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VIABILITY OF A COST RECOVERY MODEL FOR FARM-LEVEL TENURE DOCUMENTATION AND TREE TENURE REGISTRATION: EXPERIENCES FROM THE ASANKRANGWA STOOL

INTEGRATED LAND AND RESOURCE GOVERNANCE TASK ORDER UNDER THE STRENGTHENING TENURE AND RESOURCE RIGHTS II (STARR II) IDIQ

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Cover Photo: Meridia's field manager handing over a FarmSeal document to a farmer

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LIST OF ACRONYMS

CEL	Communications, Evidence and Learning
CLS	Customary Land Secretariat
COVID-19	Coronavirus Disease 2019
ECOM	Ecom Agroindustrial Corp.
FC	Forestry Commission
ILRG	Integrated Land and Resource Governance
LAP	World Bank Land Administration Project
LBC	Licensed Buying Company
OASL	Office of the Administrator of Stool Lands (under the Ministry of Lands and Natural Resources)
TGCC	Tenure and Global Climate Change
UAV	Unmanned Aerial Vehicle
USAID	United States Agency for International Development

EXECUTIVE SUMMARY

The United States Agency for International Development's (USAID's) Integrated Land and Resource Governance (ILRG) program is carrying out a two-year Supporting Deforestation-Free Cocoa in Ghana activity, building on the work of USAID's previous Tenure and Global Climate Change (TGCC) program. TGCC worked in the community of Nyame Nnae in Asankrangwa Stool in Wassa Amenfi District; local farmers were provided with land documentation approved by the Stool Chief, free of charge. Under the ILRG activity, subcontractor Meridia offered farmers in four communities in Asankrangwa a FarmSeal certificate of ownership, approved and recorded by the Stool Chief, with some cost subsidization by USAID. The cost subsidies were provided to try to create a level playing field so that all farmers, regardless of social category and relative wealth, could afford the cost of the documentation. The subsidy covered 20 to 70 percent of the cost of farm documentation.

This report is a summary of the work that Meridia carried out under the USAID ILRG project in four communities in the Asankrangwa Stool and reflects primarily the points of view of the field team delegated with the tasks of carrying out a sub-contract with Tetra Tech, the project implementing partner. The views expressed in this report are of the Meridia team itself and do not reflect policy positions by either USAID or the ILRG Ghana activity. An impact evaluation planned by the USAID Communication Evidence and Learning (CEL) project will be carried out to test, validate, or refute the findings and perspectives of the Meridia team <https://www.land-links.org/project/communications-evidence-and-learning-cel/>. Hopefully, the perspectives from field implementation experience will guide a more in-depth impact evaluation.

The Meridia FarmSeal service consists of a process of conducting community outreach and dialogue to introduce the service to farmers, mapping farm parcels and other geographic features, setting a sliding fee scale based on farm parcel size, and then registering the rights with the customary authorities. The service requires farmers to pay some, if not the majority, of the costs of the final FarmSeal document. By the end of Meridia's initial efforts, 842 parcels had been mapped (591 male, 201 female, 47 no data because parcels were mapped but farmers never made themselves available for household interviews), with 766 farmers consenting to the mapping services (1.1 farms per farmer). Despite Meridia's intensive community outreach and dialogue to encourage farmers to buy into the service, only 70 FarmSeal documents were sold, a far lower rate than anticipated. From Meridia's perspective (recognizing that the USAID Communications, Evidence and Learning [CEL] project will conduct an evaluation of the land documentation process) (Persha et al, 2020), low sales were due to the following major factors:

- Farmers believed that the FarmSeal documents should be free because certificates were previously issued in Nyame Nnae at no cost under the TGCC pilot. While this was an experimental and pilot initiative, farmers nevertheless felt that the ILRG project possessed the means to distribute free FarmSeal certificates and thus that all farmers in the area should be treated equally.
- Farmers held limited funds to pay for FarmSeal services due to the poor financial viability of cocoa farming.
- One of the influential village chiefs, an *odikro*, expressed his view that the purchase of FarmSeal documentation would not preclude the need to negotiate new tenure arrangements with landowners when current tenancy arrangements come to an end, generally at the point when cocoa fields must be replanted after old age or disease. Even though the ILRG and Meridia team believed at the outset of land documentation that the customary tenure agreements would hold firm, this single disagreement led to a major impasse (see Section 2.2.5 below for more detail).

Since a large number of trees in the pilot villages are indeed in need of replacement, the concern raised by the *odikro* seemed well-founded to other chiefs.

In order to reach the project's target of at least 520 documents delivered,¹ a joint decision between USAID and the ILRG Ghana task team was made to change the delivery approach and deliver all FarmSeal documents for free or for a token amount of 20 cedis (about USD \$3.50) per parcel.

This report summarizes the lessons learned thus far through the experience gained in the four pilot villages. The major lessons are summarized here in order to inform similar land documentation approaches in Ghana and elsewhere.

- The land documentation pilot led to a deeper understanding of the applicability of the pricing model in Ghana's cocoa-growing areas. Meridia prepared a pricing spectrum model from fully commercial sales to full subsidization, with an intermediate cost recovery model, depending on underlying situational factors. Although ILRG initially took the cost recovery approach, in the end the project had to return to a full subsidization model.
- The willingness to pay for a farm documentation service is determined by a wide range of factors. From the perspective of Meridia, in hindsight, it now seems that the cost recovery model may have been doomed from the outset because the previous USAID TGCC project in the Asankrangwa Stool had provided free certificates in a nearby community. This key conclusion should be more fully addressed by the endline evaluation that will be carried out by the USAID CEL project. But other factors are also at play: support from traditional leaders for a fee-for-service is essential, but in Asankrangwa, the acting stool chief may not have exercised as much influence as a fully sitting chief. Ultimately, the farmers themselves need to perceive the benefits of land documentation. Strong demand for the service did not emerge for many reasons, but perhaps principally because landowners remain convinced of their rights and authority over land, and the *abunu* tenant farmers remain cognizant of their subordinate status.
- The central premise of the cost recovery initiative and the experiment in the four pilot villages was to reduce dependency on donor subsidization of land documentation. While the techniques of land documentation (mapping, establishing databases, and issuing certificates) are now refined, the heart of the issue – subsidization – is not resolved. In other parts of Ghana, it appears that farmers want to purchase land documentation services, possess a greater ability to pay, and are thus they are willing to pay for a greater share of a FarmSeal document. Since this is not the case in the four ILRG villages of the Asankrangwa Stool, the verdict is still out. In situations like those in the Asankrangwa Stool, land documentation will mostly likely continue to require subsidization by government, the private sector, or donors.
- Under TGCC, Meridia carried out a pilot land documentation initiative focused on documenting customary rights as found at the time in the community through a process of dialogue and discussion with community members and traditional authorities. Contrary to other similar land documentation projects in Ghana, Meridia did not try to fit the documentation process into the statutory framework or generic customary title documents circulating around the country. The systemic complexities of fee-for-service land documentation described in this report still remain at the stool level and especially around the maintenance of land records, whether through a subsidized service delivery model or not. Maintenance of land records at the stool level through the customary land secretariats is difficult across all the secretariats in Ghana, and government commitment to adequate financing and support of these secretariats is generally lacking.

¹ Among other factors, this target was based on reaching a sufficient number of documented farmers to meet the requirements of the quantitative evaluation study carried out initially by the USAID CEL project.

Through the ILRG program in Ghana, Meridia will still be able to test the Ghana°Ground approach and technology, a method to collect and store land records on tablets that will enable the customary land secretariats to gain immediate insight into all documented landholdings and use this information to help prevent and mediate conflicts.

I.0 INTRODUCTION AND BACKGROUND

Three-quarters of the world's poorest people live in rural areas where land is a key asset. Among these, more than a billion people lack legal rights over the land they use, causing entrenched poverty cycles to persist over generations. Secure land rights help create a stable foundation for other important development work – like literacy, clean water, and nutrition – to take hold for generations to come.

In much of rural West Africa, farmers gain access to land through customary tenure. But rapid ecological, demographic, economic, social, and cultural changes are rendering land rights less secure, undermined by more intense resource competition, overlapping claims, and rising conflicts because for centuries people have accessed land and resources through complex social relations governed by local customary institutions. Verbal records of these rights are sometimes safeguarded in the memory of local elders (IIED, n.d.).

In Ghana, an assessment carried out by the United States Agency for International Development's (USAID's) Tenure and Global Climate Change (TGCC) program in 2016 found that insecure tenure among smallholder farmers was a significant barrier to rehabilitating aging cocoa farms. The assessment informed the design of a pilot undertaken by USAID in collaboration with the Hershey Company (Hershey) and Ecom Agroindustrial Corp. (ECOM) to improve cocoa productivity while reducing deforestation. The pilot was undertaken in the community of Nyame Nnae, and included components aimed at increasing tenure security for farmers, documenting interests in shade trees, developing a financing model to replant aging cocoa farms and provide farmers with extension services. The tenure security component included an activity to map the community of Nyame Nnae and to map farm parcels and provide land documentation to farmers. The activity resulted in the mapping of 190 farms, with documents signed by both the farmers and local traditional authorities (Roth et al., 2018).

USAID, Hershey, and ECOM agreed to build on the TGCC pilot under USAID's Integrated Land and Resource Governance program (ILRG) through a "bridge phase" to further test and refine a financially viable farm rehabilitation and land tenure strengthening model for the cocoa sector in Ghana, including testing and refining the model and cost recovery options for household land documentation (O'Sullivan et al., 2019). The "bridge phase" included expansion to additional communities in Asankrangwa. USAID's Communications, Evidence and Learning (CEL) project undertook an initial scoping trip to help select the communities; based on that information and discussion among the ILRG stakeholders, it was decided to expand to the communities of Domeabra, Sureso Nkwanta, and Yirase, and keep offering service in Nyame Nnae. CEL carried out an in-depth baseline study which documented factors contributing to the poor performance of the local cocoa economy, such as the high prevalence of cocoa swollen shoot virus, and noted the presence of illegal gold mining. An endline survey will be carried out during the final months of the CEL project (Persha et al., 2020).

Whereas the TGCC project worked with a sub-set of farmers within a single community and offered land documents for no cost, under ILRG a different approach was taken. ILRG carried out "wall-to-wall" mapping of all land in the four targeted communities, and tested farmers' willingness to pay by offering some subsidization of the cost, but asking farmers to pay at least a portion of the costs. Meridia, which had carried out the land documentation work under the TGCC pilot, was subcontracted once again under ILRG to offer those services.

Meridia and other organizations within the private sector support smallholder farmers to document their land tenure rights using innovative tools and systems, sometimes with support from development partners. Meridia offers a land documentation service called FarmSeal that incorporates outreach campaigns in rural communities; engagement with chiefs, customary landowners, and various types of

tenant farmers; fact-finding and situational assessments; mapping of land parcels; and issuing land documents to individual farmers. Meridia aims to provide at cost a rapid and efficient land documentation service to farmers, but also realizes that farmers face many competing demands for scarce household financial resources.

The FarmSeal process includes an initial period of community outreach and dialogue to introduce the service, and then proceeds to mapping farmers' fields to ascertain their size, setting an appropriate sliding fee scale based on farm parcel size, generating a document for each parcel, registering the rights with local customary authorities, and distributing the signed land documents. The farm mapping also included mapping of all shade trees and registration of the shade trees with the Forestry Commission, for interested farmers. Under the "wall-to-wall" approach, Meridia mapped not only all the farmed parcels in the four communities but also major geographical features such as marshy areas, abandoned *galamsey* mining sites, *mfofo* (secondary fallow forest), and other points of interest like schools, churches/mosque, and clinics. These features were mapped successfully and settlement maps were handed over to representatives of the four communities.

This report summarizes the cost recovery model and its implementation under ILRG (Section 2); then analyzes the payment modality, service bundling, limited uptake under ILRG, and local institutional embedding (Section 3); and finally makes recommendations as to how to continue developing and refining the fee for service model (Section 4).

2.0 THE COST RECOVERY MODEL

2.1 EXPLANATION OF THE COST RECOVERY MODEL

This section reviews the Meridia cost recovery model and presents some background context on how this model has been applied previously in Ghana. The summary below touches on the prevailing types of land tenure in the Asankrangwa Stool, not as a comprehensive review, but as an illustration of how the complexities of the land tenure situation affected the land documentation service.

2.1.1 MERIDIA'S EXPERIENCE DELIVERING FARM-LEVEL TENURE DOCUMENTATION IN GHANA

Over the years of working in Ghana, Meridia has collaborated with traditional areas and local Stool Chiefs and *odikro* village chiefs in Akyem Abuakwa, Aowin, Bole, Sefwi Wiawso, Suamana Gbawe, and Wassa Amenfi to produce land tenure documents for farmers and landowners in residential and commercial settings. The process for delivering land tenure documents for farmers starts with an assessment of farmers' readiness for tenure documentation and then engagement with chiefs and other community leaders, farmer organizations, governmental structures, development partners, and lastly interested farmers.

Experiences from these traditional areas have shown that land tenure documentation revolves around consultation and education with numerous entities due to the complex nature of land tenure in Ghana; many entities have different interests and rights in any portion of land. Meridia's approach has been to involve these entities, including traditional and governmental structures, in order to ensure that the expectations of various parties are met and to be sure that the final land documentation delivery has passed through all local administrative hurdles. The participation of a wide range of actors and structures and the fees required by local authorities, such as stool chief fees, add considerably to the cost of producing the land certification document.



Meridia agent interviewing a farmer
MERIDIA

Payment for the FarmSeal service by farmers is always a great challenge, but this has been allayed with the payment of a commitment fee during initial interviews with farmers or while carrying out initial mapping. Once the certification document is ready, the rest of the fee is collected. Under first TGCC and now ILRG, Meridia has collaborated with development partner USAID and private sector companies Hershey and ECOM, to deliver land tenure documents to Ghanaian farmers. These partners have helped subsidize the cost of FarmSeal documentation. Farmers have been able to secure land documentation for their farmlands, which is intended to increase confidence that investments in cocoa rehabilitation are worth the cost. Meridia has also offered its land documentation services to donor-funded projects where fully subsidized customary land certificates have been handed out free of charge to farmers, as was the case under TGCC.

Agricultural productivity is crucial to successful economic development. However, Meridia's experiences in Sefwi Wiawso and other areas of Ghana have shown that farmers are generally reluctant to make long-term investments that boost agricultural productivity when there is tenure insecurity. Ghanaian

farmers who had in the past sought security of tenure from established governmental bodies have had to traverse a complex and time-consuming system to demonstrate proof of rights to land and trees on their farms. Tenure rights in farming communities, including in the Asankrangwa Stool, have been largely linked to oral histories held by the major landowning families.

Meridia's work process in Asankrangwa, as in other communities in Ghana, involves assisting farmers to recognize the importance of the rights they have in these land parcels and then securing their land tenure interests for them. Meridia staff help farmers to record and confirm these rights in a well-defined, unambiguous manner. This is done through a one-on-one interview with the farmer in an open space within the community where the farmer records his/her biodata, gives the root of history of the land, how and when he/she started farming on the land, the tenure arrangements involved in the land acquisition including *abunu* tenancy arrangements, and the right of women in family-related lands to use or own land.

The second part of the Meridia approach in Ghana involves mapping the parcel of land to ascertain its size and land use. During mapping, boundary neighbors are involved to ensure the right boundary lines are mapped correctly. Most boundaries of individual cocoa farms are marked with distinctive hedges or plants. Meridia's approach of attending to a number of farmers within one geographical area like Asankrangwa has helped to drastically reduce the cost of a survey through economies of scale.



Meridia agent mapping a farm boundary
MERIDIA

The FarmSeal document contains a certified plan (signed by a licensed surveyor), an indenture agreement that includes the customary terms (signed by chief, other traditional authorities, the farmer(s) and witnesses), a data profile (parcel, applicant, and witness data), and land tenure literacy declaration. Altogether, this package is what Meridia calls its FarmSeal document (see the templates in Annexes 3 and 4). At the time of signing the FarmSeal document, Meridia encourages men to let women sign on as co-owners; if this is not agreed upon, Meridia encourages women at least act as a witness to the signature. The farmer appends his/her signature to this information, as do witnesses.

In Ghana, customary land ownership, land management, and land administration differ from one traditional area to another. Traditional area background research has become one crucial aspect of Meridia's work in delivering farm-level tenure documentation in Ghana. Land ownership in the western cocoa-growing region of Ghana is divided into three categories: customary ownership, state ownership, and co-management between state and customary owners. Customary tenure categories include allodial, usufruct (customary freehold), leasehold, and customary tenancies (*asideɛ*, *abunu*, and *abusa*), and caretaker.² The Wassa ethnic group, a sub-set of the Akan, generally hold customary freehold rights while tenant farmers generally negotiate borrowing arrangements like *asideɛ* or *abunu* (Roth et al., 2017).

From Meridia's experience, *abunu* rights vary from one traditional area to the other. Though the same tenancy term is used, farmers in the eastern parts of Ghana may stay on the same piece of land

² For descriptions of these tenure categories, see Section 3.2 in Roth, M., Antwi, Y., & O'Sullivan, R. (2017). *Land and natural resource governance and tenure for enabling sustainable cocoa cultivation in Ghana*. Washington, DC: USAID Tenure and Global Climate Change Program. Available at https://www.land-links.org/wp-content/uploads/2017/02/TGCC-Cocoa-tenure-deforestation-assessment_Feb-2019.pdf

“forever,” sharing only proceeds with the landowner, while in contrast the landowning farmers in Asankrangwa divide up the land after the cocoa seedlings mature. The landowner takes care of the cocoa on one side of the farm while the tenant farmer takes care of the cocoa farm at the other side.

Meridia’s research process grants full knowledge of land transactions within an area earmarked for work, which ranges from historical tenure practices to land transactions with indigenes and with migrants, including both men and women. In Asankrangwa, some migrants have stayed on the land for very long periods of time and have been treated as indigenes, a term used in Ghana for original inhabitants. These long-term residents hold firm tenure rights as *asidɛɛ*. Research is carried out by the Meridia team on the reasons behind ancient boundary disputes, techniques used to clarify and demarcate traditional and individual boundaries, general cost and availability of land for farming amid other competing usages like mining and estate development, and how a farmer’s interest in the land can be transferred and sometimes lost. Information gathered from the background research is used to assess the relevance of the FarmSeal product for farmers, the readiness of chiefs and customary authorities to participate in activities, and the nature of problematics likely to confront land documentation. Fortunately, Meridia had learned much from the previous work under the USAID TGCC project in the Asankrangwa Stool, but differences in land issues still varied from village to village.

The issue of payment of land fees is central to the rationale behind promoting land documentation and private sector provision of services like FarmSeal certificates. Stool chiefs, village-level *odikro* chiefs, and allodial landowners are all deeply involved in land documentation processes. Allodial authorities are the custodians of the traditional heritage with oversight responsibilities vested in the land on behalf of the stool or skin. In effect, landowners hold the freehold estate and maintain ultimate control of all the land over which they preside. For this reason, Meridia must work hand-in-hand with the allodial authorities because they have absolute control over the land. Chiefs and allodial authorities are deeply interested in land documentation in order to confirm their jurisdictions. To confirm these rights, they append their signature to the land rights document type that describes the particular tenure arrangement that applies to the land parcel. Documentation does not come free. Allodial landowners require a “signing fee” for documents like those produced under FarmSeal. Signing fees are not fixed and are subject to negotiation. Meridia and other partners often hold meetings with the customary authorities to seek reductions in signing fees in order to make the total cost of documentation more affordable for farmers. The length of time taken by some allodial owners to append their signatures on prepared land documents has been a major hurdle. In theory, if a digitized system were used and loaded on to tablets, digital signatures could be affixed, which could considerably reduce the time and cost associated with signing requirements.

Farmers must also pay annual fees to the Office of the Administrator of Stool Lands (OASL), with amounts varying based on the acreage of land occupied. Meridia often collaborates with the OASL within the traditional areas to ensure farmers are charged with the right amounts. Thanks to the maps and other land documentation, farmers in Asankrangwa know the actual sizes of farmlands they occupy; their site plans can be shown to OASL to help ensure more accurate fees.

2.1.2 INTENDED APPROACH FOR THE ILRG BRIDGE PHASE

ILRG subcontracted Meridia to carry out land clarification and documentation activities in two phases. The first phase was the wall-to-wall mapping exercise phase, during which Meridia systematically mapped all cocoa farms in the target communities and completed household surveying to collect the necessary legal data attributes to prepare the FarmSeal customary land certificates. USAID covered the cost of wall-to-wall mapping in the expectation that this would encourage interest in buying the FarmSeal documentation. The dataset generated from this exercise was used to (1) generate the FarmSeal

documents, (2) provide a base map for the ILRG land use planning work, and (3) provide insights into landcover dynamics, shade tree coverage, and other spatial data.

The approach put in place included a sliding fee schedule that allowed farmers vulnerable to demographic or land-related factors to be heavily subsidized with USAID funds so that a level playing field could be created between well-off and struggling farmers. As also shown through the USAID CEL baseline study, the farmers in the four focus communities confront very low cocoa farm productivity, a high prevalence of cocoa tree diseases such as cocoa swollen shoot virus, and illegal gold mining that has destroyed a sizeable portion (at least 110 hectares) of previously productive land. Meridia's prior experience in Ghana suggested that the four bridge phase communities were comparatively worse off than the average cocoa farmer in Ghana. For these reasons, Meridia proposed that all farmers in the bridge phase villages would receive a discount regardless of their farm sizes. Building on experience learned through the TGCC pilot in Nyame Nnae, Meridia intended to offer a discount in the FarmSeal service that would require farmers to pay only 30 to 50 percent of the cost.

Meridia launched a sales campaign in early November 2019 in the middle of the harvest period, when farmers usually have more available cash. Meridia field agents were present in the communities every day to engage with farmers. During this period, a tenant farmer-landowner impasse flared up whereby *abunu* tenant farmers were worried that they might lose rights to land once cocoa trees reached the end of their lifecycle. ILRG engaged with the traditional leaders to clarify the situation and tamp down worries around possible dispossession and renegotiation of tenancy rights. While the Meridia team thought that these discussions and outreach calmed down the situation, many tenant farmers remained troubled and found it difficult to trust the reassuring words of the village *odikro* chiefs around the fundamental issue – fear of revocation of tenancy agreements once cocoa trees had reached old age and were replaced by new trees.

In the end, even after considerable public outreach, there was very low uptake of FarmSeal land tenure documentation from the four communities. By the end of the harvest season in January 2020, only 70 FarmSeal documents (eight percent of mapped farms) had been sold with full payment collected by the Meridia field agents.

2.2 IMPLEMENTATION OF THE COST RECOVERY MODEL

2.2.1 COMMUNITY ENTRY AND OUTREACH CAMPAIGN

Extensive community engagement and outreach are key to achieve the desired result of selling FarmSeal documentation services. The Meridia team assigned to the four focus communities started with participation in the ILRG land use planning diagnostic. The team members learned much about the history, environment, and economic and institutional realities confronting the local communities during the diagnostic. The FarmSeal documentation process was explained in several community gatherings.

The communication and outreach campaign started up in earnest after the land use planning diagnostic. The Meridia team met with the Asankrangwa Stool leadership, the *odikro* village chiefs in each of the four communities, village elders, and then the individual farmers. Following traditional procedures, the team followed the process below of meeting with various interest groups.



During meetings with the *odikros*, elders, and other opinion leaders, the Meridia team presented the land documentation process, timelines, expectations about targets, and fee schedules. Throughout the process, intermittent meetings were held with the stool secretary to address issues as they arose. During many subsequent community meetings, latent tensions and disputes began to surface. The Meridia team found that landowners seemed not to allow *abunu* tenant farmers to rehabilitate their unproductive farms even though the farm benefit stream was shared among them. The field team also learned that other land documentation experiments had failed, like those offered by licensed buying companies (LBCs), which delivered land documentation that was not signed by licensed surveyors or chiefs. Furthermore, it became abundantly clear that many landowners did not reside in the communities and some could not even be reached by cell phone. Therefore, obtaining informed consent to carry out wall-to-wall mapping and interviews would be time-consuming due to the obligation to track down the landowners.

The Meridia team put in place a communication and outreach campaign that included the following approaches and tools:

- **Continuous radio announcement** to help generate and sustain farmer interest, repeat messages were announced on the local radio stations in the communities.
- **Hiring of locals and team residence in the communities** to instill confidence and trust in the project from the communities. It also helped in clustering the farmers in an orderly manner for the mapping of parcels. The team taking up short-term residence in the communities also contributed to the speed of activities.
- **Visits to churches and mosques** in the various communities were made. With these visits, Meridia was able to meet with farmers who live in their hamlets. This group of farmers usually comes to town on worship and market days when they do not go to the farm. These visits also helped community members who were hesitant to participate see their leaders buying into the service. For example, there was a breakthrough at Yirase where some Muslim community members waited for their imam to buy before they followed.
- **Flexible payment terms** were put in place. In Meridia's usual operations, the buyer makes a down payment as a sign of commitment and the remaining cost is spread over time. Under the ILRG approach, no down payment was required as farmers' income had been negatively affected by very low yield. Therefore, farmers paid what amounts they could raise for the period that mapping was still in progress. Even when fieldwork had ended farmers could



Meridia agent administering interview on a tablet
MERIDIA

still make payments through Meridia's community representatives.

2.2.2 MAPPING METHODOLOGY AND TECHNICAL APPROACH

Meridia employed a fit-for-purpose methodology for the demarcation of community boundaries and farm-level boundary mapping. Each mapping agent had a field device set that consisted of an 8" Android tablet and a wirelessly connected GPS device. The field team reached an average accuracy of 1-2 meters per observed point under medium to the dense canopy. This level of accuracy is well within range for customary land rights documentation. In comparison, most organizations that map cocoa farms use the tablet's in-built GPS (5-10m accuracy) or other types of handheld GPS devices (3-5m accuracy).

Meridia applied the following procedures to comply with government regulations and achieve the highest possible quality dataset:³

- **Integrated mobile workflow:** The data collection process uses tablets and a custom-designed application to allow a workflow with validation rules to minimize data collection errors and avoid data loss.
- **Field validation:** Each cocoa farm documented required witnesses to verify ownership and boundaries mapped. Neutral opinion leaders in the village were asked to serve as a witness in cases where boundary neighbors were not available at the time of mapping. Interviews and mapping took place only if the landholder or tenant farmer had proof of identity.
- **Legal review of land document templates:** All legal templates and any changes to them were reviewed by legal counsel in Ghana.
- **Technical review of technical documents:** All technical documents were reviewed by a senior licensed surveyor in Ghana.

The Meridia field team followed the approach taken in the previous TGCC pilot, geared towards documenting the actual customary arrangements that are held, regardless of whether those are registrable at the Lands Commission, the institutional entity responsible for documentation and registration of land rights in Ghana.

2.2.3 COMMUNITY BOUNDARY DEMARCATION, TOPOLOGY, AND DRONE MAPPING

Management and control of customary lands in Ghana face peculiar challenges. The central challenge is to document customary land boundaries and relevant topographical data. Natural boundary markers used in the past, like trees, rivers, mountains, and footpaths, shift or disappear from such things as illegal mining using earth-moving equipment, which



Sureso Nkwanta receiving their community map
MERIDIA

³ Meridia's field methodology was previously described in Roth, M., Antwi, Y., & O'Sullivan, R. (2017). *Land and natural resource governance and tenure for enabling sustainable cocoa cultivation in Ghana*. Washington, DC: USAID Tenure and Global Climate Change Program. Available at https://www.land-links.org/wp-content/uploads/2017/02/TGCC-Cocoa-tenure-deforestation-assessment_Feb-2019.pdf

sometimes diverts river courses and other historical markers. In some communities, only the elder landowners know community boundaries, which are not written down. This creates opportunities for distortion depending on the interests of various parties concerned.

If the individuals who are custodians of the boundary history are not available or make any mistakes, this opens up possibilities of disputes or litigation. None of the four selected communities of Domeabra, Nyame Nnae, Sureso Nkwanta, or Yirase possessed any form of formal evidence concerning community boundaries. While the community members knew their boundaries through natural boundaries, only Nyame Nnae had a hand-drawn sketch map.

Boundary demarcations, whether for individuals, the community, the division, or the paramount chief, are established for different purposes. The purpose determines the mapping tools to employ and the protocols to be followed. Meridia experimented with the demarcation of the four community boundaries for land use planning and especially with priority placed on mapping forested areas. Only Yirase had a forest reserve abutting its territory, though all others had fallow lands (*mfofo*) and uncultivated swamplands, all-important stocks of carbon.

The community map preparations used best practices for survey procedures and relied upon neighbor attestation of farm boundaries. After informing the divisional chief, the *odikros*, and elders in the communities, elders were appointed to assist the mappers in demarcating the community boundaries. The boundary markers were pointed out by the elders and the people of the four communities. However, neighboring representatives of surrounding communities were not officially invited to witness the exercise as it was not cost effective and it did not appear that there were contested territorial boundaries. Boundary walking and recording were slow and arduous because boundaries are not cleared and it was hard to reach some of the indicated natural boundaries. Boundary demarcation for individual farms is clearly defined and accepted.

Documentation and Registration of Customary Land Rights: Perspective from TGCC

“When it comes to documentation and registration of customary land rights, the Land Commission does not provide workable frameworks to register land rights exactly as they operate in practice. This is the case in spite of the fact that The Conveyancing Decree of 1973 proposes a framework for local-level cost-effective recording of customary land ownership and oral transactions originating from them. Currently, the Lands Commission insists that owners of customary rights convert their rights to statutory before they can be registered. Holders of usufructs or *abunu* rights, for example, may only have their interests registered if they are prepared for the documentation to convert their rights to statutory leases of 99 or 50 years, attach a survey plan prepared to a standard dictated by the Survey Division of the Lands Commission and signed by the stool, the allodial holder. Besides being forced to convert their land rights, the cost of complying with standards of registration may be far beyond the budget of most farmers. The truth is, the current arrangements in land administration in Ghana do not offer any viable and practical avenues for cocoa farmers to register their customary land rights. Though under the LAP [World Bank Land Administration Project], customary land secretariats were to be established to fill this gap, the absence of a clear funding mechanism as well as the ad hoc and unsystematic approach adopted by the Ministry to establishing them have undermined their chances of success. One of the objectives of the Improving Tenure Security to Support Sustainable Cocoa project for which this training curricula is developed is to investigate avenues for documentation and lodging for customary land rights of cocoa farmers in order to contribute to security of land tenure and improvement in farm productivity.” (Antwi et al., 2017, p. 8)

Aerial mapping: Parallel to the process of establishing community boundaries, Meridia carried out aerial mapping of the four communities as well using unmanned aerial vehicle (UAVs). This exercise was carried out separately from USAID funding. All four communities received their territorial and settlement maps in print, as a tool for sensitization, decision-making, land tenure documentation, and land use planning to enhance development and improve in the community and the cocoa farmers' life.

For the first time, the communities saw their settled spaces from the vantage point of the UAV, a request of the communities who wished to see and record their community infrastructures.

The UAV captured high-resolution images as shown in the images presented in Annex 2. Meridia used open-source software (Ardupilot) that helps to monitor the movement of the UAV and ensure that all required data is captured. The UAV consisted of an onboard dual-frequency GNSS receiver which uses the post-processing kinematic method to obtain centimeter accuracy of image positions. Meridia surveyed 400 hectares of residential and farmland altogether, taking over 2,500 aerial images, which were processed for image correction and mosaicking, that resulted in the four orthophoto settlement maps and which were handed out to each community. Annex 1 presents some of these settlement images and maps produced by the Meridia team.

The chart below notes the number of facilities like schools, medical facilities, religious sites, boreholes and water sources, cocoa depots, and purchasing stations in each of the four focus communities.

Table 1: Infrastructure in Communities Mapped

Locality	Church	Clinic	Cocoa Shed	Mosque	Public School	Village Center	Information Center
Domeabra	1	0	0	1	0	0	0
Nyame Nnae	1	0	1	1	0	0	0
Sureso Nkwanta	5	1	0	2	1	1	1
Yirase	7	1	1	4	1	1	1
Total	14	2	2	8	2	2	2

This information could be used for land use planning purposes to stimulate discussion of where communities might want to build additional infrastructure.



Domeabra receiving their community map of location of settlement.
MERIDIA

Land cover mapping: Meridia also mapped secondary forest (*mfofo*), marshes/swampy areas, and abandoned illegal mining (*galamsey*) sites. The mapping and ground truth verifications revealed that illegal artisanal mining is one of the biggest factors threatening cocoa farming areas. The mapping revealed that there were no active illegal mining sites though two abandoned sites were identified in Domeabra and the other two in Nyame Nnae. *Galamsey* miners prefer marshy areas because this is where alluvial gold deposits are often found.

Sites were identified by Meridia through discussions with elders, but this may have introduced biases through underreporting. Since *galamsey* gold mining is considered illegal, active sites may not have been reported. While a study carried out by the USAID Artisanal Mining and Property Rights project noted that gold mining was extensive in the Asankrangwa Stool, the sites visited did not appear to be in the four focus communities (DeJong, 2019).

Table 2. Abandoned Galamsey Gold Mining Sites, Marshy/Swampy Areas, and Mfofo

Type	Domeabra		Nyame Nnae		Sureso Nkwanta		Yirase	
	Acres	%	Acres	%	Acres	%	Acres	%
<i>Galamsey</i>	151	4%	115	3%	0	0%	6	0%
Marshy/swampy areas	291	7%	23	1%	33	1%	260	4%
Mfofo	138	4%	168	4%	485	8%	307	5%

2.2.4 WALL-TO-WALL HOUSEHOLD MAPPING AND DATA COLLECTION

The wall-to-wall household mapping and data collection was carried out by four teams, one per community. To be effective and efficient, each team resided in their assigned community throughout the duration of the fieldwork. Since farmers headed out to the fields as early as 5:30 AM, the Meridia teams met them at a pre-arranged place and then walked out to the fields to do the boundary mapping. The teams also announced these arrangements via local radio consisting of a system of loudspeakers attached to poles placed strategically throughout the community.

The interviews are time-consuming and so were not combined with mapping, as farmers needed time to work while they were in the fields. Interviews were normally held upon return from the fields or on days when not farmers were not working in the fields. In some cases, thanks to the assistance of the community representative, the Meridia team walked out to remote hamlets to carry out the interviews.

Initially, the Meridia team anticipated that it would take four weeks to carry out the fieldwork but soon realized that a number of landowners could not be reached since they were not in the community. *Abunu* tenant farmers needed to get agreement. A further four weeks of fieldwork was added on to the land documentation process. At the outset, Meridia estimated that there were 200 farmer households per community with an average of 1.7 farms per household, and that a total of 1,360 farms would need to be mapped. In the end, it turned out that there were only 842 farms in the four focus communities, but farm sizes were larger than anticipated – on average, 4.32 acres per farm.

The wall-to-wall mapping and interviews with farmers showed that Domeabra, the Sureso Nkwanta cluster of settlements, and Nyame Nnae are predominantly migrant farmers. Yirase is comprised primarily of the long-term resident *Wassa* ethnic group. Migrant farmers moved into the area from various other parts of Ghana.⁴ The wall-to-wall mapping and data from interviews with the holders of the 842 parcels illustrate the division of land ownership and tenancy arrangements.

Table 3. Summary of Tenure Types in Farms Mapped

Tenure type	Domeabra		Nyame Nnae		Sureso Nkwanta ⁵		Yirase		Total	
	Farms	%	Farms	%	Farms	%	Farms	%	Farms	%
Customary freehold	78	34%	17	13%	61	35%	175	56%	331	39%
<i>Asideɛ</i>	38	17%	56	44%	42	24%	24	8%	160	19%
<i>Abunu</i>	92	40%	48	38%	58	33%	98	31%	296	35%
No data	20	9%	7	5%	14	8%	14	5%	55	7%

⁴ For a fuller history, see Jieka, S., & Freudenberger, M. (2019). *Supporting deforestation-free cocoa in Ghana activity: Land use planning diagnostic report*. Washington, DC: USAID Integrated Land and Resource Governance Task Order under the Strengthening Tenure and Resource Rights II (STARR II) IDIQ. Available at https://www.land-links.org/wp-content/uploads/2020/05/ILRG-Ghana-LUP-Diagnostic-Report_revised_clean.pdf

⁵ Including Kramokrom and Mpokuase

Total	228	100%	128	100%	175	100%	311	100%	842	100%
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The wall-to-wall mapping teams encountered a number of challenges:

- **Refusals of landowners to rehabilitate unproductive lands:** Landowners are not allowing *abunu* farmers to rehabilitate their unproductive farms even though the farm is shared. According to the tenant farmers, any such attempt by the *abunu* farmer is met with fierce resistance and sometimes results in serious quarrels. The perception seems to have emerged among landowners that USAID through the ILRG project was siding with the tenant farmers and was looking to redistribute land or otherwise serve the interests of the tenants. The land use planning diagnostic identified the root causes of the tensions, the Meridia team brought this to the attention of the ILRG Ghana team, and measures were taken to address the issues as noted below.
- **Absentee landowning farmers:** The prevalence of so many absentee landowners came as a surprise to the Meridia team. Individuals may own land in the four communities, but live outside the area, even outside the Western Region. Because they may not be able to commute to their parcels on a daily, weekly, or even monthly basis, they hire out labor and set up tenancy arrangements. Per tenancy agreements, the landowner has to give consent for any mapping or other land documentation. Caretaker tenants, like *abusa* farmers, have to request the landowners to visit the farm during the mapping and documentation process; in some cases, the landowners authorized the *abusa* to buy the FarmSeal document on their behalf. Some absentee landowners were also hard to reach by phone. At times, the absentee landowner could be reached, but he/she would tell the Meridia team there was no need for a FarmSeal document because he/she was a native of the area and the rightful landowner. In other situations, the landowners tasked the *abunu/abusa* farmer to buy the document but failed to provide the payment. The tenant farmer would thus respond, “how can I pay for something that isn’t mine?” In the end, it took the Meridia team about four weeks of concerted effort to reach out to all the landowners and obtain their agreement to participate in the wall-to-wall mapping. If landowners were not present for mapping or interviews, the Meridia team used power of attorney forms signed by the landowner indicating that the bearer could stand in on their behalf.
- **Lack of trust:** Some community members were skeptical that Meridia would be able to deliver the LandSeal documents because other initiatives like those by LBCs had previously delivered documentation that was not signed by licensed surveyors nor chiefs. As a result, some farmers did not even attend a community meeting, especially tenant farmers whose hamlets are far from the community. To clear doubts and instill confidence, Meridia recruited three university graduates from the community as field agents and trained them to become mappers and interviewers. Meridia also recruited volunteers who resided in the four communities to serve as community representatives and help in the organization of activities.
- **Holders of Asankrangwa Stool documents:** Some landowners had previously purchased land documents from the Asankrangwa Stool and thus did not want to participate in mapping and interviews; the shade tree mapping and registration exercise encouraged them otherwise since it meant free tree registration documents.
- **Mapping of abandoned *galamsey*, *mfofo*, and marshy area parcels:** The mapping of abandoned *galamsey* gold mining sites, *mfofo* fallow, and marshy areas was challenging because undergrowth made boundary walking and mapping extremely arduous and time-consuming. The *mfofo* parcels were few and luckily many shared boundaries with already cultivated farms. However, that was generally not the case with abandoned *galamsey* sites and nearly inaccessible

marshy areas. Mapping abandoned *galamsey* sites was hazardous because deep holes and pits were often hidden by brush.

2.2.5 LANDOWNER–TENANT IMPASSE

The Meridia team encountered a major landowner–tenant conflict that had to be addressed before land documentation work could advance. This impasse turned out to be one of the major causes of lack of interest in purchasing the FarmSeal certificate.

During the land use planning diagnostic, the deep-seated historical conflicts between landowners and tenant farmers were identified as an underlying source of conflict between long-term residents and migrants (Jiekak & Freudenberger, 2019). This was not a surprise as the same issue had been encountered during the TGCC pilot (Roth et al., 2017). The conflict came up in community meetings organized by the Meridia field team. Meridia raised this issue with the ILRG Ghana management team. The conflict was sometimes so serious that community members left the meeting venue because of unwelcome comments lobbed at each other; as a result, meaningful fieldwork was halted until the impasse was resolved. The details of this conflict are spelled out below to record the central issues and the measures taken towards resolution.

Abunu tenant viewpoints: The conflict reaches back to the death of the previous stool chief in 2000. Even to this day, a new divisional chief has not been chosen, though an interim is in place. The *abunu* farmers claim that they had the understanding that tenant farmers could cut old and diseased cocoa trees at will and rehabilitate their farms at any time, without necessarily informing their landowner. They claim these were the fundamental terms at the time of the *abunu* agreement negotiated decades ago – a belief that migrant tenant farmers could over time acquire permanent landowning rights. The tenant farmers strongly believe that the acting stool chief, the *odikros*, and the landowners reneged on this social contract after the death of the chief. In effect, the *abunu* farmers expected that ILRG would confirm and restore the understanding that tenant farmers are not required to seek prior consent for farm rehabilitation. Lacking written documentation of who said what decades ago, it is possible that the landowners and traditional authorities promised land to migrant tenants decades ago as a way to lure them to the Asankangrawa Stool and get them to invest labor in the planting and cultivation of cocoa trees with the attractive promise of access to land one day.

Today, the central question resolves who controls the land at the moment when old and diseased trees are cut down. According to the tenant farmers, upon maturity of the cocoa trees the *abunu* tenure arrangements stipulate that both the cocoa farm and the land is divided equally and shared by the tenant farmer and the landowner. In the past, the landowner would hand out secondary forest fallows (*mfofo*) to a migrant tenant farmer for the cultivation of cocoa for a specified number of years; per the arrangement, all customs and norms (including drink money and witnesses provided by both parties) would be adhered to by the tenant farmer. This practice contributed significantly to the conversion of primary forest, or even fallow lands, to smallholder cocoa plantations. Upon completion of tree planting or when the cocoa tree starts fruiting, the landowner and the tenant farmer would subsequently divide the farm equally, including the land. The tenant farmer would take half of the trees together with the land and start paying the annual rent to the OASL, along with other charges like *afahyetuo* (festival fees) that may come up from the chief.

The tenant farmers claim the arrangement of sharing only the trees and not the land came into existence about twenty years ago. Recent interpretations of the agreement by the acting stool chief, the *odikros*, and the landowners have not gone down well with the tenant farmers. The displeasure on the part of the tenant farmers may have contributed to low cocoa production in the four focus communities, as tenant farmers do not want to cut down old or diseased cocoa trees and risk losing the

land at the time of renegotiation of terms. For this reason, tenant farmers do not see why they should document their rights in a land parcel which does not belong to them.

Landowner viewpoints: The landowners' version is not that far from what has been stated by the tenant farmers, except around the view regarding the sharing of the cocoa trees. According to the landowners, the sharing is limited to the farm cocoa trees alone and not the land itself. From the landowners' perspective, this means that land reverts to the landowner immediately after old or diseased cocoa trees are cut down. For this reason, farmers are required to consult the landowner if they want to rehabilitate the farm or re-cultivate the land.

Initial resolution of the landowner-tenant impasse: This challenge led to a team being tasked to engage communities on the terms of agreement as captured in the proposed *abunu* document template⁶ prepared under the TGCC pilot in Nyame Nnae. At the time, it was believed that this new agreement would encourage landowners to permit *abunu* farmers to map their farms and rehabilitate their old farms. This mediation team was supported by a representative of the Asankrangwa Stool. The principal objective was to discuss and reach understandings and consensus on the *abunu* agreement. In particular, the engagement by the ILRG team was intended to reach consensus on the rights of the tenant farmer to rehabilitate their farms in a way that would calm the landowners, paving the way for landowners to allow and support the mapping and documentation of *abunu* farms. The ILRG team facilitated three public meetings in each of the four communities. One meeting was held with the *odikros* and elders, and then two parallel meetings with *abunu* farmers on one side and landowners on the other side. The major conclusions and recommendations from the meetings were:

- **Recommendations to the stool chieftaincy:** The Asankrangwa palace should provide more detailed explanations around the tenancy indenture clause that states that rehabilitation of a diseased or overaged cocoa farm will not be *unreasonably withheld*, which is not sufficiently defined according to the tenant farmers. The Asankrangwa palace should engage and notify all *odikros* in writing to support the land documentation work. The palace should intervene in conflict situations when landowners swear they will never make peace with their tenant farmers. Landowners and the stool should complete all *asidee* recognition arrangements before *abunu* tenancy negotiations are ratified.
- **Community agreements:** Every clause in the tenancy clause should represent community consensus and not that of a particular interest group. If the Asankrangwa palace endorses an agreement, then it will be accepted and complied with by the entire community. Local community members who know the community boundary should be recruited to help delineate its limits.
- **Tenant agreements:** Tenant cocoa farmers should be prepared to offer some token gesture (in cash or kind) recognizing the rights of the landowner during the period of negotiation around farm rehabilitation. Tenant and landowners should maintain cordial relations and decisions around cutting or not cutting old cocoa trees; tenants consulting with the landowners is good and proper behavior.

Impasse resurgence: Even though the impasse seemed to have been addressed and put to rest, it came back a few months later. Through field intelligence gleaned by the ILRG team, it became clear that one of the *odikros* had stated that no *abunu* farmer would be allowed to rehabilitate his/her farm, regardless of the documentation brought to bear, and that once cocoa trees die or come of age, the tenant farmer would have to vacate the land. Rumors surfaced that the announcement came from the Asankrangwa

⁶ This template was developed under TGCC in 2017 through extensive consultation with farmers in Nyame Nnae with sign off from the stool. The template can be seen in Roth, M., Antwi, Y., O'Sullivan, R., & Sommerville, M. (2018). *Improving tenure security to support sustainable cocoa – Final report & lessons learned*. Washington, DC: USAID Tenure and Global Climate Change Program.

Stool chief palace. This came after 12 weeks of mapping and when the Meridia team was collecting installment payments from farmers who had bought the FarmSeal documents. Suddenly, the *abunu* farmers stopped making down payments for the FarmSeal documents.

The mediation team then made another trip to Asankrangwa in November 2019 to again confront this issue. The team first met with the Asankrangwa divisional elders alone to brief them about the issue. The elders expressed shock about what had been reported by the communities, and said the rumors were miscommunication around what the *odikros* said at a quarterly meeting with the stool. The *odikros* had noted that some *abunu* farmers were engaging in some planting and land-clearing activities without the knowledge of their landowners. The elders pointed out that some *abunu* farmers were giving out permission to extract gold to *galamsey* miners, some were engaging with the Forestry Commission to plant trees, and others were rehabilitating cocoa farms without agreement from the landowners. The elders were furious and asked the *odikros* to communicate to the community that any *abunu* farmer caught in these actions would be dealt with severely. The *odikros* and the divisional elders arranged to set up a meeting to confront the crisis.

The divisional elders met with the *odikros* in the presence of the stool secretary, with the ILRG team in attendance. The *odikros* vehemently denied ever making an announcement that *abunu* farmers would have to vacate the land after the cocoa trees dies. ILRG pointed out to the *odikros* that exclusionary measures go contrary to what is stated in the indenture template agreement between the landowners and the *abunu* farmers. The elders and the stool secretary each advised the *odikros* to be very circumspect in explaining issues to their subjects. To clear the misinformation circulating in the communities, it was resolved that all the *odikros* should go back to their communities and make announcements to clarify the roles and responsibilities of *abunu* farmers with regard to landowners.

Unfortunately, the damage was already done. Notwithstanding the efforts by the stool, the *odikros*, and the elders to calm down the tenants and the landowners, no landowners came forth from that time on to buy the FarmSeal documents. Those 70 farmers who had already made commitments to pay for the FarmSeal documents continued to pay for the service.

Recommendations for the future: The Meridia field mediation team worked hard in collaboration with the ILRG Ghana team to confront the complexities of the impasse reported here. The experience highlighted how customary tenure arrangements are fluid and not necessarily set in stone despite agreements reached in the Asankrangwa Stool during the previous TGCC activity. Meridia reiterates what is already good practice – at every opportunity, field teams must review carefully the exact clauses detailing the rights and obligations of all parties to *abunu* agreements, and when written down, remind participants that these written statements are merely written records of pre-existing oral agreements. Despite being written down, these agreements can be contested, and even one influential person can undermine previous community consensus. As was the practice during the Meridia land documentation work in the Asankrangwa Stool, community-based dispute resolution committees should always be set up to handle cases when landowners might not agree to allow their *abunu* tenants to map their farms or to handle inter and intra-family boundary disagreements that might surface once parcels within family holdings are mapped.

Following the many interventions around the landowner–tenant impasse, the *abunu* farmers nevertheless concluded that the FarmSeal documentation does not remove the requirement to negotiate with the landowner before farm rehabilitation. The FarmSeal document therefore serves little purpose, especially if it has to be paid for. Both tenant farmers and landowners believed that the FarmSeal documents should be free, noting that the TGCC pilot gave out free FarmSeal documentation to farmers in Nyame Nnae in 2017, that farmers were too poor to pay for documentation, and that in any case the Ghana Cocoa Board was paying compensation to landowners to facilitate farm rehabilitation. They felt that at a

minimum, USAID should provide free documentation as part of providing free farm rehabilitation services.

2.2.6 FARMSEAL END RESULTS

Despite the numerous efforts put in by the team to resolve underlying tenure conflicts as described here, the purchase of FarmSeal documentation was exceptionally low even though the wall-to-wall mapping and the construction of farm owner databases was successful. Despite the many challenges encountered, the Meridia team met with 766 landowners and tenants who agreed to map parcels and provide background information. In the end, 842 farm parcels were mapped (some landowners had more than one parcel) and 70 FarmSeal documents sold; at the time of this report, the documents have not yet been delivered due to the coronavirus disease 2019 (COVID-19) pandemic. Interestingly, nearly 26 percent of the total farms mapped were held by women owners or tenant farmers, many of whom were widows. Annex 3 is a template for the FarmSeal document.

Consultations with USAID led to a decision whereby Meridia would reimburse all farmers that had pre-paid for the FarmSeal documentation service and provide nearly free of charge documentation to all other farmers. Meridia will reach out to the 70 fully paid farmers by phone to inform them about the FarmSeal document cost reduction and then refund the overpayment through mobile money transfer. For farmers who do not have a mobile money account, refunds will be arranged through the ILRG field liaison who lives in Asankrangwa. Announcements will be made in all four focus communities about the reduced cost for all farmers – the new cost will be 20 Ghanaian cedis (about US\$3.50). The field liaison will monitor the community announcements. As soon as COVID-19 area restrictions are lifted, Meridia will immediately resume finalizing signatures and deliver of the FarmSeal land title documents along with the 749 tree registration certificates which recorded ownership for 7,383 shade trees (average of 10 trees per farm).

Average cost per parcel for parcel mapping: Even after all the field experience in mapping the farm parcels, it is still quite difficult to discern the average price per parcel to carry out the outreach campaign, complete the wall-to-wall mapping, and cover administrative costs. Meridia estimates that the base price per parcel is 470 Ghana cedis (about US\$82).

Table 4: Unit Costing for Wall-to-Wall Mapping and Documentation at a Volume of 842 Documents

Item	GHS	USD	% of Total Cost
Field Labor	92	15.99	19.6%
Field Miscellaneous	56	9.73	11.9%
Transport and device usage	17	2.95	3.6%
Ghana overheads	19	3.30	4.0%
Total wall-to-wall	184	32	39%
COGS: Approval and Signing	150	26.06	31.9%
Traditional area engagement	91	15.81	19.4%
Provisions for risk	45	7.82	9.6%
Total documentation	286	50	61%
Total unit cost for typical 5 Acre farm	470	82	
<i>Additional unit costs per acre</i>	<i>17</i>	<i>2.95</i>	

3.0 ANALYSIS OF THE COST RECOVERY MODEL

3.1 PRICE MODELING

The Meridia team developed a flexible sliding fee payment system that included consideration of several factors ranging from demographic characteristics to the types of tenure arrangements in the four focus communities. The pricing model sought to make FarmSeal documentation available to the most vulnerable.

The Meridia team was very concerned about defining vulnerability because of sensitivities within the community. Variables under consideration included:

- **Demographic:** About 13 percent of households in the four communities are female-headed; these generally represent a minority and these households are widely reported to be a vulnerable group in Ghana. Another vulnerable group consists of widows and widowers with school-going children. Lastly, about 28 percent of households in these communities are headed by an adult aged 18 – 35; these “youth farmers” often have difficulty accessing productive land and are therefore more vulnerable than the average population.
- **Land-related:** Approximately 15 percent of households in the sample are indigenous land owners, which means the other 85 percent are migrants. Even though this group of migrant farmers is in the majority, they are much more vulnerable than the indigenous land owners because they lack a personal or trusted relationship with chiefs or landowning families that have power and influence over land, disputes, and other local governance issues. Even though ethnicity is strongly linked to land tenure types, there are exceptions. Therefore, the particular land tenure type that applies to the farm parcel(s) that the household is cultivating is also a factor in determining the level of vulnerability of the farmer.
- **Situational:** There can be various reasons why entire (sub-)communities are more vulnerable than others. Factors affecting cocoa productivity such as quality of soil, weather patterns, and prevalence of crop diseases play a role. In addition, it is important to consider any other activities that are going on in the area that might pose a threat to sustained cocoa production, such as (illegal) mining and commercial concessions that compete for land such as production of timber, rubber or oil palm. Certain communities are thriving while others are falling prey to dwindling yields due to circumstances or malpractice in governance of land and resources.

Previous research in the communities suggested that vulnerability often coincided with parcel size; migrants, women-headed households, youth farmers, and farmers with secondary interest tenure types were commonly the ones cultivating the smallest farms. After much internal debate, the Meridia team decided to use farm size as a proxy indicator for vulnerability – the smaller the farm size, the greater the vulnerability of the landowners and tenant farmers. For this reason, as table 6 below indicates, the sliding payment scales ranged from approximately \$26/parcel to \$103/parcel depending on farm size. This reflects a principle that wealthier farmers should pay the most, while the most vulnerable should pay the smallest share; based on this, ILRG would subsidize slightly over 40 percent of the FarmSeal list price to ensure that the most vulnerable would be able to access land documentation.

The Meridia team crafted the FarmSeal pricing model to use farm size as the key variable for subsidization as a way to ensure that farmers that are vulnerable due to demographic or land-related factors are most strongly subsidized. Farm size-based subsidization does not account for situational factors; on that front, Meridia’s finding was that the four communities were comparatively worse off

than the average cocoa farmer in Ghana. This observation was based on the experience of having mapped over 50,000 cocoa farms and having collected full (unsubsidized) payment from over 2,800 cocoa farmers in over 500 communities across the Western Region between 2016 and 2019. The Asankrangwa communities are coping with very low cocoa farm productivity and a high prevalence of cocoa tree disease, and illegal gold mining has destroyed a sizeable portion of previously productive land.

Table 5: FarmSeal Price List

Farm size bracket (Acres)	FarmSeal list price (GHS)	Farm size discount (GHS)	Situational discount (GHS)	Fully discounted price (GHS)	Percentage of bridge phase farms
0.001 – 1.000	500	200	150	150	7%
1.001 – 2.000	500	150	150	200	20%
2.001 – 3.000	500	100	150	250	19%
3.001 – 4.000	500	50	150	300	15%
4.001 – 5.000	500	0	150	350	9%
5.001 – 6.000	550	0	150	400	7%
6.001 – 7.000	600	0	150	450	6%
7.001 – 8.000	650	0	150	500	4%
8.001 – 9.000	700	0	150	550	3%
9.001 – 10.000	750	0	150	600	2%
Per additional acre	+ GHS 50	0	150	+ GHS 50	7%

3.2 SERVICE BUNDLING

3.2.1 BUNDLING OF LAND TENURE WITH SHADE TREE REGISTRATION

The challenge to increase cocoa farm productivity and sequester carbon is linked to tree tenure security. Insecurity of tree tenure is considered a key disincentive to the planting and maintenance of trees, whether cocoa or shade trees. As part of the bridge phase, ILRG was asked by USAID to test the feasibility of shade tree registration by bundling the service into the documentation package, as it is a fairly new and unknown service. Meridia tested the administrative process of registering shade trees, but by carrying out this contractual requirement, it neither endorses nor contradicts the new Forest Commission procedures. Annex 4 presents a template for the tree registration form.

From the outset of this experiment, the Meridia team noted that farmers were not familiar with this service offered by the Forestry Commission. For this reason, farmers were largely unwilling to pay for this service even though the price was considered to not be very high (estimated initially to be at least GHS 100 – 150 per farm, or \$17-\$25/farm). This included costs for i) personnel (field and office); ii) transport, accommodation, materials, shipping; iii) Forestry Commission field audit; iv) coordination of Forestry Commission approval; and v) use of hardware and vehicles. Meridia considered this a conservative estimate, with cost estimates from other projects up to \$40 per farm (personal communication with Meridia). The decision to make tree registration freely available for all farmers was made so that ILRG could learn from the administrative process of registering trees with the Forest Commission and gain analytical insight into the actual cost of tree registration.

Farmers received information on the process and benefits of registering the shade trees on their farms. Meridia's field agents performed the shade tree mapping exercise right after the farm perimeter was mapped for the Land Seal exercise; the agents traveled to the farm and engaged with the farmer to first collect all spatial data for the land tenure document and then proceeded to record all data for the shade tree registration. They recorded the geo-coordinate, species, origin (whether planted or naturally occurring), and age of every individual shade tree on all cocoa farms that were mapped in the wall-to-wall mapping exercise. Shade trees are taller than cocoa trees so they can provide shade to (young) cocoa trees. This includes hardwood timber trees species such as Ofram or Emire, but also certain fruit tree species that can be used to provide shade as well as fruit. A total of 3,031 planted and 4,352 naturally occurring trees were recorded for 749 parcels owned by 473 farmers. Thus, an average of 10 trees per far were registered. It took Meridia mappers about one to two minutes per shade tree, adding a total of 10 to 20 minutes to every farm mapping, plus an additional five minutes for some attribute fields that only pertain to the shade tree registrations. On average, Meridia field agents spent 30 minutes to travel to/from a farm and 30 minutes on the mapping of the boundary and collection of land tenure attribute data. The shade tree mapping work increased the duration of the farm mapping by on average 30 percent.



Government of Ghana official signing and stamping tree registration forms
MERIDIA

Data was post-processed, cleaned, and verified and registration forms were generated for the 749 farms. The registration forms were populated with all required data, based on the Forestry Commission form template. These forms were taken to the Forestry Commission district office in Asankrangwa to initiate their audit process. After four months, the forms were approved by the district and regional directors and Meridia received the stamped forms ready for delivery.

In the end, the Meridia team calculated that the cost of registering shade trees was \$25 per farm tree registration document (exchange rate at time of report submission) audited at the farm level and approved Forestry Commission (Personnel in the field and the home office; transport, accommodation, materials, shipping; Forestry Commission field audit; Coordination of Forestry Commission approval; hardware and vehicle costs). This registration cost may be comparatively low in comparison to stand alone registration because bundling land tenure with shade tree registration at the time of registration under ILRG was cost effective since the Meridia field agents went to the farm only once to collect all necessary spatial and attribute data for the land tenure documentation and the shade tree registration. Cost efficiencies occur because a substantial part of the dataset overlaps. Also, outreach activities can be combined with data collection.

Since the land tenure document was intended to be offered at a discounted fee, Meridia expected that a majority of farmers would opt to purchase it. However, Meridia intended to collect mapping and household surveying data systematically for *all* farmers in the community. As the data collection is elaborate, it was thought that offering the shade tree registration for free might incentivize farmers to participate in the wall-to-wall mapping, even if they were not interested in purchasing the land tenure document or were not yet sure if they would do so. Although Meridia has no data on whether this approach rendered farmers more willing to participate, the team did note that all farmers present in the

communities made themselves available for the exercise and were fairly successful in collecting the necessary data.

The tree tenure registration process may not be scalable on a national level. Ghana's cocoa marketing board estimates that the country has 800,000 cocoa farmers. The USAID CEL field work carried out in Asankrangwa estimates that farmers have on average 2.7 farms each (Persha et al., 2019). Since the average cost of tree registration was approximately US \$ 25 per farm parcel, it is estimated by extrapolation from this case that it would cost at least \$58,320,000 to register all the shade trees in Ghana's cocoa farms. Perhaps costs of national tree registration would come down through various economies of scale, but this cannot be predicted. This does not take into account the forestry commission's administrative costs to process 1.7 million to 2.1 million individual records, the costs to maintain the registry over time, or the logistical challenges of mapping every tree on that many individual farm plots. The high aggregate cost of tree tenure registration may not be affordable for Ghana, let alone most other countries in the world.

With land tenure often being mentioned as a prerequisite for farmers to be confident in rehabilitating their farm, Meridia also intended to experiment with the bundling of land tenure documentation with the farm rehabilitation service that ECOM provides under the ILRG Ghana activity. The intended approach discussed with ECOM was to convene the group of farmers that participated in the rehabilitation program as a focus group and perform a tailored communication and outreach session where Meridia would focus on the underlying motivations for tenure security and share the discounted fee and terms for the land tenure service, but also use this focus group as a sounding board for understanding local realities and the perspectives of farmers for or against engaging the FarmSeal service.

Unfortunately, at the point of scheduling this activity, it had become clear that the cost recovery model for land tenure in these communities was not working out as planned and ILRG had decided to shift to a different approach and deliver the land tenure documents for a token amount. This meant that testing responses, pricing models, and discounts through ECOM would not be achieved.

3.3 LIMITED PURCHASE OF FARMSEAL DOCUMENTATION

3.3.1 UNDERSTANDING FARMERS' REASONS TO REFRAIN FROM PURCHASING

There are many possible reasons for landowner and tenant farmer resistance to purchasing Farm Seal documents; based on observations within the communities and discussions with community members, Meridia believes the reasons include the following, but recognizes that the USAID CEL project will be carrying out an end-line evaluation that may confirm or elucidate other reasons.

Uncertainty with respect to farm rehabilitation: The most prominent factor informing a farmer's willingness to pay is the assurance that the documentation is supported by traditional chiefs in the area (with a commitment that all documents will be signed), and that land that is properly documented will not revert to the landlords or chiefs once old cocoa trees are cut down as part of a farm rehabilitation scheme. ILRG carried out active sensitization with all *odikros*, which initially seemed to have won the support of the chiefs. However, halfway into the fieldwork execution, certain chiefs seemed to have raised new concerns regarding this arrangement, leading to a wave of doubt across the communities with respect to the value of the documentation exercise.

Low income from unproductive farms: The major income source for these farmers is the sale of crops from their farms, mainly cocoa and other food crops. A low crop yield corresponds to low income. During mapping, the team realized that a number of the cocoa farms were suffering from pests and diseases, rendering them virtually unproductive. Therefore, many farmers do not have sufficient

income to pay for the document, even though they might have been interested. To address this, the team allowed payment to be spread in installments.

USAID presence in the four communities: The decision to offer FarmSeal documentation for free in Nyame Nnae under the TGCC pilot continues to affect local perception. This provision of a free service is well known to the farmers of the other three bridge phase communities, who expected that the FarmSeal service would once again be offered for free under ILRG. Furthermore, it appears that the villagers question why there had been so many white people around conducting surveys and studies, such as the two-week participatory land use planning diagnostic. While some community members spoke of the positives of this diagnostic, others also considered how much was spent on those missions. Some opinion leaders wondered why USAID was able to finance all these missions but would not absorb all the costs of FarmSeal documentation rather than offering partial subsidization. On several occasions elders seriously pleaded for free land documentation services.

Issues with tenure abunu documentation: There are several different issues related to the *abunu* document template. The template is unclear on who owns the land after the *abunu* farm is shared. Landowners believe that the land remains theirs and that when trees are diseased or old and thus ready for replacement, the tenant should either leave the land or rework it such that the tenant now has only a quarter of the original parcel. *Abunu* farmers wish for the land to become their own as a dividend for working the other half of the land for the landowner, and think that they should be able to then rehabilitate their half without any requirement for consent from the landowner. The current *abunu* template documents the existing agreements, with an appeal to the conscience of the landowner to allow rehabilitation of old cocoa farms; some parties on each side would like the document to be revised to explicitly adhere to their viewpoint. Additionally, landowners are still concerned that the document may grant total ownership over the land to the *abunu* farmer.

Some abunu farmers have not yet divided up (“shared”) cocoa growing lands with the landowners: This brings up the question about who should pay for the FarmSeal documentation service: the *abunu* farmer or the landlord. Some *abunu* farmers think that the principal owner, not the tenant farmer, should pay. But landowners say that since they are the historical owners of the land and sure of their rights, they see no need to buy FarmSeal documentation.

Some farmers did not believe that the FarmSeal documentation would indeed be issued: For Some farmers wanted to see fully signed documents with their own eyes before signing on, and so waited to see what would happen with the first 70 farmers who signed up to obtain the FarmSeal documentation.

Some farmers thought the FarmSeal document would be given for free after some time: In addition, some farmers believed that the document would be given for free after some time, since it was originally free under the TGCC pilot. Therefore, they wanted to wait and see if it would become free later, then they would join. In the end, these farmers were correct, since the FarmSeal document will be given nearly free of charge.

Some abunu farmers think that the FarmSeal document is not important: Some *abunu* farmers think that having the FarmSeal document does not make any difference if they still have to consult the landowner before cutting and replanting cocoa trees since that has been the agreement even before the coming of this document.

The fear of losing most of the land to non-Wassa people as time goes on: For Landowners fear the LandSeal documentation could lead to them losing the land, and thus discourage signing up for it.

No time limit set by Asankrangwa Stool to document rights in the area: Farmers were slow to pay for the FarmSeal document as they believed they could pay later, since the document is not time-bound.

Farmers want assistance from the government: Many farmers believed that the ILRG project was aimed addressing the low productivity of cocoa farms, a similar priority of the government of Ghana since it contributes to GDP. If so, they argued, the government should provide financial assistance to pay for the FarmSeal documentation since the farmers are not the only beneficiaries.

The Wassas feel that they already have security without the FarmSeal document: In many of the traditional areas that Meridia has worked in Ghana, the local landowners tend to show lukewarm attitudes toward the FarmSeal documents because they believe their land rights are secure. The Wassa people, the primary landowners in the ILRG communities, think that there is no way they could lose ownership of the land whether or not they have a document over the land. Hence the FarmSeal document does not make any difference to them one way or the other.

Lack of trust in the ILRG project: Many farmers seemed to distrust the ILRG project and preferred to wait and see what would happen to those who would receive a FarmSeal document. Since the documentation is the first of its kind in Domeabra, Sureso Nkwanta, and Yirase, skepticism is high.

Religious factors: In Sureso Nkwanta, the Muslim community was reluctant to engage in both mapping and documentation. Their reasons were not very clear; however, it was noted that Muslim community members were waiting for their leaders to take the lead before they bought in. Since the leaders did not show interest the others did not follow.

Shortfalls/failures of other land documentation projects: Similar projects that involved cocoa farm mapping have been implemented in the area by other organizations, and yet no documentation was ever issued. As a result, some farmers were not keen to participate and considered it a waste of time to provide information to the Meridia team. Unfortunately, it seems that the Ghana Cocoa Board and LBCs had offered land documentation services, but never came through.

Inconsistency with land documentation templates: Some farmers perceived a seeming overlap between the documentation that was provided under the earlier TGCC pilot in 2017 and the documentation provided by the OASL in Asankrangwa. Some landowners and tenant farmers claim to have tenure documentation over their land, produced by OASL, and believe the content of agreements is similar, and so felt no need to obtain a new document.

3.3.2 LEARNING AND ADAPTATION OF FARMSEAL DOCUMENTATION MODEL

Through the ILRG activity, Meridia has been able to apply a more systematic mapping of land cover in Ghana. This has provided valuable lessons, of which the key ones are:

Mapping land of absentee farmers/landowners: In the Asankrangwa communities, like many other cocoa communities in Ghana, many landholders do not reside in the communities, but often far away in other regions of the country. The Meridia team was able to convince some absentee landholders to travel to the communities for the mapping exercise and collect all their data, but many of them were not reachable or available. This led to trying a new approach, where the Meridia team identified the boundaries of farms based on (a) satellite base imagery and (b) knowledgeable community members/neighbors. The mappers used this information to employ the technique of orthophoto drawing of the remaining farm parcels on their tablets, either in the field with a few neighbors or in the community centers with some community members looking at satellite maps. This method produces less accurate spatial data, estimated to be about 3 – 5 meters in comparison to the 1 – 2 meters that was reached with the terrestrial method. Nevertheless, it offered sufficiently accurate data to enable the team to cover the remaining areas of the communities with data on land parcel boundaries and landcover type and in some cases, the name of the landholder. For the four communities in this project, this totaled 32 percent of the mapped farms.

Mapping neighboring parcels: The project employed a total of eight mappers, each with their own set of mapping devices. To reach systematic (wall-to-wall) coverage of each community, it was paramount for mappers to be able to synchronize each other's work from previous days. Otherwise, it would not be possible to know which other land parcels had already been mapped and where exactly their boundaries were located, resulting in a much higher prevalence of overlaps and slivers between parcels and hence, a lower quality dataset. With Meridia's solution, the up/down synchronization between the devices and the server happened each night while the devices were charging, making it possible for the team to start each morning with the most up-to-date base layer of parcel polygons. This experience reinforced the importance of this feature for medium to large scale systematic mapping efforts.

Physical challenges in mapping certain types of landcover: Before the Meridia team went into the villages, there was not yet a comprehensive understanding of the different land cover types that would be encountered, such as *mfofo*, (abandoned) mining sites, and marshes. Over the course of the first four weeks of the wall-to-wall mapping work, it became clear that such non-farming areas were scattered across the communities and throughout the farming areas. After consultation with USAID and the rest of the ILRG team, Meridia decided to survey the boundaries of these areas as well. Once the team proceeded further with this activity, it was found that the boundaries for these non-farming areas were often difficult, and sometimes impossible, to survey using the terrestrial approach of walking the perimeter. Marshy areas were swamped and mining sites were flooded with water filled with unknown chemicals and sudden ditches. The team needed to partially circumnavigate the sites and place boundary makers in unreachable areas, as well as use the satellite imagery and the orthophoto drawing method to survey some of the most challenging areas. This made the mapping work much more difficult and inefficient than originally anticipated. The team learned to spend more time with the prior assessment of non-farm land cover in order to develop more realistic planning of the mapping work.

Adaptation of the cost recovery model: Due to various reasons mentioned above, by the end of the cocoa harvest season, Meridia had sold 70 land tenure documents across the four communities on the discounted pricing model, a far cry from the targeted 520+ documents. It became clear that a different approach had to be found to ensure a sufficient number of land documents being distributed. The Meridia field team needed to reach this target in order to (1) obtain a large enough sample size for the CEL endline survey and the associated statistical analysis; (2) benefit the farmers who participated in the work given the USAID subsidy to date to collect the information; and (3) collect additional learning on how farmers value land documentation and implications for scaling in the Asankrangwa Stool, Wassa Amenfi District, as well as across rural Ghana.

Meridia was expecting that sales would increase somewhat after delivery of the first batch of FarmSeal documents, but not significantly since the harvest season had now ended and farmers' available cash is much reduced. The ILRG team considered several different options for moving forward and still meeting the target. These options were:

- **Option 1 – Retain the status quo:** Keep the current pricing and attempt to increase sales with more marketing.
- **Option 2 – Provide a deep discount without additional subsidy from USAID:** Introduce an additional 75 percent discount on documents to encourage strong uptake with some existing financing through the current Meridia subcontract.
- **Option 3 – Provide a steep discount with an additional subsidy from USAID:** Introduce a greater than 75 percent discount for documentation service to encourage even stronger uptake.
- **Option 4 – Provide a complete subsidy with free or next to free documentation:** Deliver virtually free documentation, requiring farmers to pay only a token amount.

After lengthy deliberation with USAID and the ILRG team, the fourth option was chosen. Meridia simply could not guarantee that it could meet the USAID target of delivery of 520 FarmSeal documents otherwise. Through the adoption of the strategy to provide an extremely steep discount, at least contractual targets could be met, all farmers interested would receive a FarmSeal document, and at least a nominal price would be paid by farmers. Even with this extremely low discount, it is not at all certain that all farmers will be interested to even pay the nominal amount. The downside for Meridia is that the fourth represents the abandonment of the cost recovery model and that future efforts to offer pay-for-service arrangements in the Wassa Amenfi West District may be doomed to failure.

As noted previously, Meridia presented a plan for reimbursing farmers that pre-paid for the FarmSeal documentation service. As soon as the COVID-19 area restrictions are lifted, Meridia will resume finalizing signatures and deliver the FarmSeal land title documents along with the 749 tree registration certificates. At the time of writing of this report, it is not certain that landowners will pay the symbolic fee to obtain the FarmSeal documentation.

3.4 LOCAL INSTITUTIONAL EMBEDDING

3.6.1 ONGOING DATA MANAGEMENT SOLUTION FOR ASANKRANGWA STOOL TRADITIONAL AUTHORITIES

The delivery of customary land certificates to hundreds of farmers in the area warrants a model to enable maintenance of land records after the project's end. ILRG anticipated this at the onset of the project and decided to offer the Asankrangwa Stool not only the physical copies of all delivered documents but also a digital database where they can at least access the available land records. Meridia also offers a more comprehensive land administration solution for customary chiefs, Ghana°Ground, but this was considered out of scope for the current project. Therefore, under the current project, a more simple solution is envisioned: Meridia will make the data available on a cloud platform and make available pre-configured tablets to the Asankrangwa Stool and train their staff on how to use them. Going forward, the stool can use this database to prevent and mediate conflicts, manage and maintain land use plans, calculate annual land tribute, and most importantly, manage land transactions in the area, such as when land is transferred through inheritance, lease, or sale.

4.0 RECOMMENDATIONS FOR FURTHER DEVELOPMENT AND REFINEMENT OF THE FEE-FOR-SERVICE MODEL

Meridia learned much in piloting the cost recovery model in the four ILRG focus communities. In effect, from the perspective of the Meridia field team, the hopes of covering costs of implementing the FarmSeal land documentation service did not pan out as expected, despite the support from USAID to carry out wall-to-wall mapping and to open up opportunities for Meridia staff to learn about the local communities through the participatory action research around the land use planning diagnostic.

4.1 RECOMMENDATIONS FOR SCALING UP FARM TENURE DOCUMENTATION IN GHANA

The cultural and economic context in the Western Region's cocoa-growing areas may not be particularly favorable for fostering land rights documentation. Traditional authorities are powerful and the costs of engaging and managing them are high; the landowner-tenant problematics that ILRG confronted is a case in point. Fundamentally, the signing fees for various authorities are also steep, and even though they can be negotiated downwards, the cost may still be prohibitively high for most cocoa farmers. The depth of poverty may be higher than Meridia expected at the outset, but demand for land documentation may also be weak because landowners feel quite certain of their ownership rights, though tenants view the situation very differently.

Meridia has carried out land documentation in other countries and with quite different outcomes. In Indonesia, the cost of a government land certificate is US\$30 to US\$150 per parcel (averaging 1.2 hectares) for a fully certified and formalized title. Prices vary depending on the level of government subsidization that is contingent on district quotas and systematic versus sporadic titling approaches. In Malawi, the cost for a customary estates certificate is US\$25 to US\$30 per parcel, as many levies and fees are waived by the government. In Côte d'Ivoire, the pricing of a land certificate is about US \$100 - US\$250 per parcel for a two to four hectare farm. The Ghanaian FarmSeal documentation secures the farmer's rights only at the customary level and is not recognized as a title or deed. Further formalization is possible through a land deed in Ghana and a land title in Côte d'Ivoire; and in both countries, this costs an additional US\$200 – US\$500 per parcel in government fees.

Until the new Lands Bill is passed in Ghana, customary land rights such as customary freehold, *abunu*, and *asideɛ* are not eligible for government registration. Farms under such tenure arrangements are therefore excluded from the opportunity to register their interest with the Lands Commission unless they arrange with the traditional authority to convert their tenure interest to leasehold status (commonly with 40 – 50 year terms for agricultural land). For these reasons, cocoa farmers in these countries have not obtained land deeds; a growing population of cocoa farmers holds a land tenure document at the customary level, such as Meridia's FarmSeal, or similar documents from private surveyors or other providers.

Meridia has engaged in conversations with the Ghana Lands Commission to explore ways of registering these customary interests without requiring farmers to obtain a land deed and be mandated to pay the additional registration fees. There is interest and willingness to have an open discussion on the topic, yet to date there has been little movement towards a solution.

4.1.1 A SCALABLE PRICING AND DELIVERY MODEL

The Meridia pricing model tested in the four Asankrangwa communities did not turn out to be successful in achieving the targeted number of sales to farmers. This failure to reach the targeted numbers has been fully discussed above, but the low numbers came as a surprise given Meridia's successful experience in other parts of Ghana. Meridia has worked in 500 cocoa-farming communities in the Western Region where it sold over 5,000 FarmSeal documents and collected full cash payments in installments from farmers without any form of subsidization. Admittedly, Meridia naturally gravitated towards communities where cocoa farming was relatively productive and farmers were somewhat more affluent. Meridia's experience in other parts of the Western Region reinforces the conclusion that several situational factors contributed to the failure of the cost recovery model under ILRG, including unresolved landowner-tenant friction, relatively unproductive cocoa farms, and the previous free documentation in Nyame Nnae. The unique situational context of the four communities in the Asankrangwa Stool makes a difference. The question must then be asked, is the concept of a fee-for-service commercial model viable? Meridia's experience in the Western Region suggests that:

- Full subsidization of the costs of land documentation is required when factors like those encountered in the four focus communities in the Asankrangwa Stool occur. Even with a significant price discount, there are situations when farmers simply cannot or will not make a financial contribution. In these situations a full subsidy from external actors is likely required if land documentation is a policy goal by the government, donors, and/or the private sector. Meridia estimates that roughly 20 to 30 percent of Ghana's cocoa-growing communities encounter the same situation as those in the four ILRG focus communities.
- Partial subsidization (the cost recovery model applied under ILRG in the Asankrangwa Stool) likely applies to communities where one or more undermining factors are at play (previous free documentation, conflicts over tenure terms and farmer rights, low cocoa productivity) and can be addressed effectively within two to three months of launching a land documentation campaign. Meridia estimates from its own experience that roughly 40 to 60 percent of cocoa-growing communities in Ghana fall within this category.
- Fully commercial fee-for-service can work with farmers who are not facing tenant-landowner conflicts and who have reasonably good cocoa profitability. Unfortunately, it is likely that only 20 to 30 percent of Ghana's cocoa farmers are in this category.

The future of a cost recovery approach for land documentation may thus appear grim for private sector firms like Meridia working within a troubled cocoa sector and confronted by problematic underlying land tenure issues. In the future, Meridia must do a more thorough assessment of the ability of farmers in an area to pay for land documentation services, and from that assessment, decide upon the appropriate pricing model and the level of subsidization required. Assessments of ability to pay cannot rely simply on questionnaires asking about price points farmers can afford, but require much more in-depth situational investigations.

4.1.2 SITE AND COMMUNITY SELECTION AND SENSITIZATION

The experience of implementing the land documentation service in Asankrangwa Stool generated many key lessons around criteria that should be used in selecting pilot zones for experimenting with cost recovery pricing models.

- One significant factor is that it may be difficult to launch a paid service in a site where other communities have received a free service. A significant period of time should pass before setting up a fee-for-service initiative. In the case of the four pilot villages of Asankrangwa Stool, most of the community members knew that the land documentation service had been fully subsidized

under the TGCC pilot. They thus held firm on the belief that the same donor should pay in full for their fellow farmers in the same or neighboring communities. In effect, the communities were able to come together around a common view of “why should we pay if this same service was offered free nearby?”

- The institutional context at the stool chief level makes a difference. The divisional chief must be “substantive,” that is, vested with the authority to make decisions but also to encourage compliance. This will ensure that policy decisions are respected by all. In the case of the Asankrangwa Stool, the replacement after the passing of the divisional chief has not yet been made; the absence of the substantive divisional chief may have created more delays.
- Calculation of what pricing model may work in a particular locality is fraught with uncertainties. Despite in-depth analyses carried out by the CEL and a situational assessment as part of the land use planning component of the ILRG activities in Asankrangwa Stool, land documentation service providers still need to do more thorough upfront assessments in targeted communities on the ability and willingness of farmers to pay for a documentation service. The determination of a pricing model involves much guesswork, but ultimately, the price point is determined largely by the farmers themselves and their views of how much they are willing to expend for farm documentation
- The selection of the communities or traditional areas should be demand-driven instead of supply-driven. The community must show commitment in the form of financial contributions or down payment complementing the subsidization.
- Traditional authority and community engagement must be executed by the team. The creation of the right relationship and good rapport is key in community engagement and working in traditional areas.
- The base survey and assessment activities should be conducted at a reasonable interval before the execution of the wall-to-wall mapping and tenure rights documentation. Some of the farmers formed false expectations, especially when most of the questions from the surveys were still fresh on their minds.

4.1.3 PRIVATE SECTOR PARTICIPATION

The experience of land rights documentation in the Asankrangwa Stool and other localities in Ghana leads Meridia to conclude that subsidization will be required for at least 75 percent of cocoa-growing communities over the next decade. Unless the government of Ghana decides to cover the administrative costs of customary rights documentation, subsidization originating from some institution will most likely always be required. While it is highly unlikely that the government of Ghana can cover these costs, Meridia believes that a combination of donor and chocolate company subsidization may go a long way toward assuring land documentation around commercially viable lands. Donor contributions will always be important, for example for covering the costs of assessments, pilot trials of new approaches, and assistance for scaling up promising models. However, true scaling up to say, more than 10,000 farmers, cannot occur unless some significant and reliable source for subsidization is secured. Meridia believes that the chocolate industry is well-positioned to take on a larger financial commitment to securing land tenure for smallholder producers, and perhaps, cover as much as one-third of the costs of land documentation. With such contributions, scale could be reached, thereby driving down land documentation costs even further. Meridia recommends setting up a blended financing model, for example, an industry-led West African land tenure fund, something like a basket fund financed equally by the private sector and donor contributions.

Industry champions like Hershey have gone a long way toward supporting the land documentation service piloted in the Asankrangwa Stool. Other companies are starting to take interest in supporting land rights clarification and documentation. For instance, Meridia is planning to carry out land documentation on a large scale in the traditional area of Sefwi Wiawso, Ghana's largest cocoa-growing area that consists of 10 cocoa districts and at least 50,000 cocoa farms, with a private sector cocoa company. After two years of negotiations facilitated by Meridia, Solidaridad, and the Ministry of Lands and Natural Resources, and with the traditional leaders and the tenant farmer association, a groundbreaking agreement has been reached. Many issues confronted in the Asankrangwa Stool have been resolved, such as the tenancy terms associated with the thorny subject of cocoa tree cutting/replanting and tenancy renewal fees. In March 2020 Meridia signed a memorandum of understanding with the traditional authority to be the sole surveying company for all cocoa lands in the area. Other chieftaincies are keeping a close eye on this new initiative. This new initiative may prove to be fertile ground for scaling up land rights documentation as well as the business case for co-financing with the cocoa industry, government, and land documentation services themselves.

4.2 RECOMMENDATIONS FOR ONGOING MANAGEMENT OF DATA AND LAND TRANSACTIONS

4.2.1 CURRENT SITUATION OF LOCAL-LEVEL LAND ADMINISTRATION

The land documentation system of Ghana is predicated on the key role that the customary land secretariats (CLSs) play in land rights clarification, claims registration, and documentation of land transactions. Until now, land documentation registration and archiving has not been supported adequately from an institutional or political standpoint. The political will to adequately finance CLSs is simply not present. The CLSs today are understaffed and lack sufficient financial support, and as a result, lack the capacity to carry out their mandated functions. Several of the few active CLSs are run by volunteers, who often have to seek other means of income to sustain a living.

The land documentation system at the level of the CLS is not yet functional. Paper records are stored in poor conditions, thereby placing valuable land records at high risk of accidental loss. Similarly, some CLSs set up electronic databases on local hardware, but these systems are not backed up or protected from electronic viruses. More often than not, there is no overarching system to record and archive land documents. Records accumulate over time under different storage systems. Since custom-designed land administration systems at the local level are expensive to maintain due to high software licensing fees, and staff require a high degree of training to learn the particularities of each, they are not generally sustainable over time.

Given that many different data collectors can operate in any given area in Ghana, another concern is that there is no process of database standardization. Data management protocols do not exist and for this reason, there is no data conformity. On the whole, individual records are prone to error and incompatibility. The Ghana Lands Commission pays little attention to the data collection and storage needs of CLSs since their main concern to register, record, and storage information requiring Lands Commission approval, such as a deed or title registration.

Traditional authorities themselves have limited capacity to generate resources for an investment of any kind, let alone into land administration. Even though signing fees are demanded of those registering land transactions, like those of FarmSeal, these funds are not reinvested in the CLSs. The CLSs have no sustainable business model that allows them to be considered an asset rather than a burden to the traditional council. Ultimately, this results in fewer landholders acquiring land documentation and formalizing land transactions. The process remains tedious and expensive, and customary authorities have no incentive to change tack, eventually stifling demand rather than encouraging it.

A land documentation system should offer a means for CLSs to become self-sustaining, revenue-generating units for the landowning chiefs and families. Properly designed and administered, CLSs could become a bridge to, or even an integral part of, the state formal land conveyancing system. This in turn could unlock land documentation up to tenfold from current volumes, providing efficient resources for data maintenance and standardization, while creating a streamlined and professional administration of customary rights.

By putting in place a revenue-generating monetization model, that allows a pay-as-you-go approach for land users, a land documentation system based on payment of fees could provide a steady source of revenue to the CLS and thereby ensure payment for the operation of the system. Despite the setbacks confronted by Meridia in the Asankrangwa Stool, the need for self-financing of land documentation remains critical. Until now, most CLSs have focused on how to survive, but they need a backbone and service model to really thrive. Perhaps new opportunities will emerge if the CLSs become further institutionalized into government policy through the proposed new Land Bill.

4.2.3 GHANA°GROUND

Through the FarmSeal documentation and parcel land ownership certification process, Meridia has put in place a mechanism for CLSs to access and view the documented land holdings and the related database. Meridia is prepared to monitor the usage and interaction of the CLS led by the stool chief with the database and be available to provide technical support.

At this time there is no mechanism to record land transactions once the first generation parcel mapping and documentation has occurred. There are several platforms on the market that could be used to record and manage ongoing land transactions, such as Solutions for Open Land Administration, Landfolio, and Open Tenure. Among the array of options, Meridia worked with Innola to develop Ghana°Ground to be used to support land documentation with the CLSs. While an independent body would need to judge the efficacy of one platform or another, by way of illustration Ghana°Ground can do the following:

- The platform is light, easy to use, and sufficient for the needs of each CLS. It is compliant with the internationally recognized Land Administration Domain Model standards.
- The platform can be deployed in a secure cloud environment and is therefore available to any CLS officer or traditional authority with internet access on a computer, while simultaneously enabling real-time access into aggregate dashboard and reports by national institutions. The platform can be easily integrated with systems at the Ghana Lands Commission. The platform can also be deployed on local servers if stable internet access is an issue.
- The platform workflows and transactions are pre-configured to the operations of the CLS, with most common activities and tasks available from the onset. This means that CLS officers will recognize the processes and steps involved in generating leases, grants, consent letters, and other documents. This makes training and adoption of the technology easy.
- The platform's hardware requirements are basic, meaning that the platform can be accessed on any web browser from all computers.

Implementing a more comprehensive software solution requires a longer time-frame, with several months of configuration and training required and at least two years of ongoing local and remote support for the CLS's operational team. Therefore, the most suitable level of implementation would be the traditional area as a whole (i.e. Wassa Amenfi) and not a single division or stool. As part of the current contract between ILRG and Meridia, a rudimentary or highly simplified management solution will be put in place, while a more comprehensive implementation remains an opportunity for the future.

4.4 RECOMMENDATIONS FOR SHADE TREE REGISTRATION

Meridia remains neutral on the topic of whether the tree registration policy laid out by the Forestry Commission (FC) leads to greater tree tenure security. The tree registration process is still relatively costly and cumbersome for all parties involved. Linking of shade tree rights to land rights would seem an obvious solution to simplify administrative burdens and costs but for the moment, this may be untenable for many institutional and administrative reasons. Nonetheless, Meridia has carried out in several mapping and registration initiatives for shade tree registration and has the following recommendations:

- Within customary tenure systems in Ghana, land tenure is closely linked to tree tenure. Traditionally, tenants are generally not allowed to plant trees since this implies a long-term investment on the land, and indeed, certain rights of land ownership. For this reason, customary landowners often refuse to allow tenant farmers to plant shade trees. Meridia recommends that some form of national legislation be enacted to protect tenant farmers' rights to planted trees, even when their interest in the land expires. In addition, legislation could be enacted, either at a national level or even through the customary tenure authorities at the stool level, stating that a new benefit-sharing agreement must be negotiated, such as 70 percent of the benefit to the tenant farmer who planted the tree and 30 percent to the landowner. This new arrangement would signify to the landowner that tree tenure for tenants is only temporary.
- The tree registration process raises many contentious issues for farmers. The FC needs to embark on a large-scale public education campaign to explain the benefits of tree registration in order to allay many misconceptions. The win-win benefits of tree registration are that the FC can document what species are planted where, and the tree planter gains rights of ownership to the benefit stream from the trees and thus strengthen their rights against illegal felling of trees by concessionaires and others.
- Guidelines and processes on tree harvesting should be simplified so farmers can more easily follow them. Brochures and bulletins should be prepared to explain the precise steps and costs of registration.
- Tree seedlings should be made easily accessible and affordable, if not free, by the Forest Services Division for farmers who want to plant them. Trees nurseries or distribution centers should be placed in close proximity to farmers.
- The FC should proactively visit communities and farmers to inspect the processes behind the registration of shade trees. The FC could liaise with farmers' cooperative unions to set up periodic visits. Such visits would be useful to assess the growth rates of registered trees, answer questions from farmers, and otherwise assess the effectiveness of the tree registration policy and administrative practice.

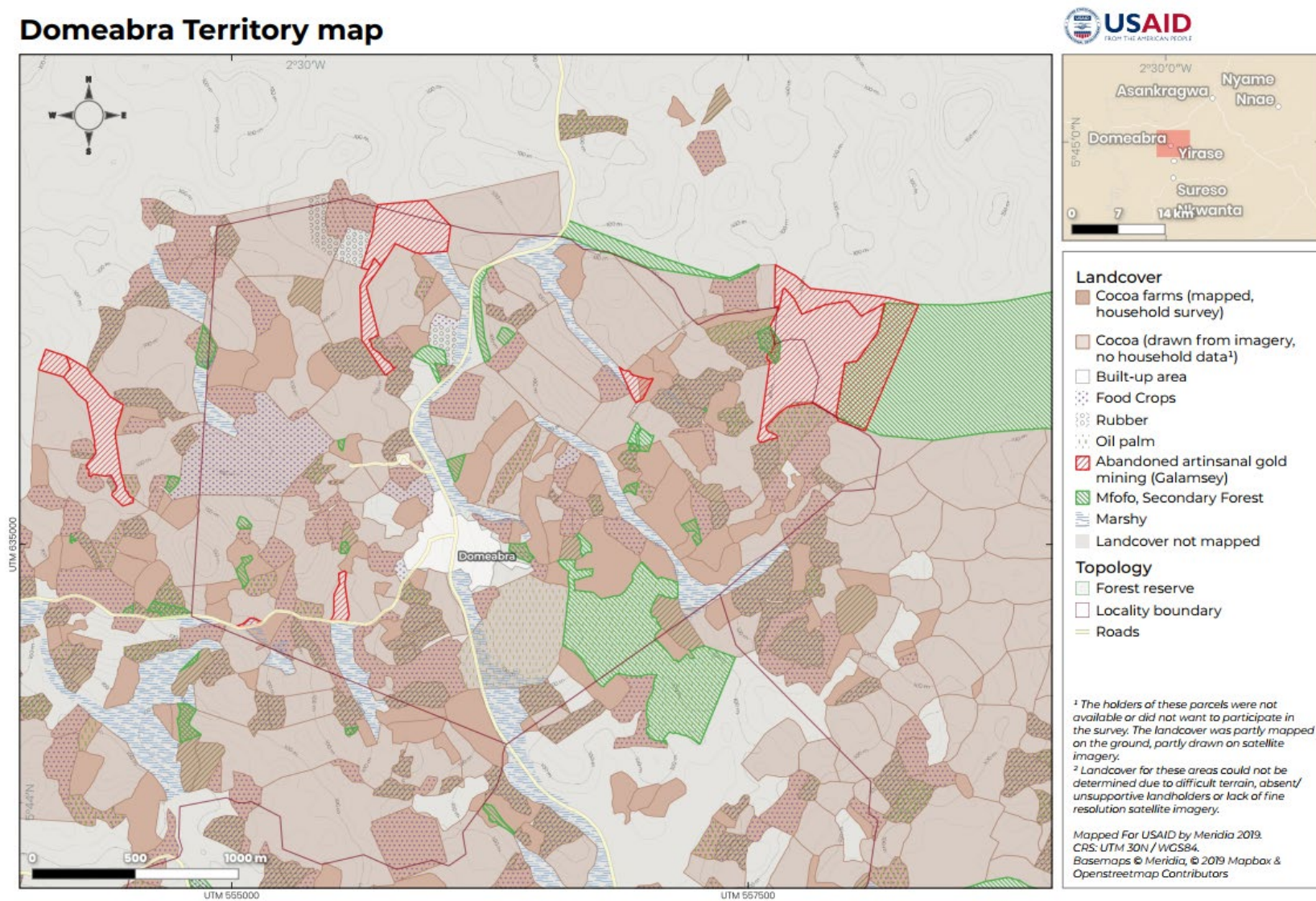
ANNEX I: REFERENCES

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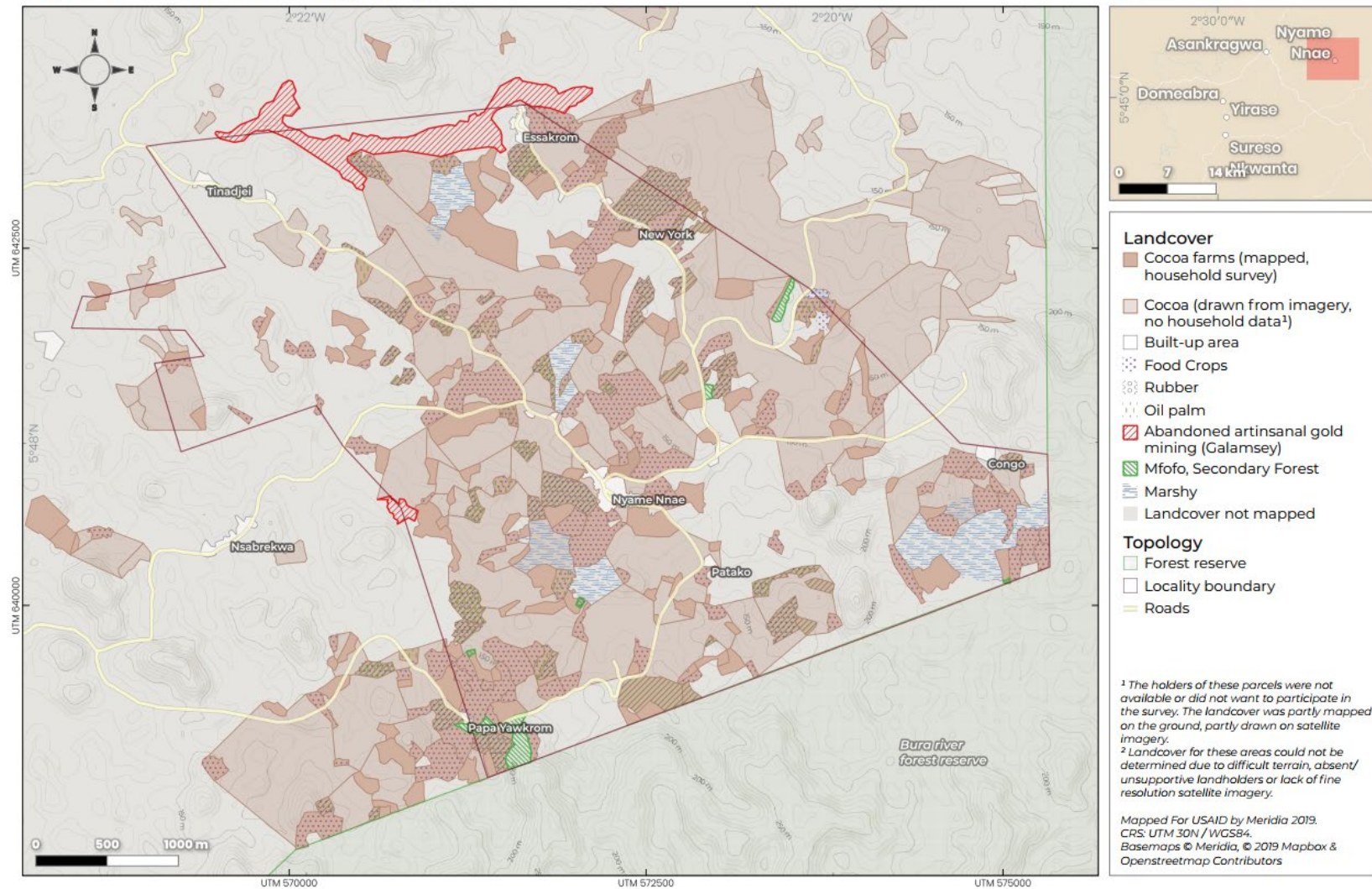
ANNEX 2: COMMUNITY MAPS

COMMUNITY TERRITORIAL MAPS

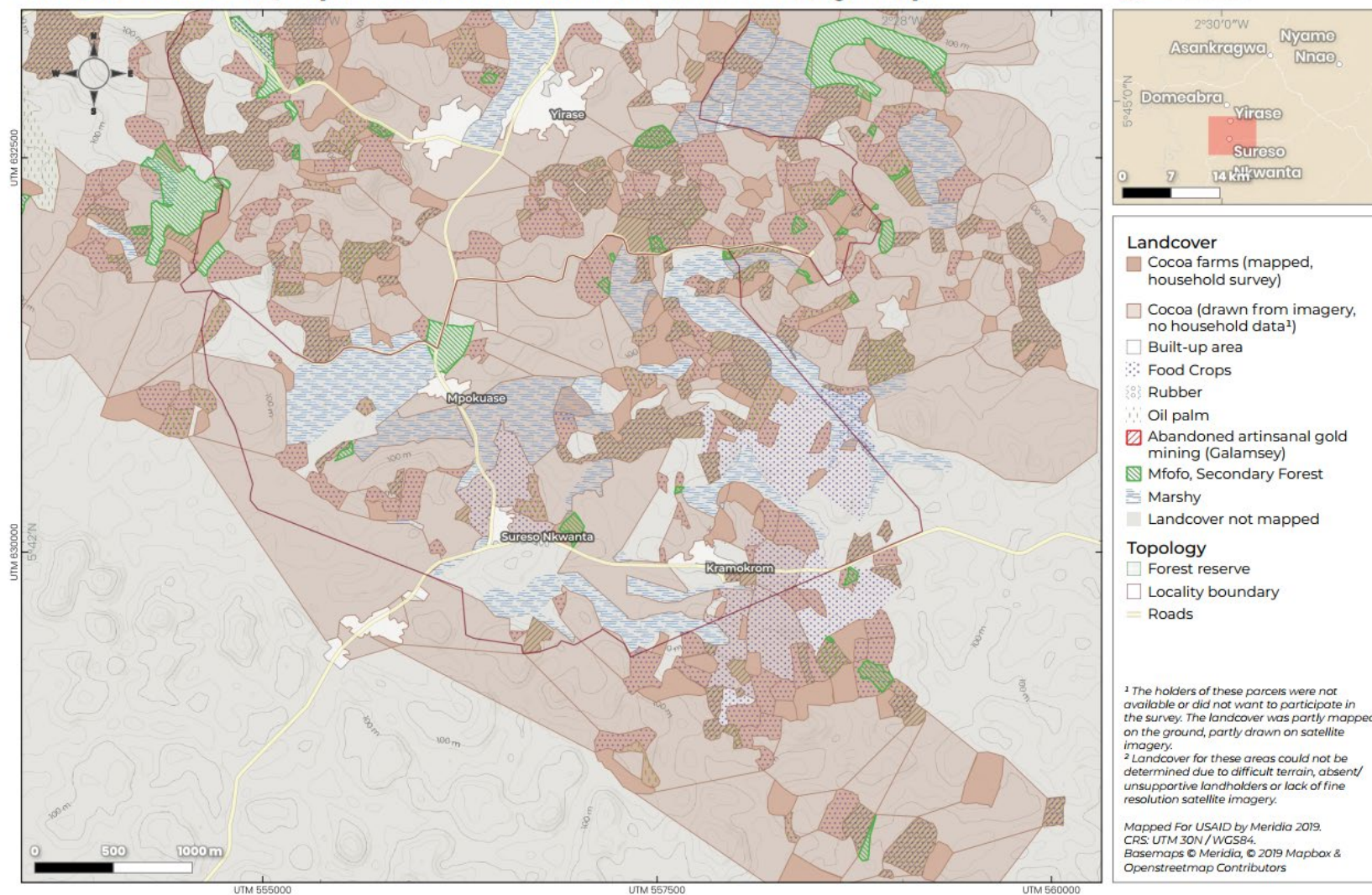
Domeabra Territory map



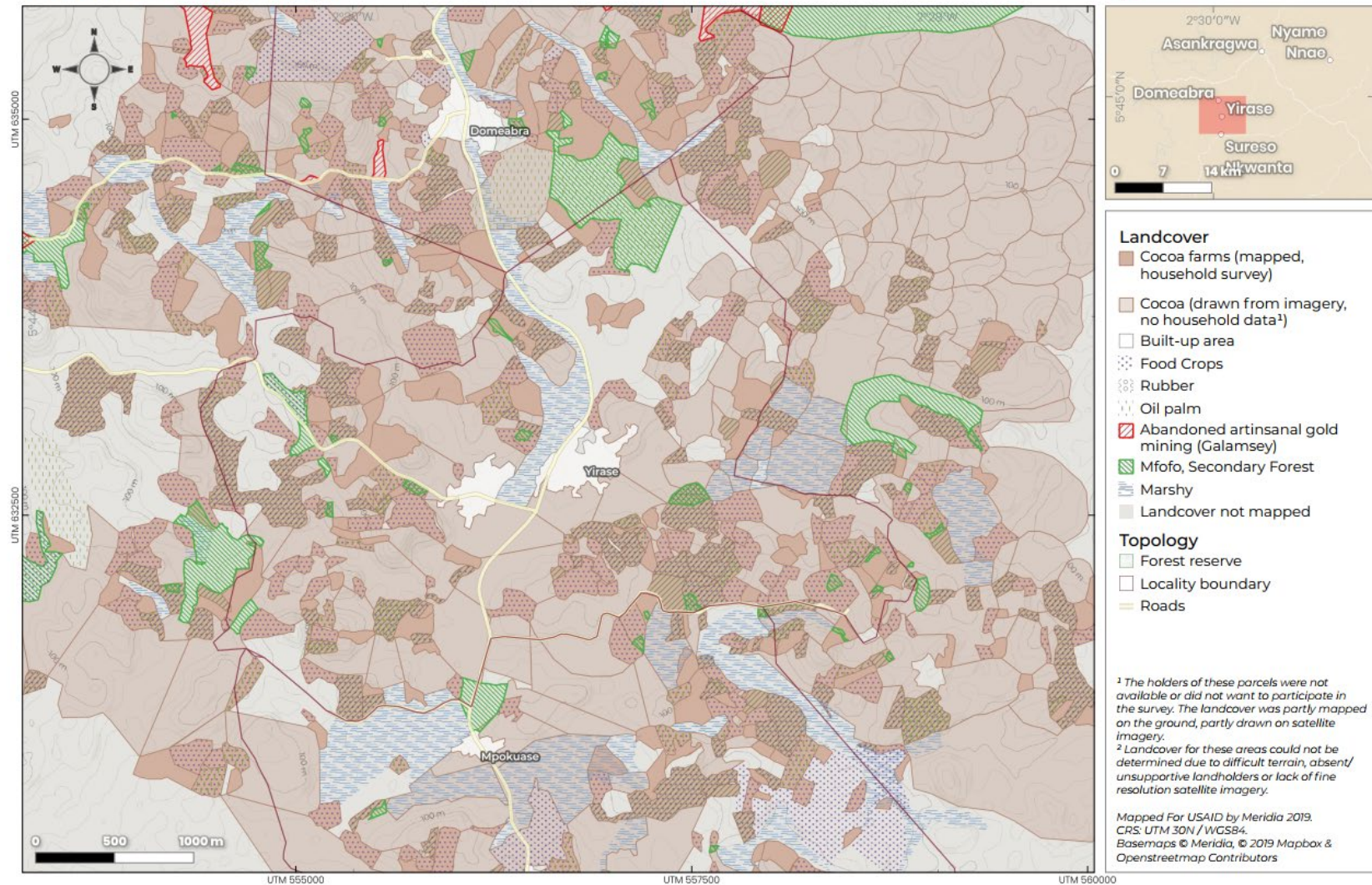
Nyame Nnae Territory map



Sureso Nkwanta, Mpokuase and Kramokrom Territory map



Yirase Territory map

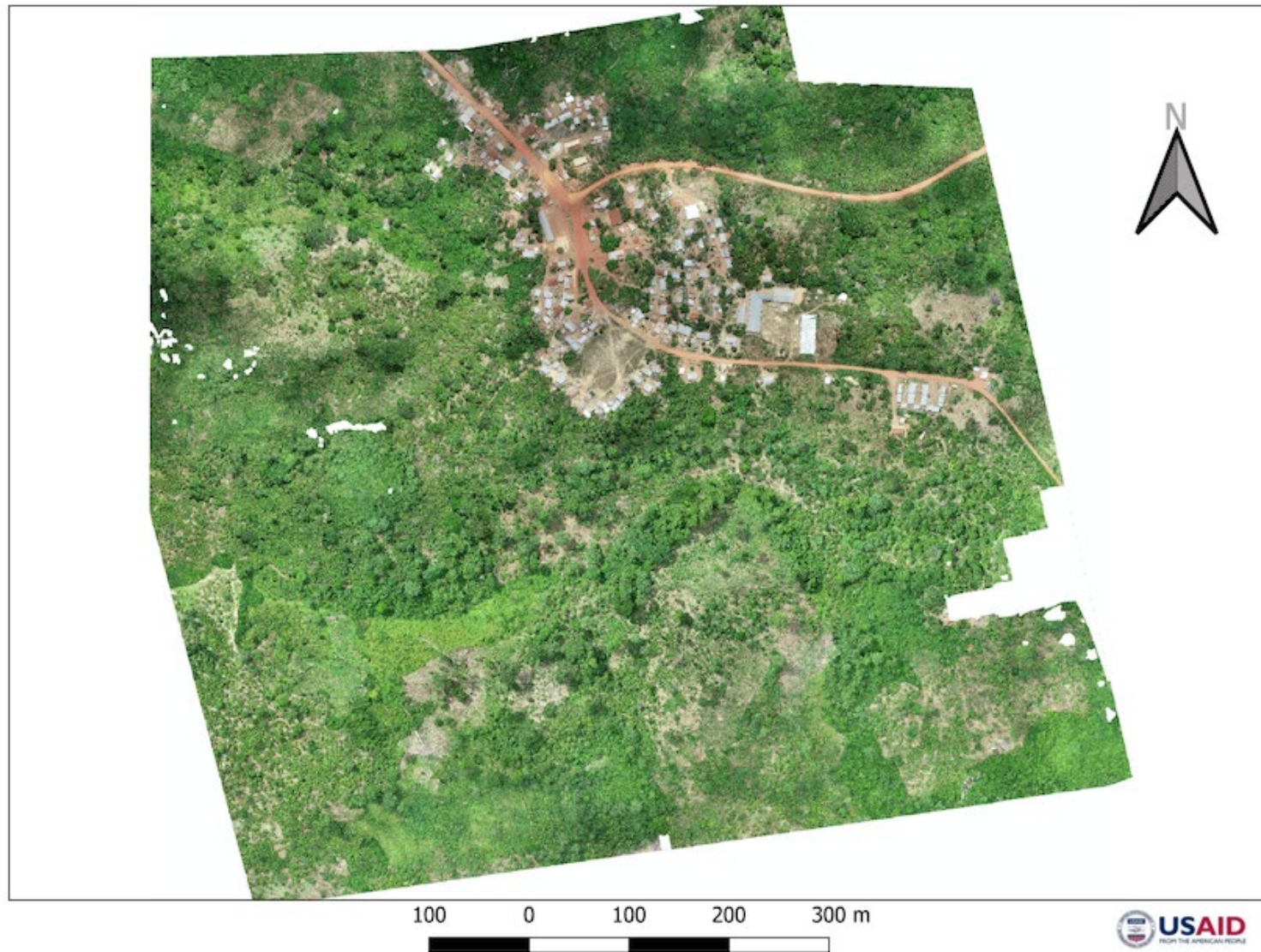


COMMUNITY SETTLEMENT MAPS

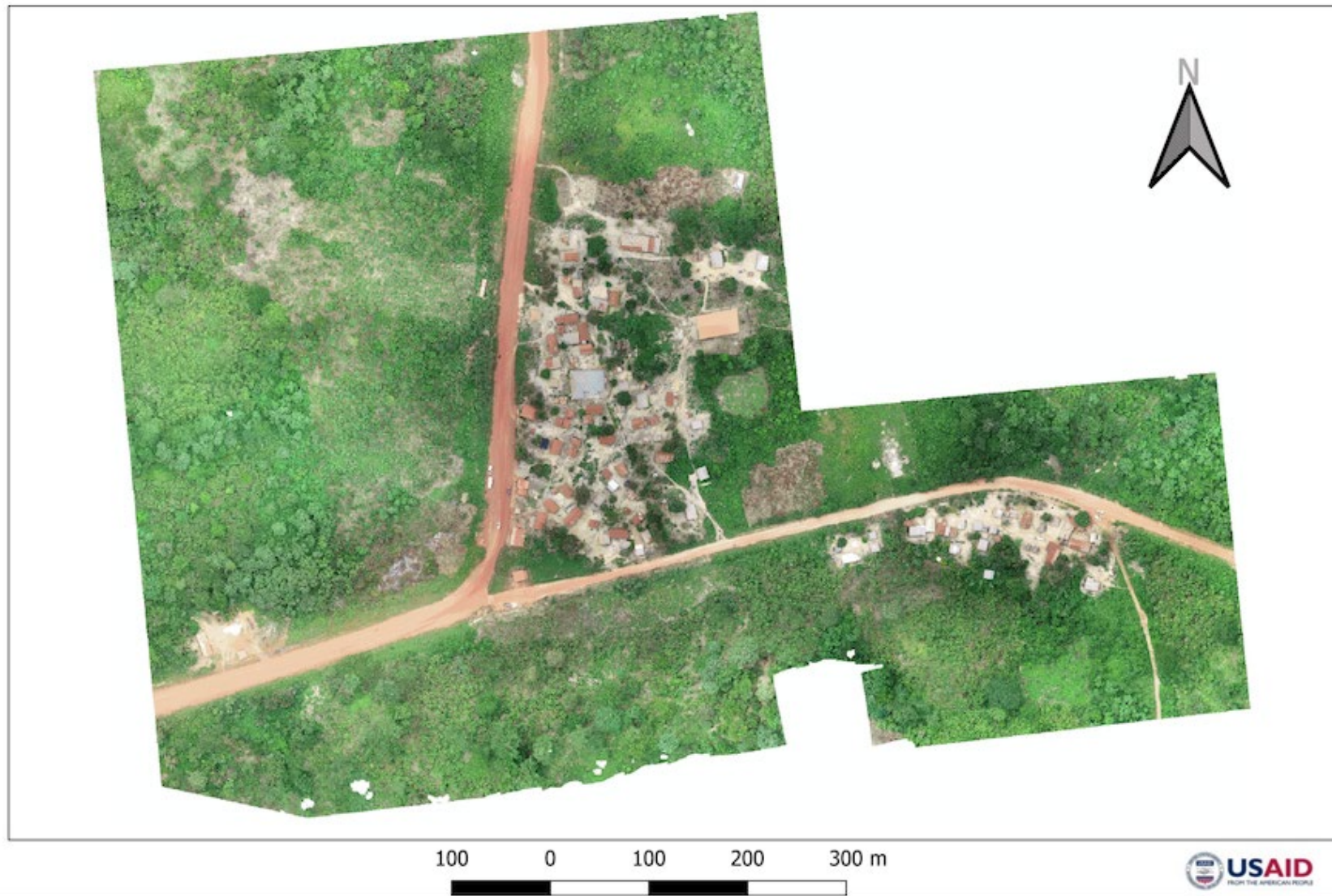
Domeabra



Nyame Nnae



Sureso Nkwanta



Yirase



0 100 200 300 m



ANNEX 3: FARMSEAL TEMPLATE

FarmSeal Document

For: [REDACTED]



[REDACTED] (Applicant)



Sequence No. [REDACTED]

Document Code [REDACTED]

Date Interviewed 03 October 2019

Date Mapped 26 September 2018

Date Produced 01 January 2020

With this FarmSeal document Meridia (Land Seal Ghana Ltd.) facilitates the validation of the land right claims by the relevant authorities and documentation of the demarcated farm land parcel for the applicant(s). Meridia acknowledges that the Plan of Land meets the government requirements for land surveys existing on the date on which this parcel has been demarcated. Meridia is not aware of any competing claims of rightful ownership or occupation of this property, however this document is not a warranty that competing rights do not exist. The content of this document package may be used to expedite the formal registration process with the government or customary authority that oversees land registration. However, this document does not represent a formal Lands Commission title nor government registration. This Meridia representative confirms to have explained the full contents of the documents in the language that the applicant understands. The applicant(s) confirms that all information for creation of this document was correctly and truthfully provided and no relevant information has been withheld.

Parcel Profile

Region Western Region
District [REDACTED]
Traditional Area [REDACTED]
Stool [REDACTED]
Locality [REDACTED]

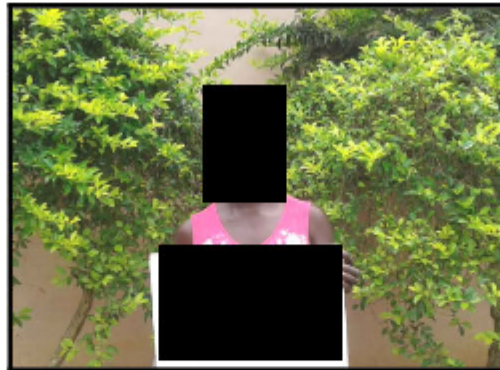
Parcel Size 1.27 Acres
Avg. Altitude 114 Meter
Center of Parcel [REDACTED]
 (Lat, Long)
Route to Parcel [REDACTED]

Land ownership type Stool land
Land tenure type Abunu
Means of acquisition As a gift
Acquired from [REDACTED]
Acquired when 2016
Competing claims None
Boundary disputes None
Rights restrictions None
Agricultural use Yes, 100%
Sharecroppers [REDACTED] (Carecaker, Since 2019)
Parcel topography Flat
Crops on parcel Cocoa
Livestock on parcel None
Parcel improvements None
Boundary Markings Boundary flowers
Evidence in possession NA
Parcel Neighbours [REDACTED]

Testimony of Parcel History

I, [REDACTED], a native of [REDACTED] in the Western Region acquired the said land parcel as a gift from my husband [REDACTED], a native of [REDACTED] in the Western Region in the year 2016. I offered him one bottle of schnapp as a sign of appreciation in the presence of [REDACTED] and [REDACTED] as witnesses. [REDACTED] acquired the said land parcel through Abunu agreement with [REDACTED]. [REDACTED] acquired the land parcel as a gift from his father [REDACTED]. [REDACTED] was the first person to settle on the land parcel when the land was a virgin forest. I have been in possession of this parcel since then and now seek to secure my interest in it through this application.

Applicant Profile

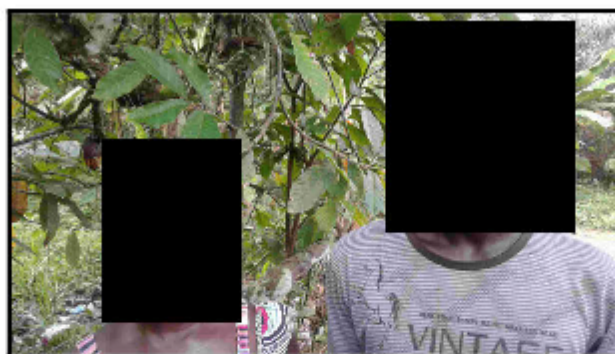


(Applicant)

Full name [REDACTED]
Gender Female
Date of birth [REDACTED]
Place of birth [REDACTED]
Ethnicity Indigene
Marital status Married
Spouse name [REDACTED]
Occupation Farmer
House location [REDACTED]
ID type Voters ID
ID number [REDACTED]



Mapping Witness Profile



Witness with Applicant

Full name [REDACTED]
Gender Male
Address [REDACTED]
Primary occupation Farmer
ID type Voters ID
ID number [REDACTED]
Neighbour Yes
Share boundary Yes
Community position N/A
Acquainted since 2009
Verified full boundary Yes
Boundary disputes None



ANNEX 4: FORESTRY SHADE TREE CERTIFICATION TEMPLATE



Farmer /Group /Company Code:

REGISTRATION OF TREES ON OFF RESERVE LANDS

(A) Beneficiary Details

(A1) Farmer/Developer /Individual Details

Type of ID	ID Number:	3.5cm	
First Name:	Surname:	Other Names:	
Gender: <input type="checkbox"/> M <input type="checkbox"/> F	Date of Birth (dd/mm/yyyy):	Age: 4.5cm	
Address: (Postal / Residential):		Picture	
Phone Number:	Email Address (if any):		
Next of Kin:	Relationship:		Date of Birth:
Age:	Gender: <input type="checkbox"/> Male <input type="checkbox"/> Female		Phone Number:
Address (postal/Residential):			

(A2) Group/Company Detail (A2.1) attachment

Group/Company Name:	Reg. Number(RG) if any:
Group (President & Secretary) /	/
Company(Directors):	/
Group/ Company Address: (Postal / Residential):	
Phone #:	Email Address (if any):

(B) Location/ site

Region:	Forest District:	TA/Stool/Skin/Family:
District Assembly:	Community:	

Type of establishment : ☐ Woodlot ☐ Commercial plantation ☐ Others (Specify):
☐ Planted trees on farm ☐ Naturally Occurring Trees ☐ Fallow ☐ Sacred Grove

(C) Tree Farm Information

(C1) Farm Information (C1.1) attachment

Farm ID:

Tree Farm Area (Ha):					
coordinates of the Plantation plot/ Farm (for the Development of Maps):					
Date	Point ID	Latitude	Longitude	Way Point No.	Remarks

(C2) Tree Information on Plantation (Woodlot, Commercial plantations, others) (C2.1) attachment

No.	Species Planted	No. of Trees (Stocking)	Planting Distance (Spacing)	Year of Establishment	Remarks
1.					E.g. Planting Completed

(C3) Tree Information (Planted Trees on agricultural Landscape, Naturally occurring trees others)

(Applicable only for Trees on farms (C3.1) attachment

Tree No	Species	Size of tree (dbh)	Year planted	Year Nurturing started	Tree Location		
					Point ID	Latitude	Longitude
1.							

(D) Declaration

Farmer/ Group/ Company rep. Signature (Thumbprint): Date:	Witness Signature/Thumbprint	Name:
		Date:
		Phone #:

(E) Endorsement

District Forestry Manager's Signature & Stamp	FOR OFFICIAL USE ONLY	Comments:
Name:		
Date:		
Phone #:		

NOTE:

This form is not an indenture.
Before planting the trees, I had sought the approval of the land owner(s).

U.S. Agency for International Development

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