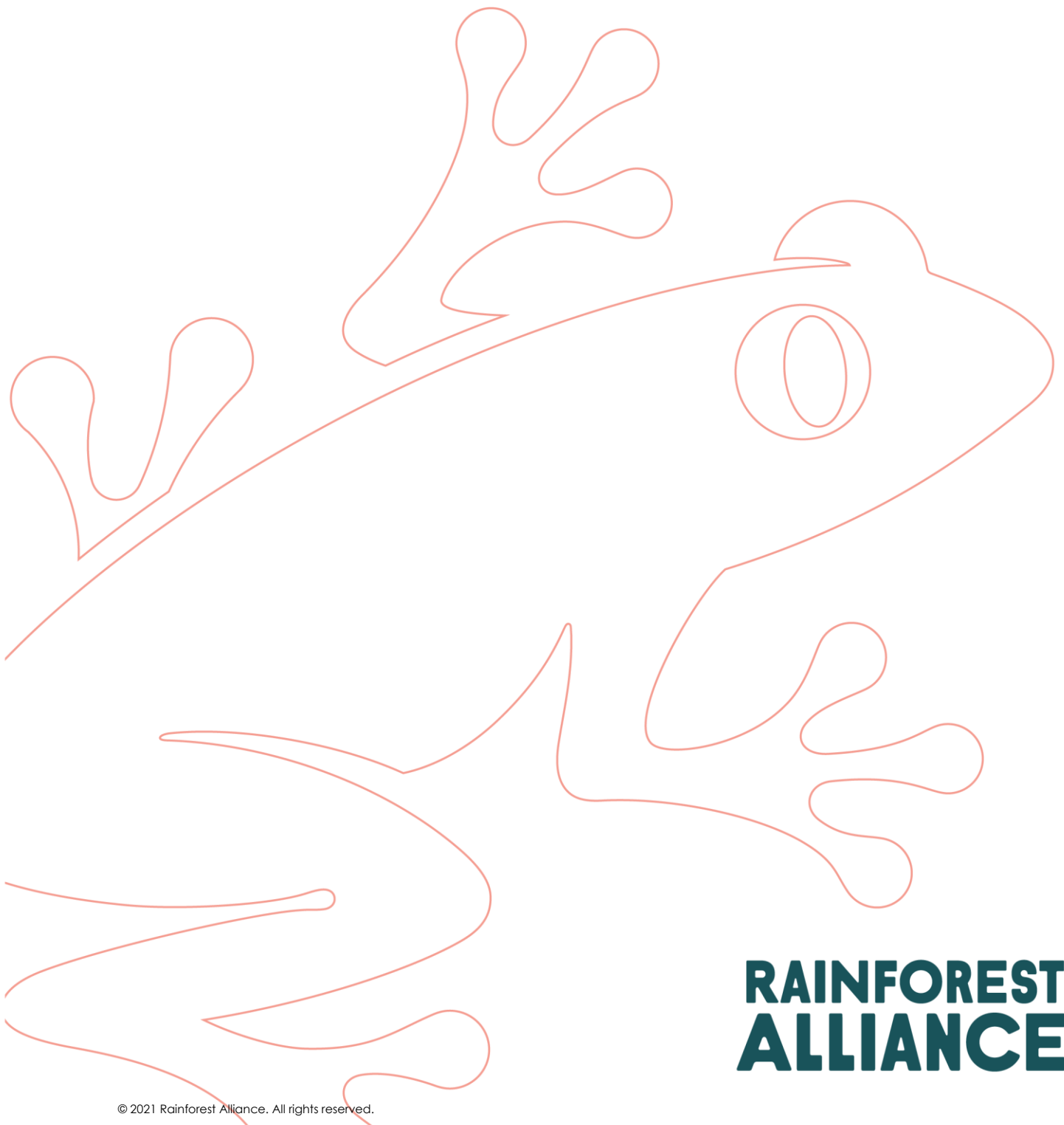


ANNEX S17

Collecting Geolocation Data

Version 1.1



**RAINFOREST
ALLIANCE**



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For any question related to the precise meaning of the information contained in the translation, please refer to the official English version for clarification. Any discrepancies or differences in meaning due to translation are not binding and have no effect for auditing or certification purposes.

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| Replaces: | | | |
| SA-G-SD-5-V1 Guidance Document D: Geolocation and Risk Maps | | | |
| Applicable to: | | | |
| Farm Certificate holders | | | |
| Country/Region: | | | |
| All | | | |
| Crop: | | Type of Certification: | |
| All crops in the scope of the Rainforest Alliance certification system; please see Certification Rules. | | Farm Certification | |

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1. PURPOSE

Accurate geolocation data is essential to ensure compliance with the 2020 Rainforest Alliance Sustainable Agricultural Standard (referred to as “the Standard” in this document). Deforestation and agricultural production in Protected Areas are important risk topics for many stakeholders in the Rainforest Alliance certification system, and appropriate assurance mechanisms for these issues rely on accurate mapping of farms. Mapping the boundaries of farms is also the best way to obtain an accurate measurement of the farm area, which is the basis for estimating certified yield and appropriate quantities of agrochemicals.

This document details *how Certificate Holders must collect the needed information to comply with the geolocation data requirements* of the Rainforest Alliance Sustainable Agriculture Standard Farm Requirements. In addition, this document must also be used by Certification Bodies to verify geolocation data provided by the Certificate Holder during the audit process.

Please note that some of the tools and IT systems to be used for geospatial data collection and analysis are still under development. Further guidance will be provided as soon as these are ready to be used.

2. ABBREVIATIONS

- CB:** Certification Body
- CH:** Certificate Holder
- GIS:** Geographical Information System
- RACP:** Rainforest Alliance Certification Platform

3. DEFINITIONS

Farm unit: A piece of continuous land that is part of a farm. A farm unit can include both agricultural and non-agricultural land with buildings, facilities, water bodies, and other features. See figure below for the illustration of this explanation.

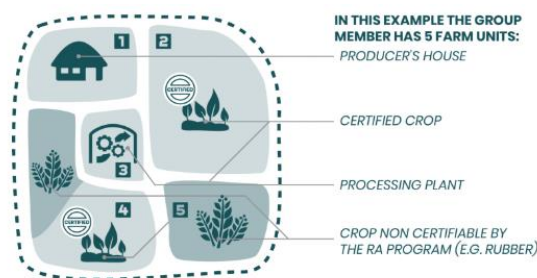


Figure 1. Illustration of a farm unit

Farm: All land and facilities used for agricultural production and processing activities under the geographical scope of the farm applicable for Rainforest Alliance certification. A farm may be composed of several neighboring or geographically separate farm units within one country, provided that they are under a common management body. All farms and farm units falling within this geographical scope must comply with the 2020 Rainforest Alliance Sustainable Agriculture Standard, even when a different crop from the certified one is also cultivated (e.g. farm/farm unit with a plantation of rice belonging to a producer who is part of a certified group for coffee that falls within the same geographical scope).

A farm may be composed of several neighboring or geographically separate units of land within one country if they are under a common management body.



Geolocation data: Data that identifies the geographic location of farms and boundaries of farms, farm units, and other facilities of the Rainforest Alliance certificate holders. Geolocation data is represented by coordinates generally collected through Global Positioning Systems (GPS) mapping using either individual location points (including envelopes) or polygons which define the full boundaries of the relevant area.

Location point: A pair of latitude/longitude coordinates collected through Geographic Information Systems (GIS) Data. The location point is a single data point. It can be used to represent the location of a farm/farm unit when no polygon information is available. Location points should be taken at the center of the farm unit. If a farm consists of multiple farm units, the location point should be taken at the center of the largest farm unit.

Polygon (geographic polygon): A geographic boundary that encloses an area representing a farm/farm unit. Such polygons can be mapped and coded with essential data about the farm (referred to as attributes), such as farm ID, farm area (hectares), production area, crop, owner, certification status.

Risk maps: Maps showing risk indication levels for key topics related to the Rainforest Alliance certification program. Risk maps for deforestation and encroachment in protected areas are made by combining geolocation data provided by certificate holders with external maps showing forest layers and protected areas.

4. STANDARD REQUIREMENTS

4.1 Requirements for Geolocation Data

The requirements in the 2020 Rainforest Alliance Sustainable Agriculture Standard regarding geolocation data, and its use to support the protection of natural forest and ecosystems and prevent production in Protected Areas are the following:

Requirement 1.2.12 : Core Requirement

Applicable to: *Group Management*

For 100% of the farms, geolocation data of the largest farm unit with the certified crop is available.

For at least 10% of the farms, this is in the form of a GPS polygon. For all other farms, this can be in the form of a location point.

Please see Annex: S12: Additional Details on requirements for no-conversion

Requirement 1.2.13: Core Requirement

Applicable to: *Large farms part of a group, Individual certificate holders*

A polygon is available of the farm. If the farm has multiple farm units, a polygon is provided for each farm unit.



Requirement 1.2.14: L1: Mandatory Improvement

Applicable to: *Group Management*

Geolocation data is available for 100% of all farm units. At least 30% is in the form of polygons.

Yearly progress on the indicators needs to be shown, corresponding to the target to reach at the end of year three.

Indicator:

- % of farm units with geolocation data
- % of farm units with polygons

Requirement 1.2.15: L2: Mandatory Improvement

Applicable to: *Group Management*

1.2.15 Polygons are available for 100% of the farm units.

Yearly progress on the indicators needs to be shown, corresponding to the target to reach at the end of year six.

Indicator:

- % of farm units with geolocation data
- % of farm units with polygons

*Improvement Level:

Level 1 (L1) after three years of certification.

Level 2 (L2) after six years of certification

4.2 Requirements for Protected Areas, natural forests and ecosystems

Requirement 6.1.1 Core Requirement

Applicable to: *Small farms and Large farms part of a group, Individual certificate holders*

From January 1st 2014 onward, natural forests and other natural ecosystems have not been converted into agricultural production or other land uses.

Please see Annex: S12: Additional Details on requirements for no-conversion

Requirement 6.1.2: Core Requirement

Applicable to: *Small farms and Large farms part of a group, , Individual certificate holders*

Production or processing does not occur in protected areas or their officially designated buffer zones, except where it complies with applicable law.



5. COLLECTION AND USE OF GEOLOCATION DATA

CHs must provide geolocation data to the Rainforest Alliance Certification Platform (RACP) in compliance with the Standard requirements and Certification and Auditing Rules.

Specifically:

- **Certification Rule 1.4.12:** All farm CHs shall provide geodata in the RACP based on which the RACP will provide geodata registration risk maps, and applicable mitigations actions (for more information on geodata, see Annex: Guidance D: on Geolocation data requirements and geodata risk maps).

CHs must provide and/or update their geolocation data annually before the transition audit and each (re)certification and surveillance audit. This geolocation data will be used by Rainforest Alliance to produce the risk maps for deforestation and protected area based on the geolocation data provided by CHs. CHs, therefore, need to collect accurate information. Internal inspectors must review and verify geolocation data which will also be checked during the external audit process.

CHs may spread the collection of polygon data to the required percentage and format across the period before the certification audit. Therefore, CHs should include yearly targets for geolocation data collection in the Management Plan. These targets must prioritize data collection from high-risk farms. CHs can use Rainforest Alliance risk to target high-risk areas when planning the collection of polygons. Risk targeting will be verified during the external audit.

CHs are expected to use the deforestation and encroachment risk assessments provided by the Rainforest Alliance to support their implementation of the standard requirements by implementing appropriate mitigation actions as required by the Certification Rules:

- **Certification Rule 1.4.13** For every risk identified the CH shall implement mitigation actions. Mitigation actions provided by any Rainforest Alliance tool are strongly recommended, but the CH may change them if other actions are considered more appropriate to address the risk.

Risk management measures that need to be implemented to address the risks of deforestation and encroachment in protected areas must be included in the CH's own **Risk Assessment** and **Management Plan**. Better geolocation data provided by the CH (e.g. polygons instead of location points) will result in more accurate risk maps and better insights to identify mitigation measures. Identification and implementation of mitigation actions will also be checked during the external audit process¹

¹ CBs are also required to use the risk maps as indicated in the Certification and Auditing Rules AR5 and AR6





6. GEOLOCATION DATA COLLECTION REQUIREMENTS

CHs are responsible for providing geolocation data in the form of location points and polygons. In the case of farm units, non-agricultural land should also be included, such as buildings and facilities, conservation set-asides (such as riparian buffer zones), water bodies, and any other features related to the certified operations.

Below is a summary of the methods that CHs can use for collecting location points and polygons. Additional step-by-step instructions are available in **Guidance D: Geolocation data and Risk maps**. Geolocation data must meet all the format requirements mentioned in **Chapter 7** of this document before being uploaded into the RACP.

The diagram below shows 3 cases of farms with one or multiple farm units and explains where the geolocation data must be collected. Please note that farm units don't necessarily need to be next to each other. They can also be widely dispersed and/or at a distance from one another.

| | |
|--|--|
| <p>Case 1</p> |  |
| <p>Case 1: Farm with a single farm unit. The CH must collect the geolocation data (points or polygons) from the center of that farm unit.</p> | |
| <p>Case 2</p> |  |
| <p>Case 2: Farm with 5 farm units: the largest farm unit is growing a certified crop. To comply with requirement 1.2.12, the CH must collect the geolocation data in the center of the largest farm unit which has the certified crop (farm unit number 4). To comply with improvement requirements, - 1.2.14 L1: For all farm units <i>geolocation data</i> must be provided. - 1.2.15 L2: For all farm units a <i>polygon</i> must be provided. geolocation data must be collected in the center of the remaining farm units, including those not growing certified crops.</p> | |




| | |
|--|--|
| <p>Case 3</p> |  |
| <p>Case 3: Farm with 3 farm units: the largest farm unit is not growing a certified crop.</p> <p>To comply with Requirement 1.2.12, the CH must collect the geolocation data in the center of farm unit number 2 which is the largest farm unit growing a certified crop on the farm.</p> <p>To comply with improvement requirements:</p> <p>1.2.14 L1: For all farm units <i>geolocation data</i> must be provided.</p> <p>1.2.15 L2: For all farm units a <i>polygon</i> must be provided. geolocation data must be collected in the center of all the remaining farm units, including those not growing certified crops.</p> | |

Figure 2. Geolocation data collection requirements inside the farms

Please note that the requirement to provide geolocation data of farm units with non-certified crops will not be mandatory for the transition audits

6.1 LOCATION POINTS

Location points must be collected following the requirements below:

1. Coordinates must be taken as close as possible to the center of the farm/farm unit, considering the internal farm conditions (high cliffs, rivers, irregular and dangerous terrain).
2. The location of the point must be marked by the person taking the coordinates (e.g. stick in the ground, marking a nearby tree etc.) This is to ensure that the same location is used by internal inspectors or auditors to verify the data.
3. The coordinates must be reported in latitude and longitude in that order.
 - a. Latitude: Are the coordinates determining the North / South position in degrees from the equator, (+) would be North of the equator (-) would be South of the equator
 - b. Longitude: Are the coordinates determining the East / West position in degrees of the location from the Greenwich meridian, (+) would be East, and (-) would be West of the Greenwich meridian.
 - c. Further information on latitude and longitude can be found here.
 - d.
4. Transposed recording of the latitude and longitude values should be avoided (See **Guidance D. Geolocation data and Risk Maps** for more information). The coordinates must be reported in decimal degrees format with 4 decimal points (i.e. Latitude: 9.7611; Longitude: -84.1872). If you have coordinates in degrees, minutes, seconds, these can be converted into decimal degrees in 2 ways:
 - a. using an online tool such as <http://www.latlong.net/degrees-minutes-seconds-to-decimal-degrees> or https://www.engineeringtoolbox.com/utm-latitude-longitude-d_1370.html
 - b. converting to decimal degrees (e.g. in Excel) by applying the following equation: $\text{Decimal degrees} = \text{degrees} + \text{minutes}/60 + \text{seconds}/3600$
5. The decimal degree coordinates must have the correct + or - sign. Points in the southern and western hemispheres have negative latitudes (-); Points in the northern



and eastern hemispheres have positive longitudes (+). However, it is unnecessary to include a “+” sign, e.g. Latitude: 9.7611; Longitude: -84.1872.

6. The coordinates must be stored in number format and cannot include any non-numerical characters such as the degrees symbol (°). This can be checked in Excel using the ISNUMBER() and the NUMBERVALUE() functions.
7. The coordinates must be provided in the RACP or any other tool indicated by the Rainforest Alliance and using the template required by the Rainforest Alliance.

Further information on appropriate technologies to collect location point data is available in **Guidance D. Geolocation data and risk maps**.

6.2 POLYGONS

Polygons must always be provided by single/multi-farm CHs. Groups must provide polygon data for an increasing proportion of farm units over time, from 10% in the first year of certification to 100% in improvement L2 after six years.

Polygons can only be submitted directly in the RACP from September 2021. Before this date, all polygons must be provided to the CB outside the RACP (via email for example).

For the core requirement 1.2.12, polygons must be provided for the **largest farm unit with the certified crop** if the farm has multiple farm units (see Figure 2 above).

If the group includes both small and large farms, the CH must provide the required percentage of polygons for the small farms (10%, 30%, or 100%) **and** polygons for **all the large farms** as indicated in 1.2.13. The polygons of the large farms cannot be part of the percentage of polygons mentioned in 1.2.12, 1.2.14, and 1.2.15.

Polygons can be mapped and coded with essential data about the farm (referred to as attributes), such as farm ID, farm area (hectares), production area, crop, owner, certification status. To submit polygons in the RACP each polygon must have the farm unit ID included.

CHs can collect polygons using either of the two methodologies set out below. For detailed instructions on how to do this, refer to **Guidance D: Geolocation data and Risk Maps**:

6.2.a. Polygons based on reference location points

Polygon data shall not be collected based only on deskwork because of the high risk of imprecision. As a minimum, **all reference location points need to be collected in the field**, and these can then be used to draw the farm/farm unit polygons (desktop).

6.2.b. Polygons collected in the field

Farm boundary polygons collected in the field should be reviewed in a map such as a GIS software or Google My Maps or Google Earth to identify and correct any inconsistencies (the Guidance documents with more information on how to use these tools is available online). Farm units should not overlap. Farm units next to each other should share a common boundary. Boundaries that are known to follow features that are easy to see in the imagery (such as roads and rivers) can be used to finetune the polygon mapping. Before submitting the polygons to the RACP the correct farm unit ID must be included with the polygon.



7 DATA REPORTING

Table 1 below indicates the files and accepted formats that must be used when reporting geolocation data in the RACP as per the standard requirements.

| Standard requirement | Files to be submitted | Accepted format |
|---|--|---|
| 1.2.12 (100% of geolocation data at farm level) | <p>One file with the location points* for 90% of the farms.</p> <p>*Point collected in largest farm unit with certified crop, in case of multiple farm units.</p> | <ul style="list-style-type: none"> Annex S13: Group Member Registry (GMR) template (using the columns for latitude and longitude). |
| | <p>One file with the polygons* for at least 10% of the farms</p> <p>*Polygon collected in largest farm unit with certified crop, in case of multiple farm units.</p> | <ul style="list-style-type: none"> KML or GeoJSON. |
| 1.2.13 | <p>One file with the polygons of the farm, including all farm units.</p> | <ul style="list-style-type: none"> KML or GeoJSON. |
| 1.2.14 (L1) (100% of geolocation data at farm unit level) | <p>One file with the location points for 70% of the farm units.</p> | <ul style="list-style-type: none"> Annex S13: Group Member Registry (GMR) template (using the columns for latitude and longitude). |
| | <p>One file with the polygons for at least 30% of the farm units.</p> | <ul style="list-style-type: none"> KML or GeoJSON. |
| 1.2.15 (L2) | <p>One file with the polygons for 100% of the farm units.</p> | <ul style="list-style-type: none"> KML or GeoJSON. |

Table 1. Accepted formats and templates for geolocation data

Please note:

- I. When large farms are part of a group, the requirement applicable to these large farms is 1.2.13, and the provided file shall contain the polygons of **all** the large farms part of the group.
- II. Groups with a mix of small farms and large farms must provide the files mentioned in standard requirements 1.2.12 / 1.2.14 / 1.2.15 **and** 1.2.13. This means that the CH needs to provide 3 files:
 - a. GMR with the points of the farms/farm units applicable
 - b. KML or GeoJSON with the polygons of the smallholder farm/farm units and
 - c. KML or GeoJSON with the polygons for the large farms part of the group
- III. When preparing for the first audit, the CH must provide the applicable files mentioned in Table 1 above.
- IV. A CH can only provide additional files containing polygons if they already have an approved GMR in the RACP

When providing the location points, the file shall have the following data points:

- ✓ Group Member's identification number,
- ✓ Farm National ID
- ✓ Farm internal ID (if the national ID is not available)
- ✓ Farm area
- ✓ Farm unit ID
- ✓ Farm unit area (for farm units)

Note: KML or GeoJSON files provided must at least be accompanied with the Farm unit ID.



7.1 GPS DATA REPORTING FOR APPLICATION FOR MINOR EXCEPTIONS FOR INFRASTRUCTURE MANAGEMENT

The standard allows for limited conversion of land for infrastructural management under specific conditions as set out in **Annex S12: Additional details on Requirements for No-conversion**.

CHs applying for a minor exception for conversion for infrastructure management will need to provide geolocation data to the CB before the audit in the form of;

- I. a polygon of the certified area
- II. a polygon of the converted area

CHs also need to demonstrate that the conversion was, or is planned to be, below 1% of the certified area.