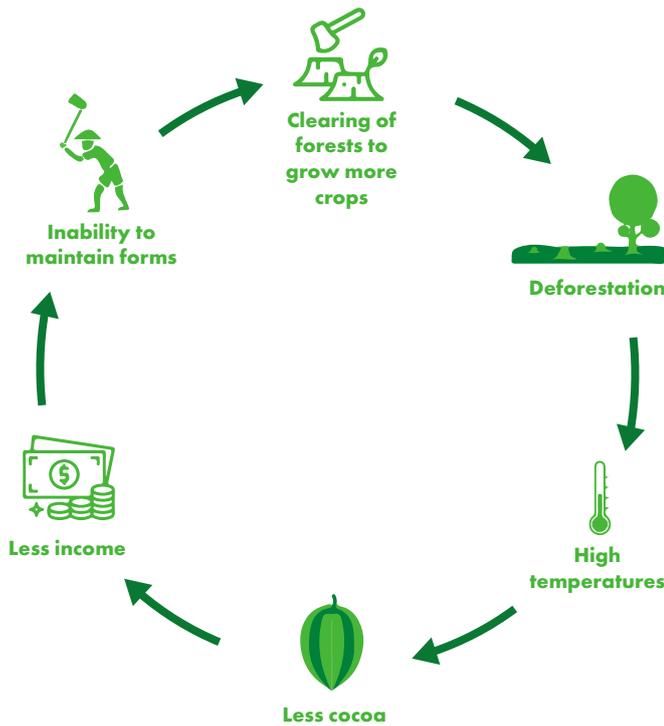


Kemen G. Austin identified this issue during a 2019 study conducted by Duke University:

“The takeaway message for policymakers and conservationists is that the causes of forest loss in Indonesia are much more varied than we previously thought. They change from place to place and over time,” Austin said. “Even though oil palm is the first thing that pops into most people’s head when they think about deforestation in Indonesia, it’s not the only cause, and we need to adjust our policies and practices to account for that.”

Driven by climate concerns and market pressure, cocoa stakeholders in Indonesia have recently been facing new challenges to ensure sustainability within their cocoa supply chains. Two of the major factors augmenting this challenge are cocoa-related deforestation and economic conditions in farming communities. Cocoa Sustainability Partnership (CSP), the largest association of public and private cocoa stakeholders in Indonesia, has discovered that there is a close linkage between deforestation and farm economics for smallholder cocoa farmers. “When farmers are not receiving enough income, they are incentivized to encroach upon protected areas to expand their farming activities,” said Wahyu Wibowo, Executive Director of CSP.

“Deforestation disrupts local weather patterns and causes carbon emissions, contributing to global climate change. As weather patterns evolve, like high temperatures and droughts, farmers aren’t able to grow as much cocoa. They’re forced to expand into new areas, triggering this vicious cycle all over again.”



Given the strong correlation between cocoa-related deforestation and farmer income, along with smallholder regulation difficulties, it is advisable to explore possible solutions to deforestation which are related to cocoa farm economics, in addition to the already existing activities of land use analysis, knowledge building for farmers, policy implementation, etc. If livelihoods within cocoa farming communities are part of the deforestation problem, then they also must become a part of the solution. Cocoa farmers will be incentivized one way or the other - to clear and farm in protected areas, or to treat the natural environment with consideration and care. Human nature demands that urgent considerations regarding the livelihood of one’s family will generally take precedent over long term environmental management and care.

From a humanitarian perspective, global environmental concerns such as deforestation and climate change should work in tandem with a concern for the livelihoods of those affected by mitigation efforts. A genuinely sustainable supply chain does not encourage regulating farmers into a deeper state of poverty. Thus, we turn our attention to creative solutions where deforestation and farmer livelihood receive equal attention.

Furthermore, David López-Carr of the University of California writes:

“Households that ultimately migrate to an agricultural frontier and clear forests to farm the land have done so only after exhausting or spurning other available options. Frontier farming is not an ultimate outcome, and these households will continue to make decisions based on the degree to which available options enable or constrain their motives. Economic and institutional arguments sometimes fail to recognize that the ultimate decision-makers who affect population and land use change are local resource users—even if their decisions are partly constrained by factors beyond their control.”

As has been implied by what has been laid out above, it is no secret that one purpose of this case is to become an invitation for parties concerned with deforestation to consider taking a deeper look at problems regarding Indonesian cocoa sustainability and farmer livelihoods as part of their initiatives, as many have begun to do. A unification in purpose of a broader body of stakeholders will logically achieve greater results that can align with the primary missions of each respective stakeholder.

Cocoa sustainability in Indonesia as it relates to farmer livelihood is notoriously multi-faceted. For the last fifteen years, Indonesian cocoa stakeholders have been collaborating to facilitate training and access to agricultural inputs, quality planting material, and finance. One may ask, “What else can be done?” This document intends to outline the answer to that question in the context of a business case, laying out one concrete need which is worthy of attention - Localized Cocoa Seed Gardens toward planting material availability for farmers.

Problem Statement

Aging Trees

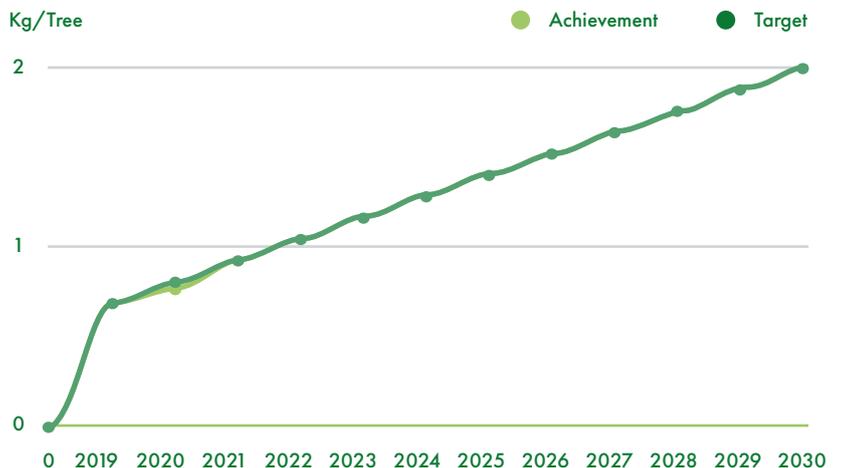
It is the opinion of many experts within the Indonesian government and the cocoa sustainability community such as Dr. Ir. Rubiyo, M.Si. from the Indonesian Agency for Agricultural Research and Development, that in terms of cocoa productivity, and hence insufficient farmer income, the current bottleneck is the combination of aging cocoa trees and the lack of available high-quality material at the local level for replanting. The profitable lifespan of a cocoa tree is 25 years, with 4% of cocoa trees in Indonesia reaching that age every year. Without the replacement of these aging trees with cocoa seedlings of high quality, both physically and genetically, the economic viability of cocoa farming in terms of bean productivity is lacking.



Low Productivity

It is well known that for a variety of reasons, Indonesian cocoa productivity (in terms of yield per tree and yield per hectare) remains much lower than it should be. The Indonesian Coffee and Cocoa Research Institute (ICCRI/Puslitkoka) continues to base their recommendations upon an assumption of potential yields greater than 2.5 metric tons of dry cocoa beans per hectare. Yet, according to data from the Indonesian Ministry of Agricultural, actual productivity fluctuates between 700-850 metric tons per hectare. Private sector data shows as low as 400-600 metric tons per hectare, in many cases because of low tree population per hectare. In the past, many productivity estimates were based on the assumption of 1000 cocoa trees per hectare, whereas in reality smallholders are only cultivating 700-800 trees per hectare. For this reason, the private sector has begun measuring productivity by “kg per tree” instead of “kg per hectare” and have adjusted targets accordingly.

If replanting of smallholder cocoa farms is achieved in accordance with recommendations, it is reasonable to project annual yields of up to 2 kilograms per cocoa tree. As shown in the chart below taken from the CSP Dashboard (csp.or.id/en/pages/csp-dashboard), current productivity levels of CSP farmers stands at around 0.75 kilograms per cocoa tree. It should be noted that these are farmers who participate in private sector development programs, therefore it can be speculated that this productivity level is above the national average. Over the next ten years, CSP members are aiming to more than double that number, with localized seed gardens and the resultant local contribution to cocoa replanting efforts playing a pivotal role toward that desired outcome.



Suboptimal Land Use

When cocoa productivity is low, farmers experience economic pressure to diversify into more profitable seasonal crops such as maize, rice, and vegetables which require full sunlight, thus motivating farmers to open new plots of fertile land, whether in protected areas or not. The result is less tree cover and suboptimal land usage. With a glance at this equation, it becomes clear how and why deforestation still occurs in smallholder farming communities.

Low Farmer Income

Low farmer income is well-documented and accepted as reality. A survey conducted by Rikolto Indonesia in 2018 revealed that only just above 25% of cocoa farmers across three production centres of Sulawesi and one production centre of Bali could confirm earnings at or above regional minimum wage standards. According to World Bank indicators, 47% of Indonesian smallholder farmers are considered poor, while according to Indonesian household income estimates, 22% live beneath the poverty line. Although we can see that there are variations present in methods of measurement and income standards, it is well-known that the potential business case for cocoa farming is not being adequately realized, resulting in crop conversion and disengagement of youth in cocoa farming.

Follow-up studies on the income gap between actual farmer income compared to living income standards per area are currently underway in 2022, driven by Rikolto Indonesia, CSP, GIZ and the Anker Research Institute. This is important for many reasons including social interests, accountability for sustainability programs, supply chain security, and youth farmer engagement. In relation to deforestation, it stands to reason that farmer livelihood improvement through the optimization of legally-owned land will decrease the need to clear forests.

Limited Access to Planting Material

In 2015, the government of Indonesia released a regulation declaring specific standards for propagation of cocoa planting material. This new policy mandated that cocoa nurseries must adhere to certain standards in order to receive certification to engage in sales and distribution of cocoa seedlings. Although the intention of the regulation was to ensure the quality of cocoa planting material, this regulation inadvertently led to decreased production of high-quality cocoa planting material at the local level. As a result, according to Wahyu Wibowo of Cocoa Sustainability Partnership, cocoa seedling nurseries under the guidance of major cocoa industry stakeholders are only producing at half capacity (25 million seedlings per year vs. capacity of 50 million). The problem lies with the fact that the cocoa seeds used for rootstock should be of certified genetic varieties and harvested from certified seed gardens, however, there are currently no certified seed gardens in Sulawesi, the Indonesian island responsible for 60% of the country's entire cocoa production. Because of this, in order to propagate and distribute high quality cocoa seedlings at scale, seeds must be ordered from other islands such as Java. There are certain problems with this including:

- Very lengthy lead time on orders
- Limited production capacity
- Risk of damage during transit
- High cost



Justification

The statements above are sufficiently problematic so as to limit the potential of sustainable cocoa supply chains and improved farmer livelihoods. Indeed, there are various interrelated aspects, all of which must receive proper attention in order to help create a situation where Indonesian cocoa farmers are thriving socio-economically and prioritizing environmental preservation and reforestation. However, at the present moment, there is a strong case to be made that availability of quality planting material is perhaps the most pressing need. In order to propagate this planting material at scale, it becomes strongly advisable to promote and support the development of certified localized cocoa seed gardens.

According to Dr. Ir. Rubiyo, M.Si., availability of planting material is a major problem and seed gardens should be developed at the local level, not only to reduce cost and increase availability, but also to promote community ownership and technology transfer. The Ministry of Agriculture has refined the process of certification and is prepared to work with any party toward that end. In their Cocoa Roadmap 2020-2040, it is stated that replacing aging trees with young seedlings of robust genetics should be done at a rate of 15,000-17,000 hectares per year. Yet, the ministry does not contain the capacity to do so on their own. The private sector and key farmers themselves need to share in the responsibility if sustainability and production goals are to be achieved. However, it must be more than a responsibility. It must present an opportunity as well that benefits various involved parties.

Both the Indonesian government and the private sector realize the need for increased cocoa productivity both from a farmer livelihood standpoint and from a business standpoint, with both perspectives citing replanting as key to correcting the course of decline in production against increasing demand. There is significant variation in recent cocoa bean production statistics in Indonesia, however all show a similar downward trend as cocoa trees continue to age, and replanting lags behind.

Indonesian Private Sector Perspective (Per 1000 Metric Tons)



Source: "Statista" based on ICCO Production Data, 2021. Cocoa Roadmap, Ministry of Agriculture, 2020.

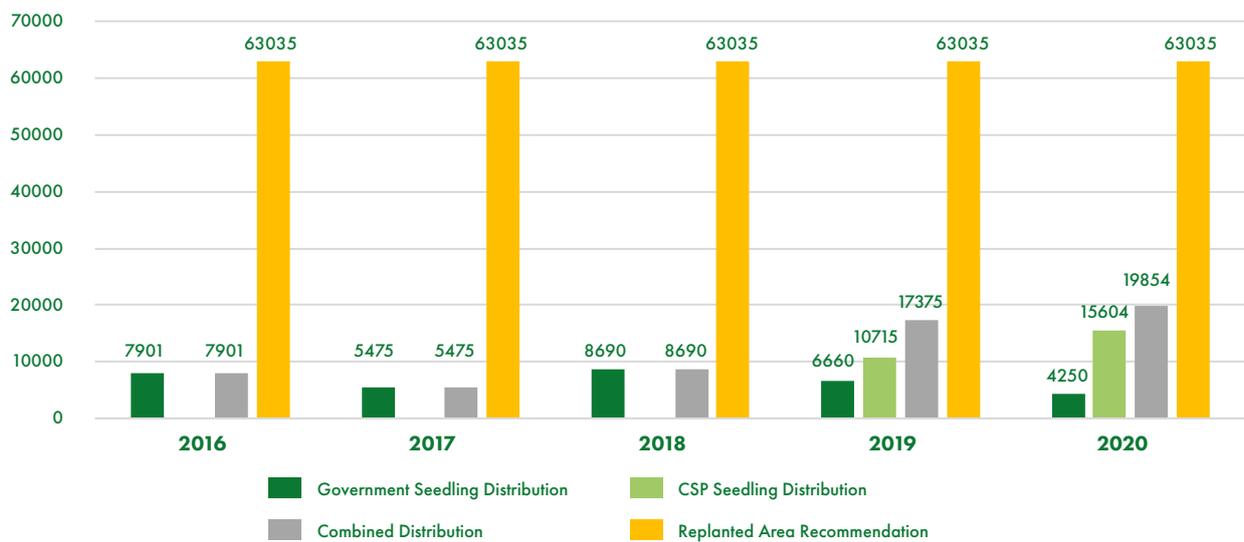
Notes on the "Indonesian Private Sector Perspective" chart above:

- There has been a steady downward decline in domestic supply of cocoa beans processed by the private sector
- The deficit caused by decreasing Indonesian cocoa production has been increasingly supplemented by companies importing cocoa from other producing nations
- Additional Note: Global demand for chocolate products continues to increase by 3-5% annually on average.

Meanwhile, the realization of cocoa seeding distribution is not keeping pace with the need for replanting in order to maintain or increase cocoa bean production from smallholder farmers. The National Cocoa Association and Cocoa Sustainability Partnership that in order to increase productivity, it is necessary for smallholder farmers to replant at a rate of 5% per year so that cocoa trees which are aging past productive age are routinely replaced by young cocoa trees. However, as seen in the chart below, efforts of CSP members and the Indonesian government are far from sufficient to meet this target.



Replanting Requirement vs Realization in Hectares



Source: Cocoa Roadmap, Ministry of Agriculture, 2020. CSP dashboard (CSP Data not available before 2019). Compiled by National Cocoa Association (ASKINDO).

Notes on the “Replanting Requirement vs. Realization” chart above:

- The chart data is based on the recommendation of 4-5% replanting of the total cocoa land area (1,260,695 Ha) per year in the 8 primary cocoa production centres (Central Sulawesi, Southeast Sulawesi, South Sulawesi, West Sulawesi, West Sumatra, Aceh, Lampung, and North Sumatra).

- There are significant structural problems with current efforts in line with the hypothesis of this paper that localized seed gardens will allow farmers and local organizations to contribute toward replanting targets.

Furthermore, presumably based on analysis of the above factors such as supply/demand projections, private sector investment, and ultimately GDP, the Indonesian Ministry of Agriculture has stated the following projections for cocoa farm area and cocoa bean production increase:

| Year | Cocoa Farm Area (Ha) | Cocoa Bean Production (MT) |
|------|----------------------|----------------------------|
| 2025 | 1,675,754 | 949,322 |
| 2030 | 1,681,707 | 1,124,395 |
| 2035 | 1,687,750 | 1,298,400 |
| 2040 | 1,693,884 | 1,470,450 |
| 2045 | 1,700,111 | 1,640,023 |

Source: Cocoa Roadmap, Ministry of Agriculture, 2020.

Although the numbers above in terms of output and productivity do not line up with private sector data, suffice it to say that the Indonesian government is generally on board with plans to support future development of the Indonesian cocoa sector.

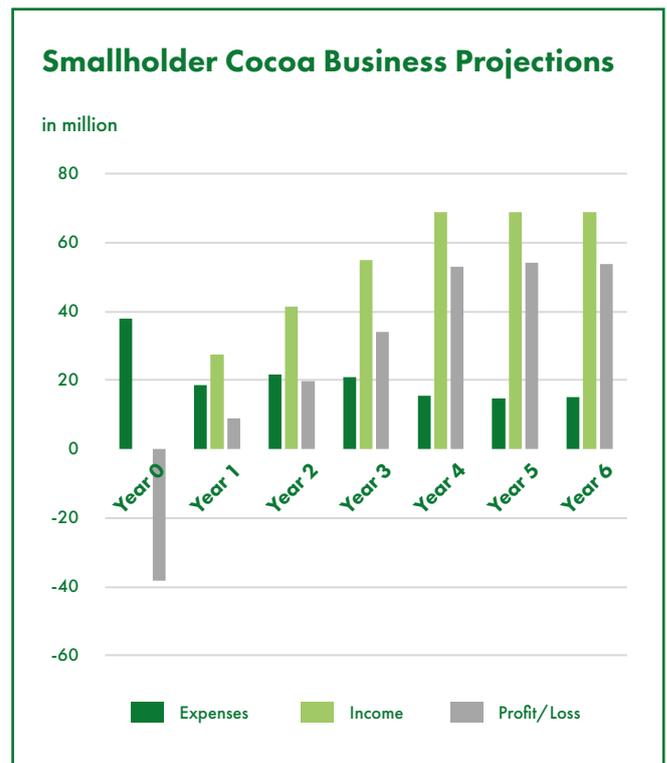
Given the clear need, alignment with government plans, and an increasingly collaborative landscape in terms of stakeholders, the time is appropriate for various actors to participate in the solution to the problem of planting material availability for farmers.

Therefore, a justification for the establishment of localized cocoa seed gardens can be summarized as follows:

- Benefits the farmer by increasing the number of high-quality seedlings on farms and thus boosting productivity and increasing income
- Benefits the private sector by securing supply of cocoa beans to meet increasing market demand
- Benefits the local government by creating a better investment environment
- Benefits the central government by helping achieve roadmap goals of doubled cocoa production by 2040
- Benefits the non-profit sector by contributing to aims of improving farmer livelihoods and disincentivizing deforestation
- Benefits the environment given that cocoa, when cultivated properly, is highly compatible with eco-friendly models of agroforestry and polyculture



The Case



A look at the business case for a cocoa seed garden reveals that it is a business most likely suited for local community members due to low risk and high reward, whereas it is an unattractive proposition for outside investors if viewed in terms of business alone. The case for the establishment of a cocoa seed garden as a local business is based on a simple premise. Because of the fact that a certified seed garden is nothing more than a productive cocoa plot made up of particular varieties, this means that cocoa beans harvested from the seed garden can always be sold through one channel or another. The worst-case scenario is that beans are sold to local traders for market price at a given time. Therefore, even with nominal management, there is built-in protection against loss. Profit margin and the period of return on investment (ROI) will vary depending on scale, cultivation practices, and price of the cocoa beans sold within various market segments.

Regarding the business case for a cocoa farm itself, this is not an unknown quantity. Below is an example of projections based on optimal parameters according to the Indonesian Cocoa and Coffee Research Institute.

The above projections are based on the following assumptions:

- 1) Suitable land conditions
- 2) Professional farm management (Good Agricultural Practices and sufficient investment in inputs)
- 3) High-quality grafted planting material
- 4) \$1.75 per kilogram sale price (IDR 25000)

A summary of the above business model is:

- 1) Profitability after year 1
- 2) Year 4 reaching peak production of 2,750 kilograms per hectare (1,100 trees)
- 3) \$3,500 gross profit per hectare beginning in year 4
- 4) Return on investment after around 3 years



Now consider that if a gross profit of \$3,500 is attainable through the production of 2,750 kilograms of cocoa beans (\$1.27 per kilogram), and there are approximately 800 beans/seeds in one kilogram, then even at a modest price, certified seeds can increase profits exponentially. The current market price for one certified seed for rootstock is \$0.04 before shipping costs.

Let's assume that a socially-minded seed garden manager desires to mark down the sale price by 50% (\$0.02) and that only half of the seeds in a given kilogram are of optimal quality for sale and distribution. The gross profit equivalent per kilogram rises from \$1.27 to \$8.00 (\$0.02 sale price X 400 seeds). The other half of that kilogram is then sold at market price resulting in an overall sale price per kilogram of \$4.64, which increases the gross profit per hectare by over 3.5 times from \$3,500 to \$12,760.

As previously mentioned, realistically this model does not present an exciting business opportunity for an outside investor without additional value-adds such as nurseries for seedling production and fermentation facilities for high grade cocoa beans or chocolate. However, for a professional farmer living in a context where current living income estimates are around \$3,000 per year for a family of 4, if sufficiently financed and managed, the local business case is clear.

Therefore, from an investment standpoint, it is more sensible to see this business case not in terms of direct monetary bottom line, but rather in the light of indirect returns and big picture benefits for private sector supply chains, government interests, and the social and environmental impact that results from improved farmer livelihoods in proportion to the availability of high-quality planting material.

Recommendation

Given the variety of stakeholders that would benefit from localized cocoa seed garden establishment, we can imagine a number of collaborative configurations. The private sector, the non-profit sector, government, and local farmers all stand to gain from their respective standpoints, albeit likely not by way of establishing a seed garden as a “pure” business. Although a case can be made for doing so on a large-scale numbers-wise, due to the amount of variables and hence, risk, a multi-stakeholder approach catering to the interests of each party is recommended at the present time.

Our recommendation focuses on Cocoa Sustainability Partnership as the initiator, given their proven track record of success with managing public-private partnerships and with their varied network of private and non-profit sector members present in cocoa production centres. Area selection should be contingent on private sector “buy-in” as a prerequisite, along with regional government support, preferably beginning in an area of Sulawesi based on need. The below table outlines a suggested framework for collaboration. =

| Stakeholder | Role (Cost) | Outcome (Benefit) |
|--|---|--|
| Cocoa Sustainability Partnership | <ul style="list-style-type: none"> - Concept note development / initiation of project - Approaching of public and private stakeholders to unite in partnership - Lobbying and advocacy - Oversight, facilitation, and problem-solving | <ul style="list-style-type: none"> - Helps achieve mandate of sustainable supply chains - Helps achieve objective of sustainable farmer livelihoods |
| Cocoa Industry Partner (Private Sector i.e., Mars, Barry Callebaut, Olam, Cargill, Mondelez, JB Cocoa, et al) | <ul style="list-style-type: none"> - Connection to capable farmers in district(s) of focus - Guidance and consultation for key farmer(s) / seed garden owner/manager - Facilitation of partnerships with local nurseries for purchase and distribution of planting material to farmers - Socialization activities raising awareness of farmers and incentivization of environmental management - Financial investment upon calculation of the monetary benefit for supply chain security | <ul style="list-style-type: none"> - Secures supply chain - Achieves sustainability goals of CSR and/or sustainability budget |
| Non-Profit Partner(s) | <ul style="list-style-type: none"> - Advice and consultation - Expertise particularly in areas of environmental conservation, deforestation/reforestation, and sustainable livelihoods - Impact accountability - Socialization activities raising awareness of farmers and incentivization of environmental management - Financial partnership | <ul style="list-style-type: none"> - Expands portfolio of deforestation/environment-related projects in an innovative way - Helps achieve goals of forest preservation - Helps achieve goals of farmer livelihood improvement |

| Stakeholder | Role (Cost) | Outcome (Benefit) |
|---|---|--|
| National Ministry of Agriculture | <ul style="list-style-type: none"> - Facilitation of the certification process - Regulatory consultation - Alignment of goals - Potential additional allocation from national budget (APBN) for capital and/or seedling purchase for distribution | <ul style="list-style-type: none"> - Significantly contributes to the goals laid out in the cocoa roadmap - Shows their commitment to farmer livelihoods and Indonesian cocoa sector development |
| Local Agricultural Department(s) | <ul style="list-style-type: none"> - Approval and alignment - Consultation - Potential additional allocation from regional budget (APBD) for capital and/or seedling purchase for distribution | <ul style="list-style-type: none"> - Attracts investment within their jurisdiction - Shows their commitment to farmer livelihoods and Indonesian cocoa sector development |
| Key Farmers | <ul style="list-style-type: none"> - Allocation of land for the seed garden in line with certification requirements - Compliance with the certification process guided by partners - Seed garden management guided by partners | <ul style="list-style-type: none"> - Receive a significant individual source of income - Become a catalyst toward regional cocoa development and livelihood improvement |
| Smallholder Farmers | <ul style="list-style-type: none"> - Attendance of socialization activities - Attendance of training activities - Commitment to zero deforestation (related to any crop) - Purchase and/or receipt and care of high-quality seedlings | <ul style="list-style-type: none"> - Realize increased cocoa productivity - Receive greater income - Take pride in forest conservation |





If we assume that a minimum of 4-5% of cocoa farm area must be replanted each year in order to increase and maintain a reasonable level of productivity, let's look at the four "cocoa belts" of Sulawesi which account for 60% of Indonesian cocoa production, **but are not currently being served by any certified seed gardens**. Assumption of seeds required is based on 800 seeds required per hectare.

| Location | Cocoa Farms (Ha) | Replanting (Ha/Yr.) | Seeds Required / Yr. |
|--------------------|------------------|---------------------|----------------------|
| Central Sulawesi | 283,626 | 14,181 | 11,345,040 |
| Southeast Sulawesi | 254,811 | 12,741 | 10,192,440 |
| South Sulawesi | 218,169 | 10,908 | 8,726,260 |
| West Sulawesi | 144,971 | 7,249 | 5,798,840 |
| Total | 901,577 | 45,079 | 36,062,580 |

Source: Indonesian Cocoa Association (ASKINDO), 2021.

Meanwhile, the Indonesian Ministry of Agriculture has expressed the below targets for the funding, production, and distribution of seedlings for replanting from 2021-2028 (amounts vary minimally from year to year - shown below is the target for 2021):

| Location | Cocoa Farms (Ha) | Replanting (Ha/Yr.) | Seeds Required / Yr. * |
|--------------------|------------------|---------------------|------------------------|
| Central Sulawesi | 283,626 | 2,768 | 2,214,400 |
| Southeast Sulawesi | 254,811 | 2,795 | 2,236,000 |
| South Sulawesi | 218,169 | 3,633 | 2,897,600 |
| West Sulawesi | 144,971 | 2,435 | 1,948,000 |
| Total | 901,577 | 11,631 | 9,296,000 |

Source: Cocoa Roadmap, Ministry of Agriculture, 2020.

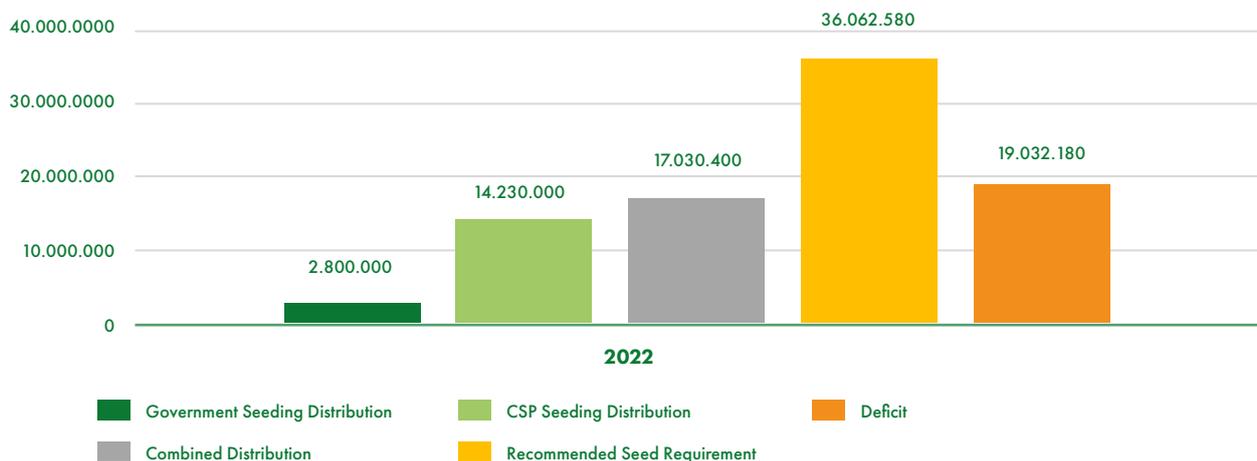
* Approximated and not stated explicitly in the roadmap



However, due to budgetary and production limitations, the Minister stated at the CSP General Assembly meeting on 16 December 2021 that allocation for seedling distribution in 2022 would be “up to 5000 hectares”. Continued advocacy and alignment between the public and private cocoa sectors is underway to address this issue. As it stands in 2022, an optimistic projection of seedling distribution for replanting

in the four Sulawesi cocoa production centres is seen in the chart below and still reveals significant shortcomings. This projection also assumes that CSP continues an increase trajectory at 14% per year, which in reality is unlikely considering the continuing restraints of rootstock (certified seeds) availability.

Protected Availability of Certified Planting Material in Sulawesi Cocoa Production Centres in 2022 (Unit: Seeds)



Based on the approximate deficit of 19,032,180 high-quality cocoa seedlings per year in the four cocoa belts of Sulawesi, and the approximation that a one-hectare seed garden can produce 1,260,000 seeds per year, **there is a need for around 15 hectares of seed gardens in Sulawesi alone** if cocoa sustainability is to be achieved in terms of planting material. Given the fact that establishing 15 hectares of successful

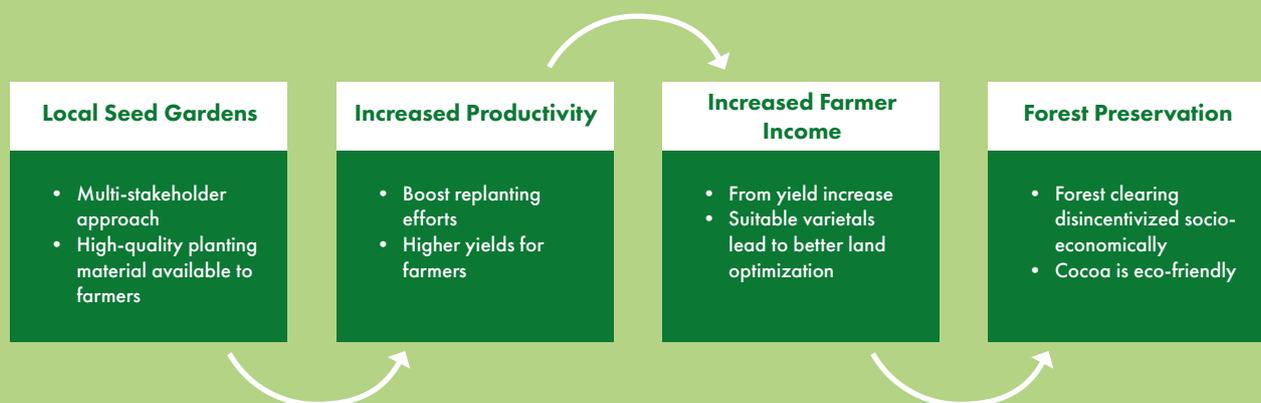
seed gardens across Sulawesi is no simple task, **the current recommended course of action is to proceed with a pilot project of 1-2 hectares, initiated by Cocoa Sustainability Partnership, and location determined by willingness of local actors as mentioned above.** This recommendation mitigates risk at a manageable scale, potentially providing a model for further expansion.

Conclusion

Availability of high-quality planting material for replanting of cocoa farms remains a bottleneck within the realm of Indonesian cocoa sustainability. This lack of planting material leads to negative socio-economic and environmental impacts. In the present era, it has become necessary for cocoa stakeholders to face issues of deforestation on macro and micro scales. Likewise, there is both necessity and opportunity for environmental stakeholders to take a deeper interest in Indonesian cocoa sustainability given the potential two-fold positive impact of cocoa cultivation from a conservationist perspective:

- 01** Improved livelihoods in cocoa producing communities disincentivizes deforestation
- 02** As a shade crop, cocoa is considerably more compatible with agroforestry and forest preservation than other income alternatives for farmers, and therefore should be encouraged

Although there are many facets involved in increasing cocoa productivity, localized cocoa seed gardens stand out as perhaps the most pressing need at this time. Since seed garden establishment presents clear benefits for public, private, non-profit, and smallholder stakeholders, it is recommended that Cocoa Sustainability Partnership (CSP) and its private sector members drive this effort in partnership with national local governments and environmental/non-profit parties. Such a collaboration has the potential to help achieve the goals of each respective stakeholder through the establishment and expansion of certified local seed gardens, beginning in Sulawesi.



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The Tropical Forest Alliance

TFA is a global multistakeholder partnership platform initiated to support the implementation of private-sector commitments as well as to amplify demand-side engagement in major economies towards the transition to reduced deforestation commodity supply chains. Hosted by the World Economic Forum, TFA partners with 170+ organizations - companies, government entities, civil society, indigenous peoples, local communities and international agencies. TFA operates regional platforms in Latin America, West and Central Africa, China, and Southeast Asia.

Cocoa Sustainability Partnership

A forum for public-private collaboration and actively for the betterment of cocoa development in Indonesia. CSP supports the Indonesian cocoa sector in the international market, and exists to increase communication, coordination and collaboration between public and private stakeholders engaged in cocoa sustainability activities in Indonesia for the mutual benefit of all cocoas sector players.

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It is our hope that this study could inspire scaled sustainability commitment and further collective actions across all stakeholders in our journey towards deforestation-free commodities supply chain, other forest-positive shared agendas, and eventually our pursuit towards net zero.

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