AM 002

Tool for Assessment of Historic Deforestation on Small-scale Agroforestry

Version 1.0 – October 2024



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1 Summary

This tool for 'Performing Deforestation Assessment on Small-scale Agroforestry v1.0' describes the procedures for assessing whether a *plot* will pass or fail the eligibility criteria associated with *deforestation assessment* within small-scale *agroforestry* projects. *Plots* with tree cover loss 5 years prior to *plot* onboarding will not be considered eligible and are therefore not able to participate in the *Acorn program*. This tool is used to determine whether *deforestation* has taken place on a *plot*. This tool is applicable to *Acorn projects* that apply small-scale *agroforestry* practices.

2 Sources

This tool partially follows procedures from the following tool:

• **AR-TOOL14** Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities v 4.2.

3 Definitions

Definitions used in this module follow the latest version of the Acorn Glossary available on the <u>Acorn website</u>.

4 Applicability Conditions

For this tool, the applicability conditions of the Acorn Methodology **AM-001 v2.0** should be met.

5 Procedures

This *deforestation assessment* tool is built on the Hansen Global Forest Change product (Hansen et al., 2013), land cover land use maps (Van Tricht et al., 2023, Sirko et al., 2021) or alternative global forest inventory data source. The Hansen dataset is preferred as it allows for transparency and repeatability of the assessment. Following Hansen, *deforestation* can be identified when a stand-replacement disturbance or complete removal of tree cover canopy at 30m pixel resolution scale appears. External land cover and land use maps are used to refine the forest baseline, to exclude non-forest areas with tree cover. To overcome the potential errors in the dataset, we provide an option for Local Stakeholders to submit evidence if detected tree cover loss is due to natural causes or certain allowed management practices (Table 1). Applying this approach provides continuous and reliable forest change monitoring

at a global scale. This ensures that the *deforestation assessment* can be applied globally with acceptable accuracies and for the required temporal period dated back to 2001.

This *deforestation assessment tool* is designed based on satellite imagery (remote assessment) and *Local Stakeholders* or experts (manual assessment) information. A flow chart illustrating the approach is presented in Figure 1.

- This process starts with all *plots* labeled as 'new' or marked as 'inactive' in the past. *Plots* that failed the deforestation assessment in the previous year are re-assessed after 1 year.
- 2. For each of these *plots*, Acorn assesses whether the *plot* contains natural forested land 5 years before plot onboarding. Forests are lands with a tree canopy cover of more than 60 percent, which are not primarily under agricultural or urban land use. If 'no' the plot passed the assessment immediately and it is labeled 'active'.
- 3. If the *plot* contains natural forested land, Acorn assesses whether *deforestation* occurred in any of these forested area within the plot within the last 5 years before plot onboarding. If 'no' the *plot* passed the assessment immediately and it is labeled 'active'.
- 4. If the criteria in the previous steps are not met, *Local Stakeholders (i.e., Participants or community members)* who are familiar with the *project area* may submit evidence to prove that *deforestation* has occurred due to natural events (e.g., hurricanes, flooding, natural forest fire, etc.) or certain allowed management practices (e.g., thinning or partial felling) (Table 1). This evidence is evaluated by Acorn. In such instances, these *plots* may overrule the *deforestation assessment* and only after acceptance of Acorn be allowed to take part in the *Acorn project*.



Figure 1. Process overview for remote and manual deforestation assessment.

The *Local Partner* has an opportunity to overrule a deforestation check failure if they believe the *Participant* did not undertake deforestation activities but instead the failure was due to a natural event (e.g., wildfire) or an acceptable non-natural event displayed in Table 1 below. If a *Participant* does indeed fail the deforestation check and an overrule is not granted, they will remain onboarded on the Acorn platform but will be clearly marked ineligible to generate CRUs.

Natural/ Non- natural	Type of cause	Event	Overrule possible	Evidence examples
Natural	Direct natural cause (environmental stresses)	Tree loss through a forest fire	Yes	Photographs, video, witness statement, news articles, or research papers- eligible if plausible
	Direct/ Indirect natural cause	Tree damage (loss of productivity) through floods, droughts, or pests	Yes	Photographs, video, witness statement, news articles, or research papers- eligible if plausible
		Desertification of land natural cause (drought heat or low temperatures)	Yes	Photographs, video, witness statement, news articles, or research papers- eligible if plausible
	Indirect natural cause	Unproductive crops (old age)	Yes	Photographs, video, witness statement, news articles, research papers, production report- eligible if plausible
Non- natural	Human cause	Desertification of land anthropogenic cause (chemical dump)	No	Not applicable
		Illegal and unsustainable logging	No	Not applicable
		Fuelwood harvesting	No	Not applicable

Table 1. Scenarios resulting in a deforestation check failure where overrule is/isn't possible.

	Thinning or partial felling (i.e., the complete removal of some trees or some parts of the tree to make room for the growth of other trees)	Yes	Photographs, video, witness statement, news articles, or research papers- eligible if plausible
	Removal of dead, diseased or unproductive trees (i.e., not able to provide benefits such as fruit or shade anymore)	Yes	Photographs, video, witness statement, or research papers- eligible if plausible
	Extensive crop renewal (e.g. coffee crops)	Yes	Photographs, video, witness statement, receipts, or research papers- eligible if plausible
	Extensive clearing (for agriculture land or livestock ranching)	No	Not applicable
	Slash and burn agriculture	No	Not applicable
	Infrastructure of mining projects	No	Not applicable
	Urbanization	No	Not applicable

6 Parameters

Not applicable for this module, there are no equations.

7 References

Clean Development Mechanism, United Nations Framework Conventions on Climate Change (2015) 'AR-tool 14: Estimation of carbon stocks and change in carbon stocks of trees and shrubs in A/R CDM project activities,' *UNFCCC Methodologies, 04.2*. <u>https://cdm.unfccc.int/methodologies/ARmethodologies/tools/ar-am-tool-14-v4.2.pdf</u> (Accessed: October 24, 2023).

Hansen, M.C. *et al.* (2013) 'High-Resolution Global Maps of 21st-Century Forest cover change,' *Science*, 342(6160), pp. 850–853. <u>https://doi.org/10.1126/science.1244693</u>.

Van Tricht, K., Degerickx, J., Gilliams, S., Zanaga, D., Battude, M., Grosu, A., ... & Szantoi, Z. (2023). WorldCereal: a dynamic open-source system for global-scale, seasonal, and reproducible crop and irrigation mapping. Earth System Science Data, 15(12), 5491-5515.

Sirko, W., Kashubin, S., Ritter, M., Annkah, A., Bouchareb, Y. S. E., Dauphin, Y., ... & Quinn, J. (2021). Continental-scale building detection from high resolution satellite imagery. arXiv preprint arXiv:2107.12283.