

GUIDELINES ON METHODS FOR IMPLEMENTING PLANTING-AREA DATA COLLECTION

UTILIZING LOCAL CAPACITY

This document draws on the experience of four piloting communes of Chieng Sinh, Pu Nhi, Nam Lau, and Muong Chanh in Đien Bien and Son La provinces.

1. Traceability to every farm plot: An urgent market requirement and a challenge on the ground

On 31 March 2023, the European Union officially issued Regulation (EU) 2023/1115, also known as the EU Regulation on Deforestation-free Products (EUDR). Under this Regulation, seven commodities with deforestation risk — wood, cattle, cocoa, coffee, oil palm, rubber, and soy — must, when imported into Europe, demonstrate that: (1) their production has not caused deforestation or forest degradation after 31 December 2020; and (2) the goods have been produced legally in accordance with the regulations of the country of production.

The Regulation has created a powerful cascading effect along the supply chain. Requirements for traceability information and data are passed from European enterprises (the parties directly obliged to declare and submit Due Diligence Statements) down to exporting enterprises, intermiediary agents, and ultimately smallholder farmers in the sourcing regions. In Viet Nam, planting-area databases remain essentially a "blank slate"[1]. The sectors directly affected by the EUDR — coffee, rubber, and timber — now face intense pressure: either rapidly build digitized data systems, or accept the loss of competitiveness in international markets.

This is not only an immediate trade challenge as the EUDR implementation deadline draws near; it is also a bottleneck that leaves governmental authorities struggling to monitor and govern fluctuations in planting

[1] *Tô, X. P., & Hà, C. T. (2026). The urgency of building planting-area datasets for agro-forestry commodities to serve management and traceability: A bottom-up approach. https://pub-11f428574adc4d41aede46d8289892c0.r2.dev/1782445878169-gallery_20260621_CSDL-vung-trong_final.pdf*

areas in response to market price movements[2]. A "living, clean, standardized" planting-area database will enable management agencies to provide strategic direction so that enterprises can select low-risk planting areas, ensure export standards for demanding markets, and thereby protect the livelihoods and long-term interests of farmers.

Since the EUDR was announced, many enterprises and businesses in Viet Nam have proactively develop planting-area databases for their coffee-sourcing regions. However, these datasets are treated as the "private assets" of the enterprises — not to mention that these datasets often vary regarding information fields — making it difficult for governmental agencies to consolidate and comprehensively monitor the production chain. Most importantly, farmers are left entirely outside this digitalizing movement. They neither understand its substance nor own or take part in updating the data on their own livelihoods. This results in a lack of self-determination and of sustainability in the data system.

Recognizing the urgency of market requirements and the importance of a planting-area database, Son La and Điện Biên are the two pioneering provinces in collecting and developing government-led coffee planting-area databases. Both localities have very limited cadastral data (which accounts for the bulk of the workload in building a planting-area database)[3]. Meanwhile, some enterprises that previously collected data for EUDR compliance have not yet disclosed it to the local government, making the development of a government-managed coffee planting-area database all the more important.

Against a backdrop of tight timelines and limited resources and data, Forest Trends partnered with the Departments of Agriculture and Environment of Sơn La and Điện Biên provinces to pilot the work in four communes, using an approach "tailor-made" to each commune. Combining free data-collection software as a substitute for traditional methods[4] or methods that are difficult for farming households to access[5] with the mobilization of locally available human resources, Forest Trends accompanied the Sơn La Department of Agriculture and Environment in supporting the pilot communes to complete the collection of coffee planting-area data. Drawing on this practical experience and field evidence, Forest Trends has prepared this document to summarize the approach — from the training model to field-level scale-up — together with lessons learned on harnessing local capacity and internal strengths, particularly at the commune and village levels.

It should also be noted that, at the time the pilot activities described in this document were carried out, the Ministry of Agriculture and Environment had not yet issued specific guidance on the methods and information fields required for EUDR compliance. The substence of the planting-area data-collection forms was therefore designed and managed entirely by the Departments of Agriculture and Environment of Điện Biên and Sơn La. Accordingly, this document does not go deeply into data management or data-collection tools/applications, as these are matters that deserve their own research reports. Instead, this report focuses on sharing practical experience in conducting rapid, effective data collection with limited resources and time, for other localities to consider as they build their databases — a foundation for sustainable agro-forestry management and for attracting high-quality investment.

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[2] Nguyen, L. (2025). Coffee Annual Report (VM2025-0018). United States Department of Agriculture. https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Coffee%20Annual_Hanoi_Vietnam_VM2025-0018.pdf

[3] Tô, X. P., & Dương, V. T. (2026, August). From building a planting-area database for traceability and management toward a multi-layered database for the future. Forest Trends.

[4] Data collection using paper forms.

[5] Handheld GPS units and RTK devices are common specialized equipment for delineating plots/parcels. In addition, many other planting-area data-collection tools are available on the market. Forest Trends has produced an assessment report on the eight most widely used tools in Viet Nam and worldwide (https://www.mkrg.org/vi/documents/bbd95bc0-019b-4ea9-9df4-96b534b0e1d3/vn/bao-cao-danh-gia-mot-so-cong-cu-thu-thap-dlvt-phuc-vu-thich-ung-eudr.pdf)

2. A three-phase model for collecting and building the planting-area database

The implementation process — from training to finalizing a province-wide planting-area database — is structured into three phases, combining vertical piloting with horizontal scale-up (Figure 1). Each phase must clearly define the target groups, participating parties, and specific activities so as to form a seamless technical network from the province down to each farming household.



Figure 1. The three-phase training model — Building a support network from province to household

2.1. Phase 1: Establishing the EUDR Task Force and conducting Training of Trainers (TOT) at the provincial level

To lock in accountability and demonstrate strong political commitment, provinces should establish an EUDR Task Force from the provincial level down to (where possible) the commune level. The provincial task force comprises leaders, focal-point officials, and a number of technical officers from specialized sub-departments such as the Sub-Department of Crop Production and Plant Protection, the Sub-Department of Forest Protection, and the Land Registration Office. These serve as the pool of master trainers, responsible for re-training the commune-level task forces (cadastral and agro-forestry officers, village management boards) and for providing direct technical support in the field at the village level when needed.

The training process should begin with Training of Trainers (TOT). The provincial TOT courses in Dien Bien and Son La included not only members of the provincial EUDR task forces but also commune People's Committee leaders, heads of Commune Economic Divisions, and the technical officers responsible for the relevant specializations in the sub-departments and units mentioned above. These technical officers then serve as trainers for the subsequent courses at the commune and village levels. Pilot experience in Điện Biên and Sơn La has shown that provincial TOT training needs to achieve two core objectives:

First, alignment of thinking, so that local leaders clearly understand the mission and implementation plan and reach strong consensus on the policy;

Second, technical mastery for commune officials: equipping them to use field tools and to manage, process, and clean raw data. The provincial TOT program is the essential foundation that helps communes clearly envision how to organize, staff, and coordinate actual implementation later on.

To accelerate progress under severe time pressure, the TOT course in Sơn La was streamlined by drawing on and integrating training results from other international organizations. This is a valuable practical lesson in blending resources in order to shift the focus quickly to field work at the commune level.

Box 1. Information and outreach work one step ahead

Outreach so that people clearly understand *"why data must be collected for every land plot"* is the decisive key to the success of the data-collection process. Without the cooperation of household heads, determining plot boundaries and verifying plot information in the field becomes extremely difficult.

Some lessons learned from the pilot communes:

- **Action by local government:** The commune People's Committee issued directives to village management boards. Village heads and Party cell secretaries held community meetings, explaining clearly that data collection serves to protect land rights, sustain farm-gate prices, and secure export standards.

- **Visual communication channels:** Making maximum use of village loudspeakers and community-hall notice boards before, during, and after the campaign so that the information sinks deeply into the community.

- **Reality in Sơn La:** Thanks to the communes' proactive communication efforts, even though implementation fell right in the rice-harvest season, residents of Nậm Lầu and Mường Chanh communes were still willing to spend 15–20 minutes per household working with the task teams to measure boundaries and provide yield information.



Figure 2. Trainees (village-based preschool teachers) introducing the process of collecting planting-area data for each coffee plot to households in Đông Thắp village, Chiềng Sinh commune, Điện Biên province

2.2. Phase 2: Hands-on training that produces real results vertically at the commune and village levels

Under ideal conditions, the training process would move from commune-level TOT (training commune officials and village management boards) to TOF (training of farmers) in each village. However, the streamlining of the government apparatus in the first half of 2026 placed commune governments under very heavy workloads, making prolonged training impossible. Therefore, given the urgency of time and limited resources, the optimal model applied was to integrate TOT and TOF at the commune level.

Commune-level courses are led directly by provincial master trainers in a hands-on, "learning-by-doing" format right in the field. Depending on the size of the planting area, each commune may organize one to three training courses (Figure 3). Note, however, that if a commune wishes to organize training by village cluster (as in the cases of Nậm Lầu and Mờng Chanh communes), it should select villages that are geographically close together to ease trainees' travel and to help the commune People's Committee easily supervise and coordinate data-collection activities after the training.

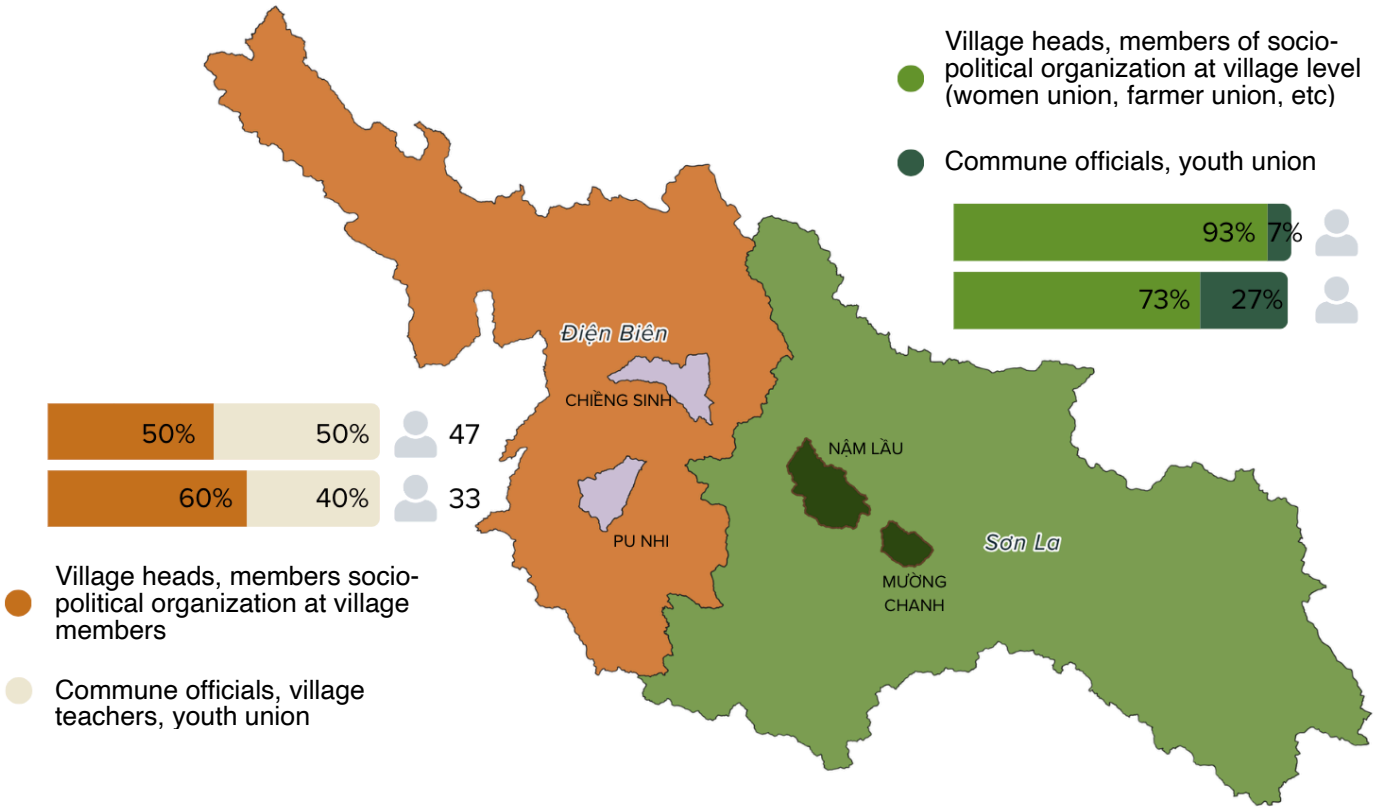


Figure 3. Overview of trainee composition and numbers in the training courses across the four pilot communes. Chiềng Sinh and Pu Nhi communes (Điện Biên province) each held one course, while Nậm Lầu and Mường Chanh communes (Sơn La province) held three and two courses respectively.

Figure 4 summarizes how a training course is organized; each course lasts about three days (including contingency time for bad weather — a real possibility in areas with highly changeable rainy-season conditions such as Sơn La and Điện Biên). In general, each course should be limited to roughly 40–50 trainees to keep field group work effective. Once in the field, the class splits into four groups collecting data across four separate areas to avoid overlapping data.

Time	Activities
Morning, Day 1: Theory and trial practice	• Trainees learn about the EUDR regulation. • Guided installation and indoor use of the data-collection app, with trial practice outdoors. • Setting up an online group chat to keep everyone continuously connected. These group chats become the commune's long-term technical-support network.
Afternoon, Day 1: Splitting into groups to begin fieldwork	• The class divides into four teams. Each team includes one trainer, one team leader, and one deputy leader (both of whom should be locals who know the area well), plus trainees. • Actual mapping follows a pre-prepared list of farming households. The first field session should not be rushed; quality (teamwork methods and real-world use of the software) should take priority over quantity. • End of day: a debrief meeting to resolve emerging issues and agree on the next day's plan.
Morning, Day 2: Small-group coordination in the field	• Team leaders assign trainees to move in pairs (or groups of three) to support one another in areas with weak signal. • Trainers monitor progress on the online management system to catch technical errors early (misdrawn or overlapping boundaries) and require on-the-spot fixes.
Afternoon, Day 2 + Morning, Day 3: Independent work	• By this point most trainees are familiar with the work and reasonably confident to work independently under the coordination of team leaders and commune officials. Thus, trainers should remain minimal interference.
Afternoon, Day 3: Wrap-up & finalizing the course dataset	• Work continues the scheduled finalization of the training course. • A whole-class wrap-up meeting distills lessons learned in preparation for the commune-wide scale-up phase.

Figure 4. Summary schedule of a training course

Preliminary statistics from the four pilot communes point to an important reality: the number of trainees is not proportional to the area of data collected (the outcomes). This confirms that mobilizing manpower en masse into the field is not the decisive factor for data quality nor for the effectiveness of subsequent data-collection rollout (Phase 3). Rather, well-organized teamwork, close engagement by local government, and the proactive spirit of the community — above all of the trainees themselves — are the keys to superior results in both quantity and quality. Concrete evidence from the pilot communes: Chiềng Sinh (Đien Bien) and Nam Lau (Son La) had 1.3 to 1.4 times more trainees than the comparison communes in the same provinces. Yet the coffee area mapped in Chiềng Sinh was five times greater than in Pu Nhi (Đien Bien). Conversely, Muong Chanh (Son La), despite having fewer trainees, collected nearly twice the area of Nam Lau (Figure 5).

Commune	No. of plots collected	Hectare collected	Targeted area to be collected (ha)
Chiềng Sinh	**846**	209	**718,8**
Pu Nhi	120	76	284,66
Nậm Lầu	1.477	341	5.368
Mường Chanh	1.102	602	2.989,4

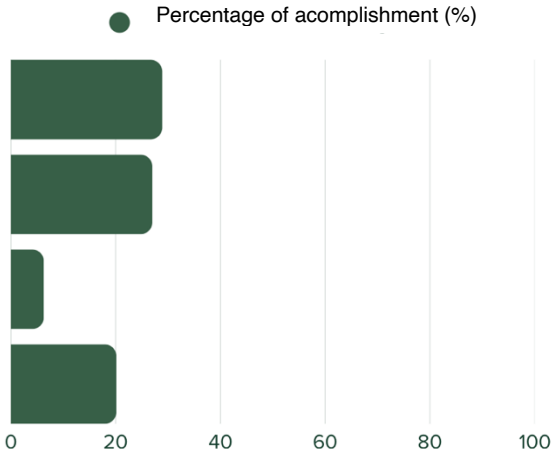


Figure 5. Provisional results (before data cleaning) of the training courses in Điện Biên and Sơn La (calculated as of the end of the three-day training)

It should also be added that the raw figures above reflect the particular characteristics of each locality, not merely the level of engagement of each place or its trainees. For example, Nậm Lầu commune mapped the highest number of plots of all four pilot communes. But because of its fragmented landscape, coffee plots there are very small and scattered, so trainee teams lost considerable time traveling and could not accelerate progress measured in area (hectares). Throughout the training, trainee teams therefore had to adapt constantly to real conditions, moving from one area to another to avoid wasting time “sitting around waiting” for household heads to come and verify field boundaries (see Box 2 for details).

The piloting process from Điện Biên to Sơn La was a journey of continuous self-improvement for the Forest Trends team and local officials. Each subsequent course built on, and drew deep lessons from, the shortcomings of the previous ones. As a result, Mường Chanh — the last commune to hold its training — achieved the most impressive results, with the lowest rates of misdrawn and overlapping farm plot boundaries, minimizing the burden of data processing and cleaning in the subsequent stage.

Box 2. Lessons learned for strengthening responsibility and training-course effectiveness

Set specific, easy-to-visualize, quantifiable targets to motivate trainees: For example: *each trainee must complete at least 1 ha of standard-quality mapping within the three-day training.*

Prepare thoroughly before going to the field: Household lists, phone numbers, and village zoning for assignment to small trainee groups must be ready before the training day.

A flexible coordination mechanism in the field: Unexpected situations always arise (e.g., one group meets more household heads than another). Each large group should elect one leader and one deputy to coordinate proactively and rotate trainees to help one another in time, avoiding a situation where "some sit idle while others are overwhelmed".

Make use of distinctive local human resources:

- *Village-based preschool teachers:* people with deep local knowledge, standing, and good relationships with residents (experience in Chiềng Sinh commune, Điện Biên province).
- *Youth Union members and students on summer break:* a young workforce that absorbs technology extremely quickly and is highly energetic (experience in Mường Chanh commune, Sơn La province).

2.3. Phase 3: Horizontal commune-wide rollout

After the training, the commune People's Committee should officially launch a campaign to complete plantation-area data for the whole commune. Village management boards take the lead, assigning specific household clusters to course trainees and directly tracking progress on the digital map. Most standard data- collection tools allow managers or survey participants to follow implementation progress on a satellite-map interface. When plots with overlapping boundaries or area discrepancies are detected, the village management board and commune technical officers are responsible for following up and supporting trainees and residents to return to the field to re-measure and correct the plot's polygon coordinates (Figure 6).



Figure 6. Examples of plots that had to be redrawn because boundaries did not match or overlapped

Village management boards are also responsible for collecting data on behalf of households in the village (where households have no tech-savvy young members) or, where possible, providing hands-on training so that residents can participate directly and collect the data for their own coffee plots themselves (Figure 7).





Figure 7. (Left) Trainees in Nậm Lầu commune, Sơn La province holding a training session to show coffee-growing households in Nong Ten village how to use the software; (Right) another group of trainees from Nậm Lầu commune conducting fieldwork to collect data for Nà Kẹ village

During commune-level training, trainers identify outstanding, enthusiastic trainees who are proficient with the devices to form “Mobile Task Forces”. These task forces serve as reinforcement personnel, providing extra support to villages with very large coffee areas or limited capacity.

The model implemented in the pilot communes provides invaluable lessons for horizontal replication to other communes. High-performing mobile task teams and village management boards make the best “ambassadors” to advocate, guide, and take part in hands-on training for villages in other communes. In Nậm Lầu commune, Sơn La province, for example, several trainees who are village heads coined the phrase “making a birth certificate for the coffee plots” to explain to fellow villagers the purpose and importance of collecting data on each coffee plot. Such clear, to-the-point explanations are creative touches that few experts or trainers would think of. This further underscores the importance of socializing the planting-area data-collection process so that people can participate actively and be empowered in building knowledge and capacity.

Box 3. Data processing and cleaning

Real-time checks: Commune and provincial technical officers should continuously monitor the online data-management system throughout collection to detect boundary-overlap errors, then immediately notify the field teams to correct them on the spot, reducing the burden of raw-data processing later.

Decentralized management: Commune officials manage data within their commune; provincial officials consolidate it province-wide. Work with technical experts to build access-control features that let residents and village management boards access and look up their own data, increasing transparency and ownership of information. The network of technical officers and master trainers at the provincial and commune levels should provide continuous technical support (covering the mobile data-collection software, EUDR-related rights and interests, etc.) to trainees and farming households throughout implementation.

Forestry risk assessment: Proactively overlay the newly collected planting-area data with the province's three-forest-category map data to detect early any planting areas at risk of encroaching on forest land, enabling enterprises and government to prepare proactive responses.

3. Difficulties and recommendations for improvement

Plantation-area data collection — undertaken amid shortages of information, infrastructure, and official guidance — posed no small number of difficulties and challenges for the two provinces. Most of these challenges revolve around two main factors: the data-collection tool and field-coordination skills at commune scale (for example, each commune in Sơn La recorded hundreds of residents taking part in field data collection during the wide-scale rollout).

Regarding the data-collection tool: after three months alongside the four communes in the two provinces, we found that the tool applied[6] still has many limitations. Many features reveal technical faults or shortcomings only once data collection accelerates rapidly in both scale and complexity. Using a free tool compounds the difficulty, because neither the research team nor the provinces has any authority or ownership over its design or over technology upgrades to respond promptly to needs arising from the field. This major challenge forced the commune-level management system, with Forest Trends' support, to adapt flexibly through organizational and management solutions.

For example, in Nậm Lầu commune, by the end of 4 August 2026 more than 9,500 plots had been collected (equivalent to roughly 50% of the commune's total coffee-growing area). Although the total number of plots had not yet exceeded the maximum limit set by the software developer for each dataset (10,000 plots), certain features — notably real-time viewing and tracking of collected plots, and deletion of erroneous plots — began to show operational difficulties. In response, Forest Trends supported the Nậm Lầu commune government in splitting the dataset by village cluster. This approach reduced the load on the software and ensured the system could retrieve and process information stably. In essence, although the data are separated at the collection stage, they can be fully merged for cleaning and consolidation for reporting purposes. The solution did, however, add steps to the operational workflow. This requires commune officials not only to upgrade their data-cleaning and data-management skills, but also to proactively control the entire collection process to avoid overlap between different datasets. Inadvertently, the process became a capacity-building opportunity for commune governments and officials, honing their technical skills and strengthening their initiative in local governance.

Until Viet Nam fully masters, or allocates budget for, a collection tool of its own — and until the processes for collecting, cleaning, and managing data are optimized and standardized nationally — technological shortcomings like those above should likely keep arising. It must be clearly recognized that technology is not a 'master key' that solves every data-collection and data-management problem, especially for a strategic and sensitive data domain such as plantation-area data.

[6] *The Open Foris Ground tool, developed by the Food and Agriculture Organization of the United Nations (FAO). https://www.openforis.org/ground/*

4. Conclusion

The pilot implementation in four communes of Điện Biên and Sơn La provinces confirms that community-based planting-area data collection is the right direction, though it still needs continued refinement to further improve data efficiency and accuracy. To control output data quality, localities must anticipate and proactively prepare responses to a whole range of field-specific factors, such as fragmented terrain, erratic weather, the thoroughness of pre-field preparation, the management and coordination capacity of commune governments, and the practical teamwork skills of the trainees.

Even so, practice from the training courses in the four pilot communes has convincingly demonstrated that the internal strength of the commune-level political system, villages, and local communities is an immensely powerful and reliable resource. While residents will still need regular technical support to consolidate and enhance their technological capabilities, their potential for self-reliance is very large. Real-world evidence from many villages in Nậm Lầu and Mờng Chanh communes (Sn La province) shows that many village management board members had previously been contracted by coffee purchasing, processing, and exporting enterprises to directly measure and build plot-level planting-area data for each farming household on those enterprises' behalf. This once again confirms the existing capacity and rapid responsiveness of local human resources when given appropriate direction and empowerment.

With the enforcement deadline of the EU's EUDR fast approaching, socializing community-based planting-area data collection is the most feasible, most cost-effective, and most sustainable solution for mountainous provinces with limited resources and budgets. Moreover, the model is by no means limited to coffee: it can be extended to all other key crops affected by the EUDR — rubber and timber, as well as fruit and industrial crops (such as macadamia) — in service of strategic state management. In fact, during the pilot itself, Điện Biên province integrated data collection to digitize areas of coffee intercropped with macadamia, and plans to extend the model to the livestock sector as well.

More than a stop-gap trade response, this approach is the key for localities to move toward technological self-mastery and ownership of clean data. Building the self-reliance of farmers and local communities not only helps protect sustainable livelihoods, but also strengthens bargaining power and affirms the reputation and responsibility of Vietnamese agricultural products in the global supply chain.

Tài liệu này được thực hiện với sự hỗ trợ tài chính của Vương quốc Anh. Các thông tin đưa ra trong tài liệu này là của tác giả và không phản ánh quan điểm của Forest Trends và nhà tài trợ.

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