



Illipe Nut: A New Value Chain with Strong Social and Gender Potential

Case study
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Forestwise's work in the illipe nut value chain has demonstrated positive impacts for local communities and evidence to-date indicates that this has the potential to economically empower women and also bring health benefits.

It is widely acknowledged that non-timber forest products (NTFPs) play a crucial role in the rural livelihoods of indigenous groups. However, the lack of access to a well-established market and supply chain can make it difficult for people to make decent incomes. In Indonesia, Forestwise's work on the illipe nut value chain has helped communities by setting up a facility close to them and improving processing techniques for local and native Dayak communities in West Kalimantan. Our research shows that farmers and collectors within Forestwise's value chain have experienced major improvements to their income as a result of these activities; during the most recent harvest in 2019, communities received at least six-times their usual income (IDR 6-7,000 per kilo instead of IDR 1,000). Additionally, men and women have experienced positive health impacts due to the improved processing techniques – namely by switching from smoke-

drying to sun-drying. These techniques are safer, more environmentally friendly, and cost- and labour-efficient. In the long-term, it is expected that this will create financial incentives for communities to continue protecting the remaining Indonesian Borneo forest. While Forestwise's activities are still ongoing, more targeted support will be needed to ensure women and girls receive equal access and are economically empowered by the project.

This case study highlights the benefits that sustainable and robust market access can play for improving the incomes of forest-dependent communities and the different gender roles in the value chain. General recommendations are also shared for organisations looking to improve their gender and diversity impacts at the end. Findings have been pulled out of two research reports that were completed in 2020 that will frame future considerations made by Forestwise.



Context

The threat of deforestation and value of standing forests

Borneo's forest once covered an area of 74 million hectares (ha) (approximately three times the size of the UK) and was home to a rich biodiversity of flora and fauna. The Borneo landscape also contains mangrove and peat swamp forests that act as globally important stores of carbon. Despite its rich biodiversity and carbon importance, the area has lost half of its forest cover to agricultural expansion, encroachment, and logging over the past 50 years.

Illipe nuts come from the *Shorea Stenoptera* tree, which is endemic to the rainforests of Borneo. These trees grow naturally in the rainforests but can also be found in communities' fields, riverbanks, and culturally sacred sites or *tembawai*. The tree has a two- to ten-year flowering cycle and is well known for its high-quality hardwood for buildings in waterlogged places or swamps. For years, locals in West Kalimantan have been supplementing their incomes by harvesting and selling illipe nuts (locally known as 'tengkawang'). Each illipe tree can produce up to 800 kilograms of nuts per harvest season and live more than 100 years.

In West Kalimantan, Indonesia, the Dayak – one of Borneo's native groups – collect the fruit from the forest floor and process it into a butter for cooking, candle making, and medicinal purposes. The butter is a premium substitute to shea or cocoa butter. Well suited to produce cosmetics, the butter has gained international recognition and demand in the beauty industry.

Despite the promising potential of illipe butter, communities face serious challenges in terms of supply. Firstly, the irregular harvest seasons mean that the price they receive is prone to fluctuations and therefore makes it impossible for community members to plan their time. The buying price and purchase quota is often controlled by the factory and big traders. Historically, the price of the fresh fruit nut collected by the communities ranged from IDR 1,000 to 3,000 (GBP 0.05 to 0.16 pence) per

kilogram. Due to the low price, the communities have been more interested in selling the *Shorea* wood (locally known as 'meranti') that can generate a price between IDR 300,000 to 600,000 (GBP 16 to 32) per cubic meter.

Secondly, communities are unable to dry nuts in large quantities and process them into butter quickly enough. If not treated immediately after drying, nuts will rot, losing their value at market. Finally, options and access to sustainable markets are limited. This is problematic for industrial consumers that require consistent supply and quality. Even when supplies are plentiful, monopolistic practices result in farmers selling dried fruit or oil to collectors at relatively low prices at harvest time and even lower towards the end of the season. In some communities, a traditional system of "Ijon" – a mortgage system where collectors provide pre-payment for nuts in the pre-harvest at a very low price – is popular, leaving a minimal profit margin for farmers and smaller collectors.

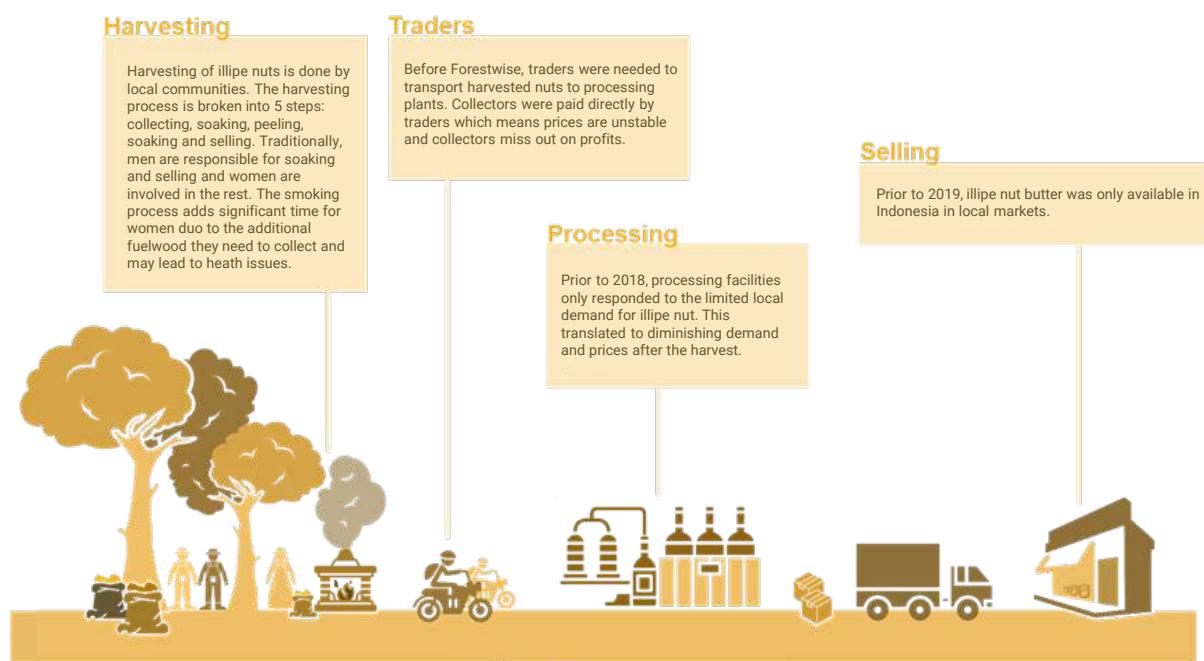
Still, when it's in harvest the illipe nut supply is abundant. Recent data shows that during the harvest season in 2019, across eight districts between 1,930 and 6,048 tonnes of nuts were collected (see Table 2). Still, the lack of access to markets combined with a lack of players has made it difficult for communities to secure decent incomes. While the harvests have continued over the years, community members increasingly see illipe nuts as a complimentary rather than a reliable livelihood source.

As mentioned by a local community member:

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When dealing with middlemen for an uncertain price, there are times when we get a lot of profit from it but there are also times where we lose money. Price is very much determined by the middleman.”

Diagram 2.
The
traditional
illipe nut
value chain
process



Illipe nuts for environmental and community benefits

For Dayak communities, the illipe tree is sacred. According to Dayak elders, there are customary rules in harvesting and processing illipe nuts, including when to harvest, who is involved, the division of labour (including participation of women and children), and a clear and fair distribution of benefits. In practice, men and women are involved in different aspects of the illipe nut value chain.

Traditionally, men have taken a lead role in production: doing the more labour-intensive jobs such as carrying the sacks and cleaning the nut in nearby streams. Women typically collect the nuts from the forest floor and are responsible for smoke-drying them. The nuts are then collected and given to men to transport and sell the dried nuts to traders.

Since the trees are located in areas where traditional Dayak customs are dominant, local customs determine the ownership of trees based on inheritance. In terms of forest management, there are four ways Dayak people manage illipe trees depending on ownership (see Table 1).

Illipe nut trees are also found in religious areas such as forest cemeteries (referred to as "Gupung") that are protected forest areas for community members.

These environmental and social considerations are important to establishing a forest-friendly brand, so better understanding the gender impacts has been an area of great interest for Forestwise.

Table 1. Tree management methods by the Dayak people in West Kalimantan

Tembawang Type	Ownership	Management
1 Public ("Tembawang Umum")	Belonging to a single village	Anyone in the village can harvest the nuts as long as they do not stay overnight
2 Hereditary ("Tembawang Waris tua")	Owned by around 3-6 generations of a family from the same bloodline	The family manages the illipe nut tree together with their own rules
3 New Hier ("Tembawang Waris Muda")	Owned by up to 2 generations	One large family will manage the tree and reap the benefits from the harvest
4 Individual ("Tembawang muda/Perseorangan/individu")	Owned by an individual	Personal management. Members of the family will help with the harvest as part of their house chores

Forestwise's intervention in the illipe nut value chain

Forestwise is an ethical commodity trader founded in 2018. The company operates from two hubs: the Netherlands, where the sales office is located, and West Kalimantan, Indonesia, where it operates a full subsidiary factory (better known in Indonesia as 'PT The Wild Keepers'). The company is working to develop a market for forests products with dual objectives of increasing the economic value of the remaining forests and providing economic benefits for communities, as a way to discourage them from further cutting down trees.

To ensure communities receive maximum benefits, Forestwise buys the nuts directly from forest communities through a purchase agreement signed by individual farmers and collectors. The contract states an agreed price per kilogram, technical requirements, and desired quality of the nuts. For the 2019 harvest, the average price secured by households was IDR 6-7,000 per kilogram of dried nuts. Recently, Forestwise has included a forest protection clause to ensure the long-term protection of the illipe trees and areas by the suppliers.

Since its establishment, Forestwise has signed agreements with 740 people in 32 villages across West Kalimantan. Out of the 740, 22% of these contracts have been directly signed by women (see Diagram 4 for more details).

To maintain the consistency of the quality of nuts being supplied, the company trained contractors in a more cost and labour efficient process: switching from a smoking process to one that involves soaking and sun-drying the nuts. Not only was this aligned with local wisdom, but the simplified method also improves the quality of dried nuts and helps avoid health risks faced by men, women, and children from indoor smoke exposure (see Diagram 1). Additionally, findings suggest that men and women save time from not having to collect fuelwood for drying. Although the health benefits of the new techniques have not been assessed in detail, the respiratory issues associated with indoor smoke inhalation (e.g. with indoor cooking) have been well documented.

To sustain a high-quality supply and stable prices for the community, Forestwise stores nuts in a dry storage facility, allowing the company to ensure an uninterrupted supply beyond the harvesting season. The rationale behind P4F's support was to help unlock the potential of illipe nut and increase the overall volume traded which will improve the price received by the local communities. These financial benefits will in turn incentivise local communities to protect the forests from which the nuts are harvested.

A clear social benefit, combined with the environmental impact, is expected to attract interest in the high-end products from the national and international cosmetics market. Lush Cosmetics North America, a global cosmetics retailer, was drawn to the environmental and social impact of Forestwise's business and is now a repeat buyer of illipe nut butter.

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When making sourcing decisions, positive environmental and social impact are key metrics. We've been working with Forestwise on illipe butter since 2019 and their business model based on forest conservation through community collaboration has continued to impress. During our first visit in 2019 it was clear the care that has gone into cultivating relationships with partner communities. Their transparency in operating, commitment to continual improvement and willingness to collaborate has made them an incredibly valued supplier.”

- Jesse Pretty, Buying – Lush Cosmetics North America

(Source: [Forestwise's website](#))

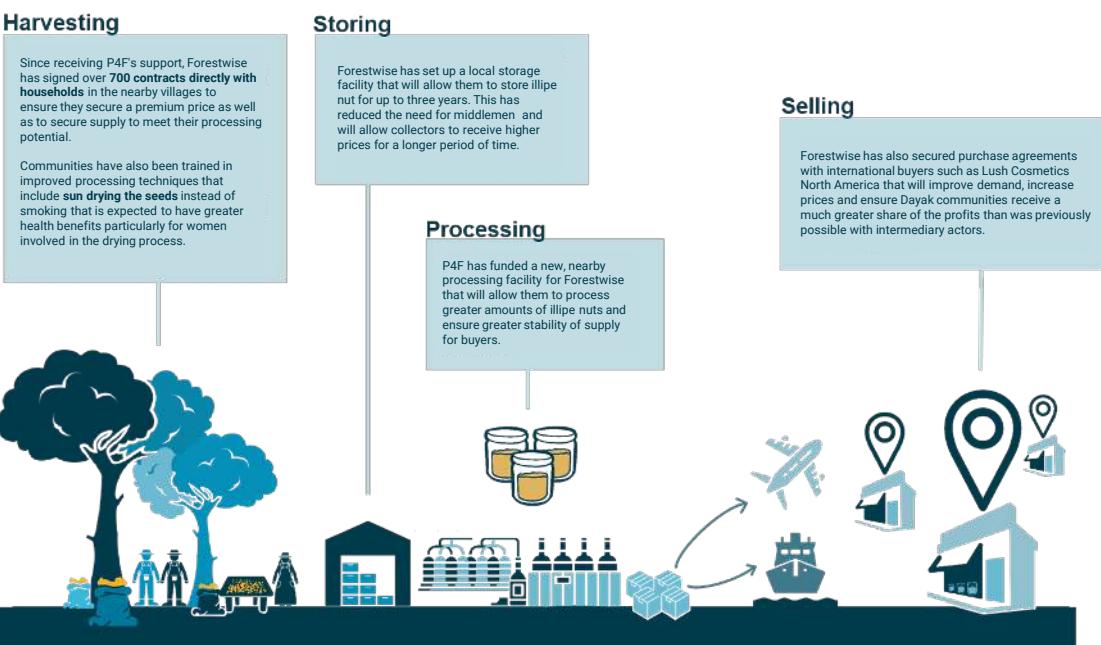


Diagram 2.
The illipe nut
value chain
as a result of
Forestwise's
intervention

A closer look at the value chain and how Forestwise, with support from P4F, is transforming it

The area where Forestwise purchases nuts is only a fraction of the available harvest – as of 2020, only 32 out of a possible 73 villages have contracts with the enterprise. Expanding into the wider area is a key growth opportunity for the enterprise and communities but has been limited for a number of reasons including processing capabilities.

With P4F's support, Forestwise completed a feasibility study on the illipe market and production potential, then designed and built a processing unit and storage facility to address any processing limitations.

To run operations, the business employs around 30 people (predominantly men – 90%) to take on roles that require heavy-physical work at the factory and field levels. Of those employed, three are women and are responsible for performing administrative and management activities. Diagram 2 demonstrates the changes in the value chain Forestwise made between 2019 and 2020. The mass blooming in 2019 meant that rates that year were significantly higher than the numbers forecasted for 2020. In 2019, the Government of Indonesia also restricted the export of raw illipe nut out of the country. Furthermore, due to Covid-19, there has been a decline in demand during 2020 that will likely put a halt to nut purchases from the communities next year.

Establishing a processing unit has been a huge step for Forestwise and the local community. Despite some initial doubts from the collectors around the new storage facility and processing unit, many new collectors have wanted to sign supplier contracts for the next harvest. Overall the storage facility is expected to allow supply consistency to market for the next three years, and a larger processing facility will help improve the quantity of butter needed to secure international off-take agreements and sales.

Additionally, some collectors have also started to replant Shorea tree seeds indicating that local people are optimistic of the livelihood changes these improvements will bring.

Table 2.
Harvest per
district in
2017

Source: Jaringan
Tengkawang
Kalimantan
Barat, 2017 in
the report of
SOC, 2019

District	Harvest per season (Tonnes) (2017)		Total villages
	Min	Max	
Kapuas Hulu	646	1,893	27
Bengkayang	92	252	10
Ketapang	320	1,230	2
Landak	436	1,316	11
Melawi	105	407	10
Sanggau	32	150	3
Sekadau	85	270	8
Sintang	215	530	2
Total	1,931	6,048	73

Diagram 3. A gendered breakdown of the illipe nut processing activities



Diagram 4. The quantitative results that Forestwise has achieved since 2019





Erda Frisia, nurse, West Kalimantan

Change #1: Improved incomes and economic opportunities for women

Thirty-nine-year-old Erda Frisia works as a nurse at the Pustu Madya Raya, a clinic in West Kalimantan. She is also seasonal illipe nut collector. Erda collects nuts in the afternoon so as not to conflict with her farming activities or her work with the community. According to her, the illipe season has brought a positive impact for her village: "Families' incomes have increased, and most families have used the money they've received for children's education and family savings".

She also mentioned that the Forestwise business model has provided opportunities for women to get involved in the value chain. Specifically, the soaking process recommended by Forestwise is easy to do and will help unlock economic opportunities for many women in the village.

P4F will continue to support Forestwise in its development of a gender-inclusive value chain and provide economic opportunities for both men and women, local and indigenous communities, while remaining respectful to Dayak people's culture and traditions.

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This soaking and sun-drying system is not heavy for women; it's different from the smoke processing that requires firewood. It is hard for us women because it is hard to build a fireplace. With the Forestwise system, women can get involved in all the steps – starting from collecting, removing the shell, filling the sack, and soaking. We can do it all without help from our husband or any man. Only when it comes to carrying it back after soaking, we need help from men because it is just too heavy for us."

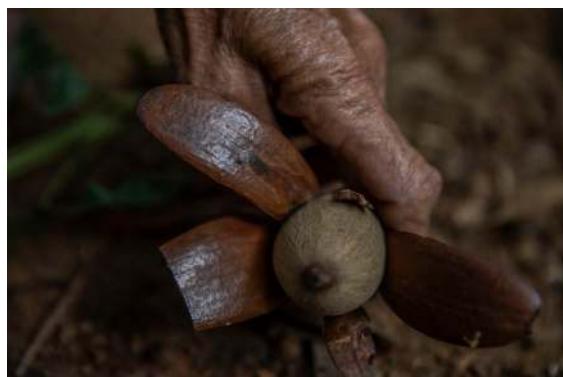
– Erda Frisia, 39, Nurse at the Pustu Madya Raya, Desa Madya Raya, Sayan sub-district, West Kalimantan.

Change #2: Improved skills and health conditions for workers

Due to industry technical requirements, illipe nuts collected from the forest floor need to be boiled in order to soften their outer shells and remove the nuts. Previously, guidance to communities was to then smoke-dry the nuts over a fire. Forestwise changed this and reintroduced an old tradition that involves sun-drying the nuts instead. This more efficient method is much safer for community members. It also gives back the time previously spent collecting fuelwood and reduces the health risks from households' long-exposure to smoke and fumes.

Herni is an elementary school teacher in Upit Village, Melawi District, West Kalimantan. Her husband, Joni, is a village-level trader of illipe nuts. His busy travel schedule to Nanga Pinoh has made Herni accustomed to receiving and serving residents who sell illipe nuts at their house. Herni inherited illipe trees from her parents and, since childhood, she has been well accustomed to going to the forest to fetch them: common practice for Dayak women. Herni felt encouraged to take part in collecting nuts in the last harvest after learning of the price Forestwise would pay.

According to Herni, their ancestors used to soak the illipe fruit, but they stopped when a factory in Pontianak started requesting nuts be smoked first (also called the 'Salai' method). According to Herni, the processing of tengkawang fruit using the Salai method was very burdensome and workers were exposed to fire and health problems.



**Herni, Elementary school teacher,
Upit Village, Melawi District, West
Kalimantan**

“

Salai work is tough in preparing the nuts and women can't do it alone; they have to be assisted by men. We also have to keep on guarding the smoking process. When peeling the skin of illipe, if the skin is sensitive or not strong, it can cause itching and shortness of breath. Burning dust also causes shortness of breath.”

– Herni, 35, elementary school teacher in Upit Village, Melawi District, West Kalimantan

Change #3: Improved protection for illipe trees and forests

Forestwise's operations in Upit village have had a positive economic impact on the community by raising incomes and awareness on the importance of protecting the tengkawang tree. Initially the community was apathetic and hesitant about the tengkawang business. In the past decades, hundreds of tengkawang trees have been cut down by community members looking to make an income from the timber. Since Forestwise's interventions however, people have stopped cutting down the trees and some have even started replanting tengkawang seeds.

According to the Head of Upit village, Lapin, nearly all Upit's community members have access to illipe nut trees and can benefit from the harvest. Forestwise's cooperation model with farmers and collectors has helped them secure a good price prior to the harvest and avoids any middlemen that previously took profits away from collectors and farmers.

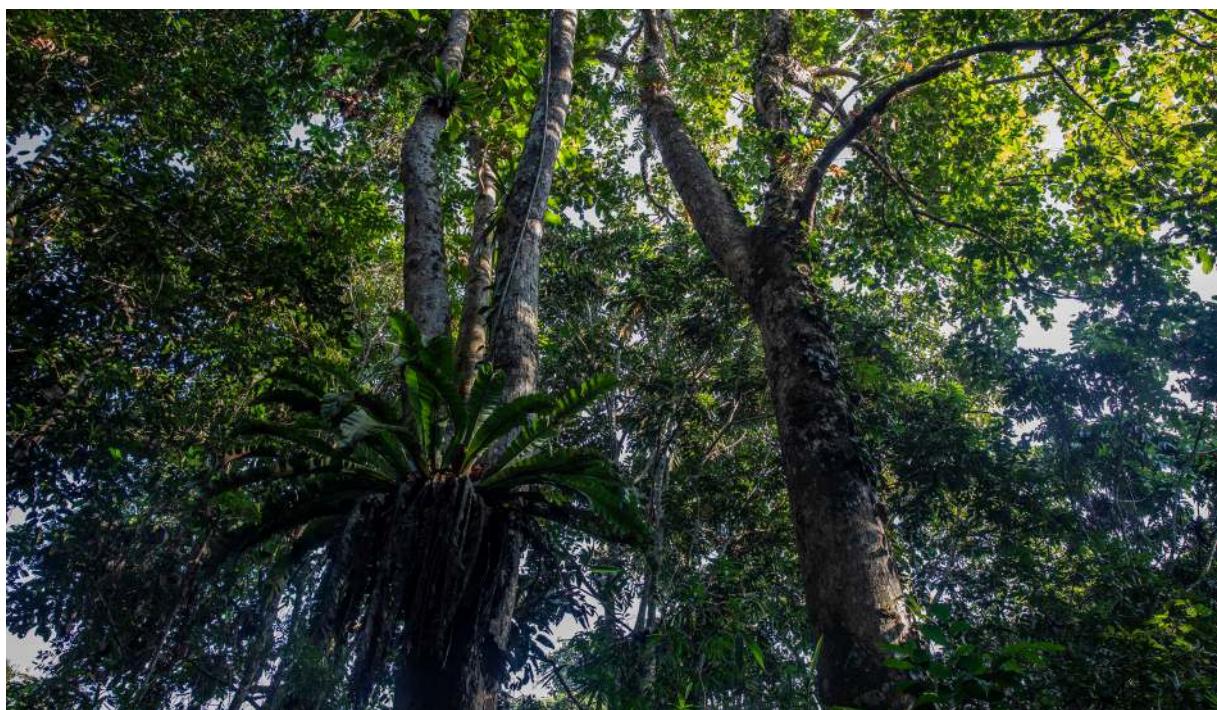
Another interesting finding in Upit was that community members are in the process of converting part of their administrative areas into

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Forestwise's illipe nut value chain brings economic benefits to people in my village. The community was apathetic at first, knowing that illipe nut has almost no value. There used to be hundreds of illipe trees in my village. Many have been chopped down because there was no selling value other than the wood. Ever since illipe nut has a luring price, the community has not cut trees anymore, in fact, they now start replanting."

– Lapin S.Pd, 35 , Head of Upit Village

"Village Forests' under Indonesia's social forestry scheme with a proposed area of 1,800 hectares. The proposal has been verified by the Ministry of Environment and Forestry and is currently waiting to be formalised through a ministerial decree. Local NGOs, such as the Suar Institute and AMAN, are assisting the process and could help further protect the remaining forests in the area.



Recommendations

The improvements to the illipe nut value chain have brought about new opportunities for forest protection and has helped pave the way to consider further gender inclusive activities that Forestwise could adopt. It has demonstrated to stakeholders that there exists an enormous potential to protect the remaining forests in West Kalimantan alongside supporting local communities. While much more work will be needed to make the value chain more gender inclusive, some early lessons can be shared that can help other organisations that may be looking to do the same.

Lesson 1: Internalise the GESI in the business

Set organisational policies, procedures and measures that promote gender empowerment and diversity in the workplace

This can include creating Code of Conduct, diversity, anti-discrimination, anti-harassment, whistleblowing, and safeguarding policies that are relevant across the entire organisation and delivery partners. In designing these, organisations also need to set aside resources to train staff, contractors and sub-contractors on the concepts, procedures, and responsibilities at least on an annual basis.

Design non-discriminatory recruitment procedures, quotas and opportunities for women and marginalised groups at all levels of management

Gender and diversity sensitive recruitment processes can help attract greater diversity in candidates but it is important for organisations to set timebound targets for every level of management. To complement this, organisations need to ensure women and other groups also progress internally and are able to access and benefit from trainings and opportunities offered.

Set a diversity and gender focal point at board-level

Having a focal point to design, coordinate, implement and monitor gender and diversity measures at the highest level of an organisation will help ensure decisions are made promptly and are mainstreamed across operations. This individual needs to be trained and have the right

incentives and resources to take this work forward in a meaningful way.

Lesson 2: Create targeted invitations and measures to ensure women and other groups' voices are heard early on in the design phase

Any rural project requires thorough research and consultations with local communities in the surrounding area. This needs to happen early on and should be conducted in a consultative, open fashion. Measures need to be taken to ensure diversity is captured in the participation of communities and targeted measures are in place to best ensure women and girls and other less empowered groups have the opportunity to understand the details of the project, ask questions, safely share their opinions, and have access to grievance mechanisms throughout the process.

Additionally, how, when and who is delivering information and invitations are key considerations to ensure non-dominant voices are heard. For example, hire female outreach officers or ensure childcare can be arranged for women who may like to attend but need to also attend to their families.

In addition to the above, more targeted activities may include: procuring for a gender assessment of the organisation and project activities (may also be referred to as an social impact assessment), hiring a gender or diversity expert, creating a set of gender or diversity tools and templates to monitor results, creating a gender and diversity strategy, budgeting for gender and marginalised groups research, and gathering gender and diversity disaggregated data (in line with national policies).

Acknowledgements

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Revision

Images

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