STANDARD OPERATING PROCEDURE 2 (SOP2): RESPONSE DESIGN

Version	*1.1*	**Date of Issue**	14/06/2021
Purpose	This SOP explains how to assign labels (e.g., a land cover / land use class) to a sample unit. The response design allows for the best available classification of change for each spatial unit sampled and contains all information necessary to reproduce the process of attribution of a label to the sample unit. The response design lays out an objective procedure that interpreters can follow and that reduces interpreter bias		

Procedure	
Step 1: Specifying the classification scheme	**Sub-step 1a.** The coordinator shall involve the GIS and mapping unit, the inventory and mensuration unit plantation and any other relevant institution to define a classification scheme with detailed definitions and review it together with the interpreters. The classification scheme is consistent with the national land cover / land use definitions. In cases where the classification scheme definition is different from the national definition, a justification is provided. The Coordinator documents the classification scheme in a tree-diagram using Form 2. The form shall be stored with the climate change unit, RMSC, and ICT of the forestry commission. **Sub-step 1b.** The Coordinator documents the detailed definitions for each class using Form 2. The form shall be stored with the climate change unit, RMSC, and ICT of the forestry commission.
Step 2: Specifying the data sources	**Sub-step 2a.** The coordinator shall involve the GIS and mapping to create an overview of all satellite imagery used for the interpretation, including the data periods for each sensor and review it together with the interpreters. The overview is recorded using Form 2. The form shall be stored with the climate change unit, RMSC, and ICT of the forestry commission.
Step 3: Specifying the unit's spatial support	**Sub-step 3a.** Based on the available data sources, the Coordinator shall involve the GIS and mapping, the inventory and mensuration units of RMSC to define the assessment unit and document it with an illustration using Form 2. The form shall be stored with the climate change unit, RMSC, and ICT of the forestry commission.
Step 4: Specifying the interpretation key	**Sub-step 4a.** The coordinator shall involve the GIS and mapping unit and the inventory and mensuration unit of RMSC, CERSGIS and any other relevant institution to develop a visual guide to help the interpretation of each class of the classification scheme and to illustrate how the land cover or land use feature will look like in the images selected in step 2 and considering the sample unit's spatial support defined in step 3. The visual guide includes examples for all classes and for all data sources used. The form shall be stored with the climate change unit, RMSC, and ICT of the forestry commission and the approved platform for the national forest monitoring system.
Step 5: Specifying the decision tree	**Sub-step 5a.** The coordinator shall involve the GIS and mapping unit, mensuration unit, inventory unit, plantations unit and coordinator of the GHG inventory and any other relevant institution to develop a set of hierarchical rules that help the interpreter assign an overall land use class when the sample is composed of mixed land cover features.

	Sub-step 5b. The Coordinator reflects the rules from sub-step 5a in a decision tree and documents the decision tree using a textual description of the observations that were the basis for building the decision tree, including reference to previous work and illustrations of both the overall decision tree and each of the decisions in the tree. **Sub-step 5c.** The Coordinator reviews the decision tree together with the interpreters and adjusts as necessary. **Sub-step 5d.** The Coordinator stores the form with the final decision tree with the climate change unit, RMSC, and ICT of the forestry commission.
Step 6: Implementing the response design	**Sub-step 6a.** The Coordinator of the assessment chooses a software to be used for data collection and implements the response design by creating the necessary survey questionnaires. Collect Earth has been used to create such a survey. The Collect Earth survey can be modified using the Open Foris Collect software. The existing Collect Earth survey is stored with the climate change unit, RMSC, and ICT of the forestry commission and the approved platform for the national forest monitoring system. **Sub-step 6b.** The Coordinator in coordination with the GIS and mapping unit, mensuration unit, inventory unit, plantations unit and coordinator of the GHG inventory to include an indicator of the confidence of the interpretation when implementing the response design and defines a level for the indicator (e.g., high / low, or high / medium / low or similar). This is defined in a way that all interpreters use the same criteria using Form 2.

Quality management	
QA / QC procedures	The Collect Earth survey is tested by the interpreters before data collection to ensure the built in validation rules and overall survey functions as required. A two-stage approach for the QAQC shall be applied. 1. QAQC shall be applied along every stage of the sample based inventory 2. an independent institution shall be responsible for the overall QAQC at the end of the inventory process.

Version Log

Version	Author/s	Material changes from previous version	Release Date