CHAPTER 1

INTRODUCTION

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1 INTRODUCTION

1.1 INTRODUCTION

The 2013 Revised Supplementary Methods and Good Practice Guidance Arising from the Kyoto Protocol (KP Supplement) describes the supplementary methods and *good practice* guidance for measuring, estimating and reporting of anthropogenic greenhouse gas (GHG) emissions and removals resulting from land use, land-use change and forestry (LULUCF) activities covered by the Kyoto Protocol (KP) for the second commitment period (CP). This document addresses activities under Article 3.3, Forest Management and elective activities under Article 3.4. The supplementary methods and *good practice* guidance of this document are relevant to each Party included in Annex I that have ratified the KP for the second CP and for other countries interested in the updated guidance. This document does not provide *good practice* guidance for LULUCF projects hosted by Parties listed in Annex B (Article 6 projects) and Afforestation/Reforestation projects hosted by Parties not listed in Annex B of the KP (Article 12, Clean Development Mechanism or CDM projects), which are addressed in Section 4.3 of the *Good Practice Guidance for Land Use, Land-Use Change and Forestry* (*GPG-LULUCF*).

To ensure compliance with emission limitation and reduction commitments[1] in the CP, and to meet their reporting requirements under the Kyoto Protocol, Parties are required to provide supplementary information related to LULUCF under the provisions of the KP[2]. This information is required as part of the annual National Inventory Reports (NIR) using Common Reporting Format (CRF) tables to report GHG emissions by sources and removals by sinks. The annual reporting requirement does not imply a need for annual measurements, but Parties are expected to develop systems that combine measurements, models and other tools that enable them to report on an annual basis.

The supplementary information required includes reporting emissions by sources and removals by sinks of CO_2 and other specified GHGs resulting from Article 3.3 and 3.4 activities. These include activities for which reporting is mandatory under Article 3.3, i.e. Afforestation (A), Reforestation (R) and Deforestation (D) that occurred since 1990; and under Article 3.4, Forest Management (FM), and any other Article 3.4 activities elected by the Party. These can include: Cropland Management (CM), Grazing Land Management (GM), Revegetation (RV), and Wetland Drainage and Rewetting (WDR).[3]

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[1] See Article 2.1 of the Kyoto Protocol (http://unfccc.int/resource/docs/convkp/kpeng.pdf)

[2] See Articles 3.3, 3.4, 3.7, 6 and 12 of the Kyoto Protocol and Decisions 16/CMP.1, 15/CP.17, 4/CMP.7, 2/CMP.7, and 2/CMP.8.

[3] LULUCF related requirements are outlined in Decision 16/CMP.1 and Decision 2/CMP.7 (Land use, land-use change and forestry) contained in document FCCC/KP/CMP/2005/8/Add.3, p.3 and FCCC/KP/CMP/2011/10/Add.1, p.13 respectively:

"Afforestation" is the direct human-induced conversion of land that has not been forested for a period of at least 50 years to forested land through planting, seeding and/or the human-induced promotion of natural seed sources.

"Reforestation" is the direct human-induced conversion of non-forested land to forested land through planting, seeding and/or the human-induced promotion of natural seed sources, on land that was forested but that has been converted to non-forested land. For the first commitment period, Reforestation activities will be limited to Reforestation occurring on those lands that did not contain forest on 31 December 1989.

"Deforestation" is the direct human-induced conversion of forested land to non-forested land.

"Forest management" is a system of practices for stewardship and use of forest land aimed at fulfilling relevant ecological (including biological diversity), economic and social functions of the forest in a sustainable manner.

"Cropland management" is the system of practices on land on which agricultural crops are grown and on land that is set aside or temporarily not being used for crop production.

"Grazing land management" is the system of practices on land used for livestock production aimed at manipulating the amount and type of vegetation and livestock produced.

"Revegetation" is a direct human-induced activity to increase carbon stocks on sites through the establishment of vegetation that covers a minimum area of 0.05 hectares and does not meet the definitions of Afforestation and Reforestation contained here.

"Wetland drainage and rewetting" is a system of practices for draining and rewetting on land with organic soil that covers a minimum area of 1 hectare. The activity applies to all lands that have been drained since 1990 and to all lands that have been rewetted since 1990 and that are not accounted for under any other activity as defined above, where drainage is the direct human-induced lowering of the soil water table and rewetting is the direct human-induced partial or total reversal of drainage.

This document builds on methods and guidance provided by the *2006 IPCC Guidelines for National Greenhouse Gas Inventories* (*2006 IPCC Guidelines*) and it replaces Chapter 4 (except Section 4.3 on projects) of the *GPG-LULUCF*. The structure and general content of Chapter 4 of the *GPG-LULUCF* have been maintained wherever possible for reasons of consistency.

By definition *good practice* GHG inventories are those which do not contain overestimates or underestimates so far as can be judged, and in which uncertainties are reduced, as far as is practicable. The words "it is *good practice* to..." indicate that the guidance that follows contributes to producing GHG inventories consistent with *good practice*.

Relationship between UNFCCC and KP reporting:

The information to be reported under the KP is supplementary to the information reported under the United Nations Framework Convention on Climate Change (UNFCCC). A Party included in Annex I to the KP does not need to submit two separate annual inventories but is required to provide supplementary information under the KP, within the inventory report.[4] Each Party included in Annex I to the Convention which is also a Party to the KP will be subject to the review of submitted information in accordance with relevant decisions under Article 8 of the KP.

National circumstances, and specifically the technical details of the GHG reporting systems put into place by each country, will determine the sequence in which the reporting information is compiled. In theory, it is possible to start with the UNFCCC inventory (with the additional spatial information required for KP reporting) and expand it to the KP inventory, or it is possible to use a national system that generates the information for both UNFCCC and KP reporting at the same time.

For example when a Party that has elected CM under Article 3.4 prepares its UNFCCC inventory for Cropland, it is efficient to use the same geographical boundaries for stratification (Section 2.2.2). When preparing the supplementary information to be reported under the KP, the Party would delineate those UNFCCC Cropland areas that originated from forests since 1 January 1990 (Chapter 5.3, Volume 4 of *2006 IPCC Guidelines*, Land converted to Cropland), report these under D according to Article 3.3, with the exception of those lands that have been cleared under the provision of Carbon Equivalent Forest Conversion (CEFC)[5] which should be reported under FM. All remaining UNFCCC Croplands will be reported under CM.

This document covers supplementary estimation and inventory reporting requirements needed for accounting under the KP in the second CP. Estimation refers to the way in which inventory estimates are calculated, reporting refers to the presentation of estimates in the tables or other standard formats used to transmit inventory information, and accounting refers to the way the reported information is used to assess compliance with commitments under the KP. This document does not address the implementation of accounting rules as agreed in relevant decisions of the Conference of the Parties serving as the Meeting of the Parties (CMP) of the KP (such as caps on accounted removals from FM, annual vs. CP accounting and other specific provisions related to accounting).

In this document the terms "units of land" and "land" are combined. Chapter 4 of the *GPG-LULUCF* uses the former in the context of Article 3.3 activities and the latter in the context of Article 3.4. This reflects the usage in Decisions 15/CMP.1 and 16/CMP.1, but the methodological treatment of land identification in Chapter 4 of the *GPG-LULUCF* was the same in both cases, so uniting the concepts simplifies the text and avoids the impression that Parties need to treat the cases differently, which is not required and would increase costs.

This document uses the terms "mandatory" and "elective". Mandatory refers to activities defined under Article 3.3, namely AR, and D, as well as FM and those 3.4 activities that were elected by a country in the previous CP. Elective refers to those 3.4 activities that can be elected by a country for the second CP, namely CM, GM, RV if not already elected in the first CP, and WDR.

Parties are encouraged to harmonize UNFCCC and KP estimation in order to increase transparency, accuracy and consistency. For the second CP, Parties are required to use the same definition of forest that they selected for the first CP[6]. It is *good practice* to apply the same forest definition for both UNFCCC and KP reporting. Under the KP Parties are requested to apply a forest definition, within the thresholds of the forest parameters defined by

[4] Article 7, paragraph 1 of the Kyoto Protocol: *Each Party included in Annex I shall incorporate in its annual inventory [...] the necessary supplementary information for the purposes of ensuring compliance with Article 3 [...].*

Article 7, paragraph 2 of the Kyoto Protocol: *Each Party included in Annex I shall incorporate in its national communication, submitted under Article 12 of the Convention, the supplementary information necessary to demonstrate compliance with its commitments under this Protocol.*

[5] See paragraphs 37 – 39 of Annex to Decision 2/CMP.7 contained in document FCCC/KP/CMP/2011/10/Add.1, p.19.

[6] Paragraph 1(f) of Annex I to Decision 2/CMP.8 contained in document FCCC/KP/CMP/2012/13/Add.1, p. 16.

the KP, that is consistent with that used to submit historical information to the Food and Agriculture Organization of the United Nations (FAO) and other international bodies, including the UNFCCC. Where the definitions differ for KP reporting and other reporting, Parties are required by Decision 2/CMP.8 to provide an explanation of why and how such values were chosen, in accordance with Decisions 16/CMP.1 and 2/CMP.7.

Estimation and reporting of GHG emissions and removals from activities defined under Article 3.3 and Article 3.4 are in accordance with Decision 2/CMP.8 on "*Implications of the implementation of decisions 2/CMP.7 to 5/CMP.7 on the previous decisions on methodological issues related to the KP, including those relating to Articles 5, 7 and 8 of the KP*", and should be consistent with methods set out in volumes 1 and 4 of the *2006 IPCC Guidelines* and in the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands (Wetlands Supplement)*[7], any future elaboration of those guidelines, or parts of them, in accordance with relevant decisions of the Conference of the Parties and the CMP. It is *good practice* that for KP estimation and reporting, methods be applied at the same or higher tier as used for UNFCCC reporting.

1.2 OVERVIEW OF STEPS TO ESTIMATING AND REPORTING SUPPLEMENTARY INFORMATION FOR ACTIVITIES UNDER ARTICLES 3.3 AND 3.4

This section gives an overview of the steps required to measure, estimate and report anthropogenic emissions by sources and removals by sinks, including non-CO_2 GHG emissions associated with LULUCF activities covered by Articles 3.3 and 3.4 of the KP. This overview is summarized as a flowchart in Figure 1.1. Detailed methods and *good practice* guidance for each individual activity are provided in subsequent Chapters and Sections of this document.

STEP 1: Definitions and parameter values of forests, and hierarchical order of elected Article 3.4 activities.

Parties that have elected any eligible activity under Article 3.4 in a previous CP shall account for[8] the activity during the second CP, and consistently apply the definition of Article 3.4 activities to their national circumstances as was done in a previous CP. Parties decide and report which, if any, additional activities under Article 3.4 they elect for the second CP. It is *good practice* that Parties document, for each elected activity and for FM, how the definitions will be applied to national circumstances. It is *good practice* to choose criteria on how to apply definitions in such a way as to avoid overlap and to be consistent with the guidance provided in the decision tree in Figure 1.2 in Section 1.3.

STEP 1.1: Decide the numerical values of parameters to define "forest" for AR and D activities under Article 3.3 and for FM under Article 3.4[9].

Parties that have already selected the parameters of the forest definition in the first CP are required to apply this definition consistently in the second CP. Parties that have not yet done so need to select the parameters that define forest, i.e., the minimum area (0.05 – 1 ha), the minimum tree crown cover at maturity (10 – 30%), and the minimum tree height at maturity (2 – 5 m). Areas that meet these minimum criteria are considered forest, as are recently disturbed forests or young forests that are expected to reach these parameter thresholds at maturity. The numerical values selected for those parameters cannot be changed during or between CPs. Each Party has to demonstrate in its reporting that selected values are consistent with the information that has historically been reported to the FAO or other international bodies, including the UNFCCC, and if they differ, explain how and why differing values were chosen.

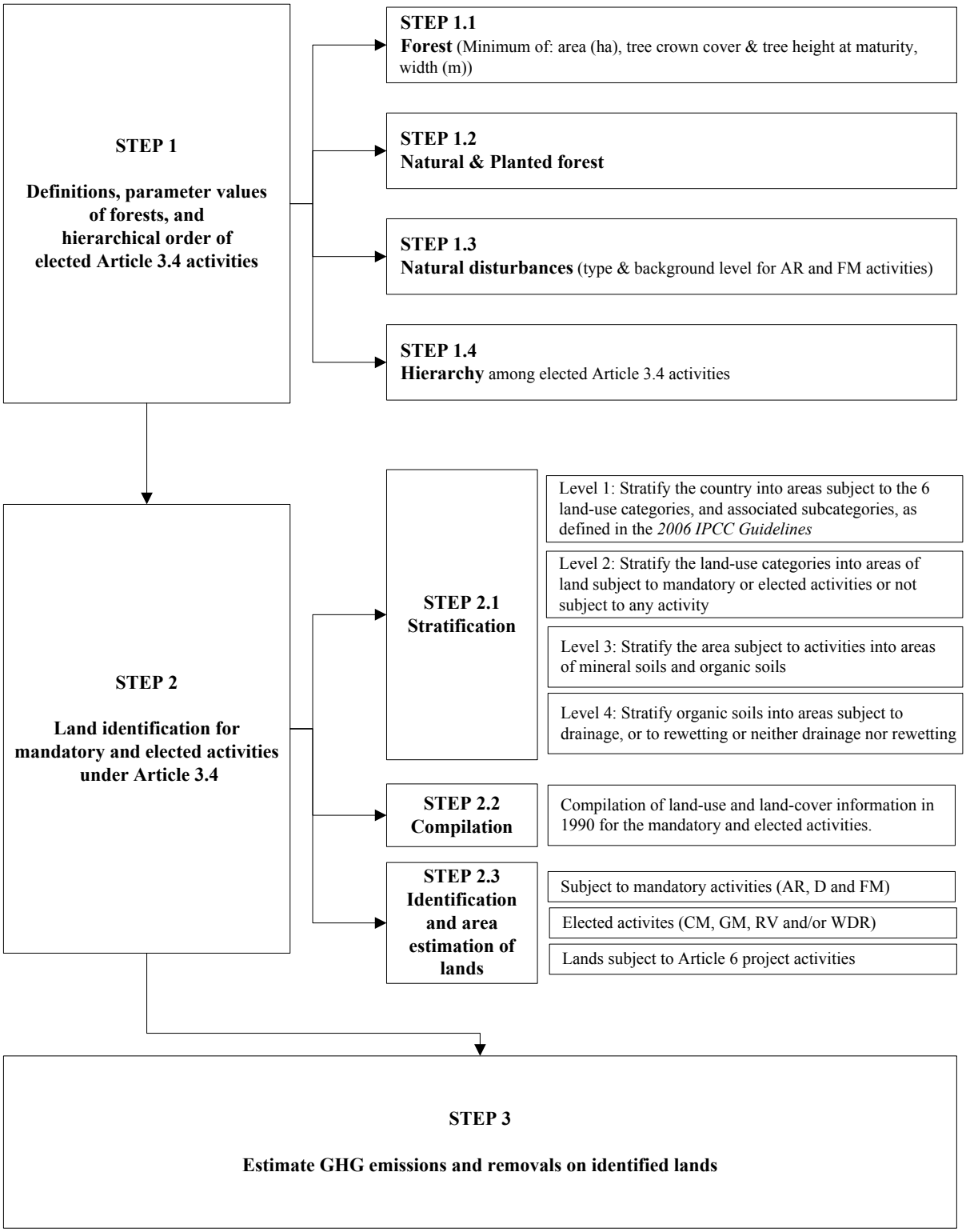
[7] The IPCC also produced the *2013 Supplement to the 2006 IPCC Guidelines for National Greenhouse Gas Inventories: Wetlands* (*Wetlands Supplement*) in parallel to this document in October 2013.

[8] See paragraph 7 of the Annex to Decision 2/CMP.7 contained in document FCCC/KP/CMP/2011/10/Add.1, p. 14.

[9] According to the Annex to Decision 16/CMP.1, paragraph 1(a), *"forest" is a minimum area of land of 0.05 – 1.0 hectares with tree crown cover at maturity in situ (or equivalent stocking level) of more than 10 – 30 per cent with trees with the potential to reach a minimum height of 2 – 5 metres at maturity in situ. A forest may consist either of closed forest formations where trees of various storeys and undergrowth cover a high proportion of the ground, or open forest. Young natural stands and all plantations which have yet to reach a crown density of 10 – 30 per cent or tree height of 2 – 5 metres are included under forest, as are areas normally forming part of the forest area which are temporarily unstocked as a result of human intervention such as harvesting or natural causes but which are expected to revert to forest.*

In addition to the minimum area of forest, it is *good practice* that countries specify the minimum width that they will apply to define forest and land subject to AR, D and FM activities, as explained in Section 2.2.6.

Figure 1.1 Flowchart of the activities outlined in this chapter



In applying Decision 16/CMP.1 definition of forest during the first CP, some countries excluded certain types of land e.g. fruit orchards, grazed savannas, urban trees, and some types of plantations, even if these lands meet the thresholds for forest.

In cases where countries apply these exclusions, to achieve transparency in reporting it is *good practice*:

- To document the rationale of criteria used to exclude from forest those areas which meet the thresholds for forest (e.g. consistency with national forest inventories, with reporting to FAO), and how these criteria are applied consistently across the country and CPs;
- To report the extent of the area which meets the thresholds for forest, but is not reported as forest and to describe the consequences of this exclusion for reported emissions and removals; and
- That any harvested wood product (HWP) from timber harvested from forests where the emissions and removals are not accounted under Article 3.3 AR or Article 3.4 FM not be included in HWP carbon stock reporting.

Countries that exclude in this way land that would otherwise meet the definition of forest, where this land is still reported under an elected Article 3.4 activity, have to report, and account, carbon emissions and removals associated with carbon stock changes in woody biomass, including emissions associated with the removal of tree cover below the forest threshold. Where this land is not reported under an elected Article 3.4 activity, neither emissions nor removals associated with tree growth or loss are accounted. It is *good practice* to describe the consequences of this exclusion for reported emissions and removals by providing information about their magnitude and net balance.

STEP 1.2: Define natural forest and planted forest. It is *good practice* that Parties, according to their national circumstances: (a) provide their definition of natural forest and planted forest (which include forest plantation as defined in the *2006 IPCC Guidelines*); (b) define when a conversion from natural forest to planted forest occurs; and (c) apply these definitions consistently throughout the CPs.

STEP 1.3: If applicable, consistent with Section 2.3.9 (Disturbances), define, for AR and FM activities, natural disturbances in terms of type, and calculate for each activity the background level of emissions associated with disturbances and a margin, where a margin is needed.

STEP 1.4: Establish a hierarchy among Article 3.3, FM and elected Article 3.4 activities to provide a framework for consistent attribution.

- Article 3.3 activities and FM are mandatory and take precedence over elected 3.4 activities;
- Once land has been reported and accounted under the KP it cannot be excluded from reporting and accounting and the hierarchy needs to recognise this; and
- Double counting needs to be avoided.

In addition to the framework established by the CMP decisions it is *good practice* to establish a hierarchy among elected Article 3.4 activities: CM, GM, and/or RV, noting that WDR is by definition the lowest level of the hierarchy. It is also *good practice* to apply the same hierarchy among elected activities under Article 3.4 across CPs.

Thus the overall hierarchy among mandatory and elected activities is established as follows:

- D activities take precedence in the reporting hierarchy over AR activities. Therefore, land that was reported under D, on which subsequent regrowth of forests occurs continues to be reported under Article 3.3 (D) and it is *good practice* to report it as a subcategory to indicate that this previously deforested land can be acting as a carbon sink.
- AR and D activities take precedence in the reporting hierarchy over FM activities.
- AR, D and FM activities take precedence in the reporting hierarchy over any other elected Article 3.4 activity.
- Parties establish the reporting hierarchy among elected activities of CM, GM and RV.
- Since WDR is limited to lands that are not accounted for under any other activity[10], lands not already reported under any of the above activities in a given year, on which drainage and rewetting of organic soils take place are reported under WDR, if elected by the Party.

[10] See definition of WDR in paragraph 1(b) of Annex to Decision 2/CMP.7 contained in document FCCC/KP/CMP/2011/10/Add.1, p. 13.

In addition to these general guidelines, Decision 2/CMP.7 also provides for the following circumstances:

- Land subject to direct human-induced conversion from forest to non-forest is reported under D (Article 3.3) unless a Party chooses to use the provision for CEFC and all requirements (paragraph 37 in Annex to Decision 2/CMP.7) are met, in which case it is reported under FM (see Section 2.7.7 for details and requirements);
- Land subject to direct human-induced conversion from non-forest to forest is reported under AR (Article 3.3) unless this land is used to compensate the harvest of forest plantations and conversion to non-forest land under the provisions for CEFC and all requirements (paragraph 37 in Annex to Decision 2/CMP.7) are met, in which case it is reported under FM as explained in the previous paragraph (see Section 2.7.7 for details and requirements).

Where elected activities under Article 3.4 overlap, it is *good practice* to apply consistently the specified hierarchy to determine under which activity the land is to be reported. For example, if land could fall into both CM and RV (such as for new orchards), then it is *good practice* to report over time that land under one and only one activity according to the established hierarchy.

Agricultural land use may rotate between Cropland and Grassland associated with grazing. Where a Party has elected both Article 3.4 CM and GM activities[11], to reduce reporting complexity and to avoid artefacts or inaccuracies in CM and GM reporting associated with rotation of land between Cropland and Grassland use, a Party may report all land subject to CM and GM under a single activity, normally CM. Although the reporting could occur under one activity, estimation of emissions and removals has to follow the methodologies established for CM or GM, consistent with the activity on the area. Where a Party has elected only one activity, either CM or GM (Article 3.4), it is *good practice* to report and account the land subject to rotation under the elected activity.

STEP 2: Land identification for mandatory and elected activities under Article 3.4

The second step of the inventory assessment is to determine the areas on which the activities have taken place since 1990 (and for which emissions and removals will be estimated). This step builds on the approaches described in Chapter 3, Volume 4 of the *2006 IPCC Guidelines*.

STEP 2.1: Stratify the country into areas of land for which the geographic boundaries will be reported, as well as the areas of land subject to Article 3.3 and the areas of land subject to Article 3.4 within these geographic boundaries (see Section 2.2). This step can be omitted if Reporting Method 2 (see Section 2.2.2) is used. Stratification of the country should occur at the following four levels:

- Level 1: stratify the country into areas subject to the six land-use categories, and associated subcategories, as defined in the *2006 IPCC Guidelines*;
- Level 2: stratify the land-use categories into areas of land subject to mandatory or elected activities or not subject to any mandatory or elected activity;
- Level 3: stratify the area subject to activities into areas of mineral soils and organic soils;
- Level 4: where such activities do occur, stratify areas with organic soils into areas subject to drainage or rewetting or neither drained nor rewetted.

STEP 2.2: Initial conditions: Compile initial land-use and land-cover information for 31 December 1989.

Using the selected definitions of forest determine forest and non-forest areas on 31 December 1989. This can be accomplished with a map that identifies all areas considered forest, or with statistical data derived from a national land survey as time-series of a national forest inventory. All forest-related land-use change activities since 1 January 1990 can then be determined with reference to either maps or statistical sets of data (see Section 2.2.2).

[11] Reporting requirements and accounting rules for CM and GM are identical

STEP 2.3: Identify lands that are subject to mandatory (STEP 2.3.1) activities (since 1 January 1990) and elected activities (STEP 2.3.2), and estimate the total area of these lands within each geographic boundary.

STEP 2.3.1: Mandatory activities (AR, D and FM)

Identify lands that, since 1 January 1990, are subject to activities that are mandatory for reporting (AR, D and FM), and estimate the total area of these lands within each geographic boundary. Under Reporting Method 2 (Section 2.2.2) the estimation of land areas will be carried out individually for all lands affected.

It is *good practice* to identify the land area subject to FM in each inventory year of the CP. A country could interpret the definition of forest management in terms of specified forest management practices undertaken since 1990, such as fire suppression, harvesting or thinning (narrow approach). Alternatively, a country could interpret the definition of forest management in terms of a broad classification of land subject to a system of forest management practices, without the requirement that a specified forest management practice has occurred on each land (broad approach) (for details see Section 2.7.1).

Parties are required[12] to estimate and report the area of lands that have been subject to AR and D and the area of lands subject to FM within the boundaries mentioned in STEP 2 above (for details see Sections 2.2.2, 2.5 and 2.6). Furthermore, each Party is required to estimate and report areas of lands that fall into categories defined by decision 2/CMP.7: it is therefore *good practice* to report, for each year in the CP, the area of lands with natural forests that have been converted to planted forests and to report the associated emissions under FM. Countries which have selected to use the provisions of natural disturbance or CEFC need to provide the georeferenced locations of:

- Those lands affected by natural disturbances in the CP for which Parties chose to exclude from the accounting emissions and subsequent removals; and
- Where Parties chose to implement and meet the provision of CEFC, those lands of forest plantation which have been harvested and converted to non-forest land as well as those lands that have been converted to forest to compensate for harvesting of forest plantation.

STEP 2.3.2: Elected activities (CM, GM, RV, and/or WDR)

Identify and estimate the area of lands subject to elected activities under Article 3.4 within each geographic boundary. Under Reporting Method 2 (Section 2.2.2) the estimation of areas of land is carried out individually for all lands subject to elected Article 3.4 activities.

For CM or GM as discussed in more depth in Sections 2.9 – 2.10, each Party identifies the land area subject to the activity in each inventory year of the CP as well as in 1990 (or the applicable base year), because GHG emissions and removals in the base year are used in the accounting.

For WDR and RV each Party identifies the land area subject to the activity since 1990. The GHG emissions and removals in the base year (1990) are used in the accounting.

STEP 2.3.3: Lands subject to Article 6 project activities

Some lands subject to Article 3.3 or Article 3.4 activities can also be subject to projects under Article 6 of the KP. These have to be reported under Article 3.3 or Article 3.4. In addition, these lands need to be delineated and the GHG emissions and removals reported separately as part of project reporting (see Section 4.3 of the *GPG-LULUCF*). The relationship between estimation and reporting of activities under Articles 3.3 and 3.4, and projects under Article 6, is discussed in Section 1.4.

STEP 3: Estimate GHG emissions and removals on lands identified under Step 2 above.

STEP 3.1: Estimate GHG emissions and removals for each year of the CP, on all areas subject to the mandatory and elected activities (as identified in steps 2.3.1 and 2.3.2) while ensuring that there are no gaps and no double counting.

The estimation of GHG emissions and removals for an activity begins with the onset of the activity or the beginning of the CP, whichever comes later.

[12] See paragraph 2 of Annex II to Decision 2/CMP8 contained in document FCCC/KP/CMP/2012/13/Add.1, p.18.

1.3 GENERAL RULES FOR CATEGORISATION OF LAND AREAS UNDER ARTICLES 3.3 AND 3.4

Chapter 3 (Consistent representation of lands), Volume 4 of the *2006 IPCC Guidelines* describes approaches to classifying and representing land areas associated with six land-use categories. This is the basis for the *good practice* guidance in this *KP Supplement* for identifying all relevant lands, for KP reporting, and for avoiding double counting of lands. It is *good practice* to follow the decision tree in Figure 1.2 for each reporting year of the CP in order to:

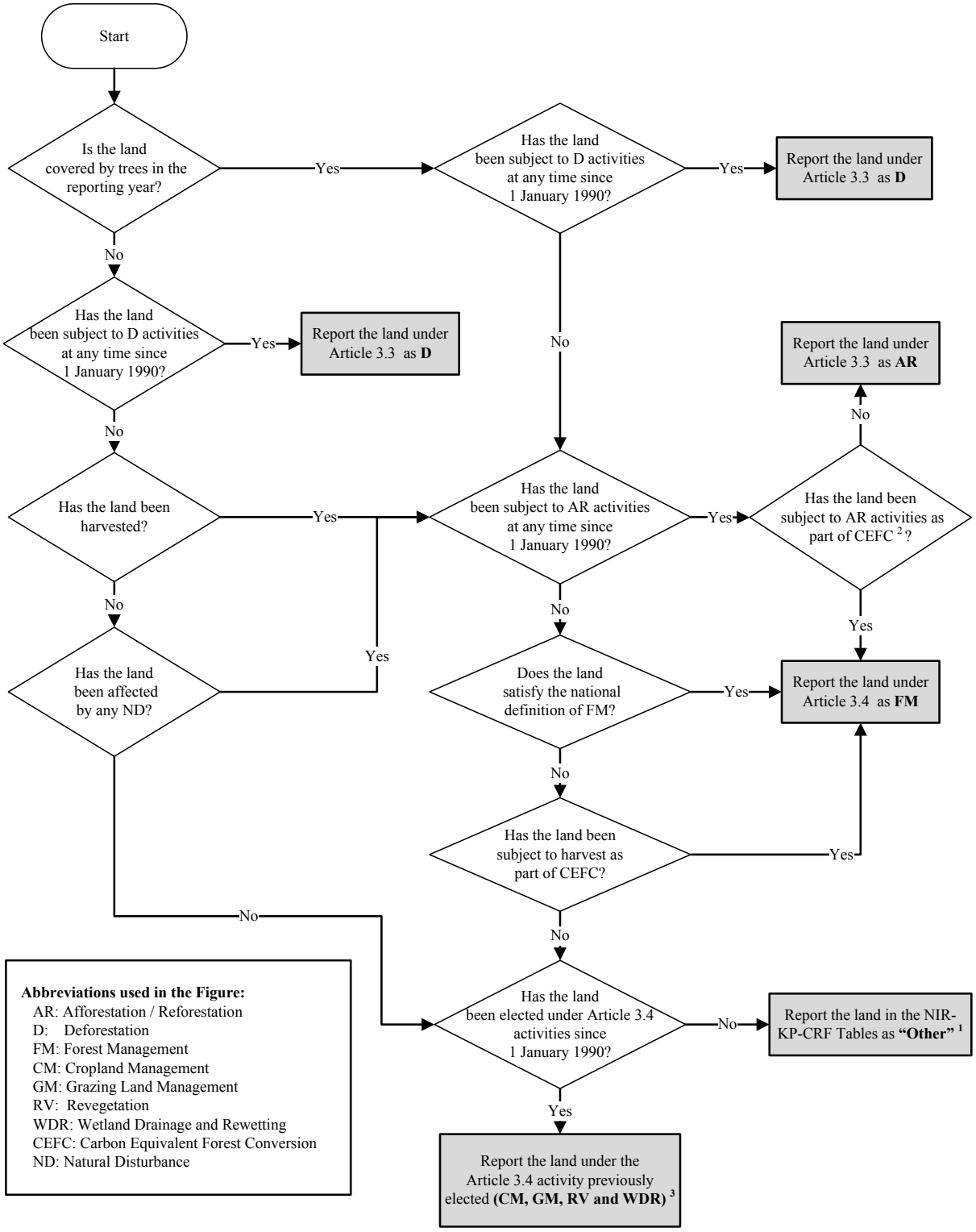
- Distinguish between AR and D activities under Article 3.3, and FM, CM, GM, RV and WDR activities under Article 3.4, as well as to remove potential overlaps and gaps between them; and to
- Assign lands, where activities occurred, to a single activity at any given point in time (i.e., for the base year and each year of the second CP). This is required because of the possible changes in land use or activities which can lead to double counting of lands subject simultaneously to mandatory and elected activities. Guidance on how to deal with shifts in land use over time is exemplified in Box 1.1 at the end of this section.

The decision tree in Figure 1.2 is based on the definitions given in the Annexes to Decisions 16/CMP.1 and 2/CMP.7. It identifies a single activity for a given year X of the CP under which the land should be reported. The decision tree recognises that a given piece of land could be reported under different activities over time, subject to certain conditions explained below. The decision tree is to be applied annually during the CP in order to update the allocation of lands to activities, thus taking into account shifts in land use that may have occurred. This may be achieved by annual tracking of land or by interpolation between consecutive assessments of land use.

There are two main branches in the decision tree in Figure 1.2. If land is covered by trees in the reporting year, then the questions in the "centre" branch should be answered to determine whether the land was subject to activities under Article 3.3, FM, or any elected Article 3.4 activities. If land is not covered by trees in the reporting year, then the questions in the "left" branch should be answered to determine whether the land was subject to deforestation at any time since 1st January 1990, or subject to any other activities which could be classified as Article 3.3 and 3.4 activities. This is required to fulfil the reporting needs specified in the Annex to Decision 2/CMP.7, and to demonstrate that there is no double counting, which could occur if full enumeration was not applied. More detailed decision trees and examples to determine whether or not land is subject to specific activities under Articles 3.3 and 3.4 are presented in Sections 2.5 through 2.12.

For land that is subject to an Article 3.4 activity, it is necessary to know whether it was subject to any other mandatory or elected activity in the previous year. If the land was subject to a mandatory activity it should be kept under that activity, otherwise it is *good practice* to assign it to the elected activity that is higher in the hierarchical order of elected Article 3.4 activities, using the hierarchy established in Step 1.4 above. Similarly, if land is subject to more than one Article 3.4 activity, it is *good practice* to assign it to the elected activity that is higher in the hierarchical order.

Figure 1.2 Decision tree for classifying land in the reporting year under Article 3.3 (AR, D), FM, any elected Article 3.4 activity (CM, GM, RV and WDR), or not at all ("Other"). Secondary classifications are not shown in the figure.



1. "Other" includes managed and unmanaged lands not reported under mandatory or elected activities. Note that "Other" in this context does **not** refer to the "Other Land" LULUCF category.
2. Can only be reported as FM if the land has been harvested as part of CEFC and if all other conditions of the CEFC provision are also met (see Section 2.7.2 for details).
3. If land was reported under an elected Article 3.4 activity in the previous reporting year, it is *good practice* to continue reporting it under the same activity to assure consistency, unless the new activity is equal or higher in the hierarchy of elected Article 3.4 activities.

In addition, note that:

- The decision tree in Figure 1.2 is not sufficient to assign all lands to specific activities. For the reporting of these lands, it is *good practice* to follow the methodological guidance provided under Section 2.2 on "Generic Methodologies for Area Identification, Stratification and Reporting", and in the activity-specific sections on land identification in Sections 2.5-2.12.
- For the second CP, Article 3.3 applies to land that is subject to an AR or D activity at any time between 1 January 1990 and 31 December of the last year of each CP.
- For reporting during the second CP, Article 3.4 applies to land that is subject to FM and any activity of CM, GM, RV, or WDR elected during the CP or in any year of the previous CP[13]. Any Article 3.4 activities elected in the first CP must be reported during the second CP. Article 3.4 also applies to land subject to RV, and when a narrow approach to their definitions is applied, to FM and WDR since 1 January 1990.
- Once land is accounted for and therefore reported under an Article 3.3, FM or elected Article 3.4 activity, all anthropogenic GHG emissions from sources and removals by sinks on this land must be reported from that time forward through the second CP[14], except where the country chooses not to report a pool that has been shown not to be a source as explained in Section 2.3.1. Therefore, in principle the total land area included in the reporting of Article 3.3 and 3.4 activities can never decrease. For CM and GM, the guidance provided in the *GPG-LULUCF* (Box 4.2.8) acknowledges that some of the area of the activity in the '**base year only'** may no longer be reported under that activity in the reporting year. Where this area is not transferred to another reported activity the associated emissions and removals will be accounted as zero in that year. In order to achieve transparency in reporting, it is *good practice* to describe the consequences of this exclusion on reported emissions and removals.
- In order to avoid the reporting of land under more than one activity in any year during the CP, it is *good practice* to apply the following :
  - Land subject to activities under Article 3.3 which would otherwise be subject to FM or an elected activity under Article 3.4[15] are to be identified as lands that are both subject to Article 3.3 and 3.4 activities by using secondary classifications (these are not shown in the decision tree in Figure 1.2). The decision tree implies that AR, D and FM have precedence over the other activities for land classification and reporting purposes for the second CP; and
  - For lands that are subject to more than one activity under Article 3.4, it is *good practice* to apply the national criteria that establish the hierarchy among elected Article 3.4 activities (see STEP 1.4 in Section 1.2 above).
- Land subject to loss or gain of forest cover can move between categories in the following cases:
  - Land classified as forests at any time since 31 December 1989, including AR land and subsequently deforested is reclassified as D land (see Sections 2.5 and 2.6 for details).
  - Land under an elected Article 3.4 activity that becomes subject to an Article 3.3 activity needs subsequently to be reported under the latter. For the second CP, land on which forest plantations were established before 1 January 1990 and are subject to forest management (including those lands which were re-established as forest plantation after 1 January 1960 and before 1 January 1990) that is cleared of forest can be reported as FM, if the conditions of CEFC are met (see Section 2.7.7)[16].
- The following transitions are not possible. Note that these restrictions apply to reporting under the KP (but do of course not affect the actual management that a country applies to its lands):
  - Land cannot be transferred from FM (mandatory under Article 3.4) to an elected Article 3.4 activity;
  - Land cannot be transferred from an elected to an unelected Article 3.4 activity;
  - Land cannot leave the Article 3.3 reporting; and

[13] Conversely, for base year reporting, Article 3.4 applies to land that was subject to an elected CM, GM, RV, or WDR activity in the base year.

[14] Paragraph 24 of Annex to Decision 2/CMP.7 contained in document FCCC/KP/CMP/2011/10/Add.1, p. 16.

[15] See Paragraph 2 (b), bullet (ii) in the Annex II to Decision 2/CMP.8 (Implications of the implementation of decisions 2/CMP.7 to 5/CMP.7 on the previous decisions on methodological issues related to the Kyoto Protocol, including those relating to Articles 5, 7 and 8 of the Kyoto Protocol), contained in document FCCC/KP/CMP/2012/13/Add.1, p.18

[16] See paragraphs 37-39 of Annex to Decision 2/CMP.7 contained in document FCCC/KP/CMP/2011/10/Add.1, p. 19.

- D land cannot become AR land. It is *good practice* to report carbon stock changes associated with forest regrowth on previously deforested land as a subcategory of D to indicate why D land may act as a carbon sink (See Section 2.6). In such cases it is *good practice* to estimate emissions and removals using the methodology for lands converted to forest land as described in the *2006 IPCC Guidelines*.

- It is *good practice* to define the boundaries between FM and CM or GM, where these are applied on the same area, using the national forest definition applied consistently with past reporting practice as described at Step 1.1 above.

In summary, this means that the area under Article 3.3 (AR and D) will grow from 0 hectares on 31 December 1989 up to a certain value at the end of the second CP. At any given point in time, it is *good practice* that the AR and D categories should contain all areas of land that have been afforested, reforested or deforested since 1 January 1990. The land area under Article 3.3 D will increase in size or stay constant during the second CP. The land area in the AR activity will typically increase, but could decrease if AR lands are subject to deforestation activities.

The amount of lands under FM or elected Article 3.4 activities can fluctuate because of various land-use changes. It is unlikely that those areas will stay constant over time for the purpose of reporting because, for example:

- A deforestation event can transfer land from FM to D under Article 3.3;
- An afforestation or reforestation event can transfer land from any non-forest Article 3.4 activity to the Article 3.3 AR activity;
- GM can become CM and vice versa, and it is reported under the elected Article 3.4 activity most recently applied to the land;
- RV can become CM or GM or vice versa, and it is reported under the elected Article 3.4 activity most recently applied to the land;
- FM areas can increase, for example, as countries expand the road infrastructure to areas previously inaccessible and unmanaged and initiate harvest and other FM activities[17]; and
- Drained organic soils can become FM, CM, GM, RV or WDR, consistent with national definitions and criteria for classification and activities on these soils.

Box 1.1 provides several examples that summarise the considerations that apply for lands subject to activities under Articles 3.3 and 3.4 of the KP. For more detailed explanations of the rationale behind the examples in Box 1.1, the reader is referred to the more detailed explanations in the remaining sections of this supplement.

[17] Note, in this example, the construction of the road infrastructure may have also increased D depending on national definitions of minimum area and width for forest.

BOX 1.1
EXAMPLES FOR THE ASSIGNMENT OF LANDS TO ARTICLE 3.3 AND 3.4 ACTIVITIES OVER TIME

The following examples are intended to show, conceptually and in accordance with the decision tree in Figure 1.2, how different land-use conversions would be categorised in different inventory years of the KP. This does not necessarily imply that the land-use transition can be directly measured on an annual basis. For croplands and grazing lands only carbon stock changes are discussed in the examples below, since non-CO_2 GHG emissions for such lands are in most cases reported under the Agriculture sector.

Example 1: Land under FM is deforested in 1995 and turned into cropland.

Carbon stock changes on this land are reported under D from 2008 onwards through the second CP. CO_2 emissions from liming and urea application as well as non-CO_2 GHG emissions on this land are reported under the Agriculture sector.

Carbon stock changes on this land will not be reported under CM, even if CM was elected, because D takes precedence over CM. The decision tree in Figure 1.2 therefore assigns this land to D.

Should trees be re-established on this land after the end of the first CP, for example in 2014, the land does not transition from one Article 3.3 activity to another (from D to AR). The land continues to be reported under D. Estimates of carbon stock changes and non-CO_2 GHG emissions will be based on the methodologies for *land converted to forest land*.

Example 2: Land under FM is deforested on 1 January 2015 and turned into cropland.

Carbon stock changes on this land during the second CP are reported under D starting in 2015. The methodology for croplands that were previously forest should be used to estimate carbon stock changes. Non-CO_2 GHG emissions associated with cropland use and CO_2 emissions from liming and urea application are estimated using methods described in Volume 4 of the *2006 IPCC Guidelines*, and are to be reported in the national inventory within the Agriculture sector.

Carbon stock changes and non-CO_2 GHG emissions on this land will not be reported under CM, even if CM has been elected, because D takes precedence over CM. The decision tree in Figure 1.2 therefore assigns this land to D.

Example 3 to 12

The following examples illustrate how Article 3.3 or 3.4 activities are to be reported during the second CP. For each example a brief scenario is presented and the correct land management activity for reporting, identified as the "Reporting solution", is provided in a table with additional explanation in the comment row.

More than one solution may be acceptable after the conversion or management change depending on the nationally-defined hierarchy of elected 3.4 activities established at the start of the CP.

Abbreviations used in the tables:

D- Deforestation; AR- Afforestation and Reforestation; FM- Forest Management; CM- Cropland Management; GM- Grazing Land Management; RV- Revegetation; WDR- Wetland Drainage and Rewetting

M- Mandatory reporting obligation; E- Elected activity; N/E- Not Elected; N/A- Not Applicable in this reporting period.

CP1- First CP 2008-2012 inclusive

CP2- Second CP 2013-2020 inclusive

A blank cell in the tables means the activity is not applicable.

BOX 1.1 (CONTINUED)

Example 3:

Scenario: A cropland was converted into grazing land in 2010. FM, CM and GM were elected in CP1.							
Activity	D	AR	FM	CM	GM	RV	WDR
Status in CP1	M	M	E	E	E	N/E	N/A
Status in CP2	M	M	M	M	M	N/E	N/E
Reporting solution				Report under CM for 2008 and 2009 only	Report under GM for all years from 2010 to 2020		
Comments	The example assumes that GM is higher than CM in the hierarchy. It is mandatory to continue to account for GM also into CP2 M-Mandatory reporting obligation; E- Elected activity; N/E- Not Elected; N/A- Not Applicable in this reporting period.						

Example 4:

Scenario: A cropland is converted into a grazing land in 2015, CM, GM **and** RV were elected in CP2.							
Activity	D	AR	FM	CM	GM	RV	WDR
Status in CP1	M	M	N/E	N/E	N/E	N/E	N/A
Status in CP2	M	M	M	E	E	E	N/E
Reporting solution				Report under CM for 2013 and 2014 only	Report under GM for all years from 2015 to 2020	**OR** Report under RV for all years from 2015 to 2020	
Comments	Two reporting scenarios are possible. The converted land can be classified as GM or RV according to their level in the hierarchy established by the country. The reporting is based on the definitions for classifying lands under the activities. When communicating the decision to elect the KP activity for CP2, the country is required to provide the definitions of activities which will be classified under each KP activity and the hierarchy of elected activities which it will apply. Accounting will not be affected by which option is chosen.						

Example 5:

Scenario: A cropland was converted into a grazing land in 2015, GM was elected in CP2 and CM was not elected in CP2							
Activity	D	AR	FM	CM	GM	RV	WDR
Status in CP1	M	M	N/E	N/E	N/E	N/E	N/A
Status in CP2	M	M	M	N/E	E	N/E	N/E
Reporting Solution					Report under GM for all years from 2015 to 2020		
Comments	Only report the land for the period after conversion to GM.						

BOX 1.1 (CONTINUED)

Example 6:

Scenario: A cropland was converted into a grazing land in 2015, CM was elected in CP2. GM was not elected.							
Activity	D	AR	FM	CM	GM	RV	WDR
Status in CP1	M	M	N/E	N/E	N/E	N/E	N/A
Status in CP2	M	M	M	E	N/E	N/E	N/E
Reporting solution				Report under CM for all years from 2013 to 2020 including period following conversion to grazing land.			
Comments	Continue to report area converted to grazing land under CM. Once land has been reported under any Article 3.3 or 3.4 activity during a CP, it must continue to be reported. As noted in Section 1.3, emissions and removals may, in this example, be accounted as zero from 2015 to 2020. In order to achieve transparency in reporting, it is *good practice* to describe the consequences of the zero accounting on reported emissions and removals.						

Example 7:

Scenario: A cropland was converted into a Settlement in 2015, CM was elected in CP2							
Activity	D	AR	FM	CM	GM	RV	WDR
Status in CP1	M	M	N/E	N/E	N/E	N/E	N/A
Status in CP2	M	M	M	E	N/E	N/E	N/E
Reporting solution				As in Example 6, report this land as CM from 2013 to 2020			
Comments	Continue to report area converted to Settlement under CM. Once land has been reported under any Article 3.3 or 3.4 activity during a CP, it must continue to be reported. As noted in Section 1.3, emissions and removals may, in this example, be accounted as zero from 2015 to 2020. In order to achieve transparency in reporting, it is *good practice* to describe the consequences of the zero accounting on reported emissions and removals						

Example 8:

Scenario: From 2013 to 2020, under the influence of natural forces, an area of FM becomes water saturated and the forest dies back. WDR has been elected for CP2							
Activity	D	AR	FM	CM	GM	RV	WDR
Status in CP1	M	M	E	N/E	N/E	N/E	N/A
Status in CP2	M	M	M	N/E	N/E	N/E	E
Reporting solution			Continue to report emissions and removals under FM				
Comments	The forest cover loss is not directly human-induced so the land is not subject to D. Further, FM is higher in the reporting hierarchy than the elected activities. Although WDR has been elected, the land must continue to be reported under FM.						

BOX 1.1 (CONTINUED)

Example 9:

Scenario: An area of land afforested in 1995 is deforested in 2015							
Activity	D	AR	FM	CM	GM	RV	WDR
Status in CP1	M	M	N/E	N/E	N/E	N/E	N/A
Status in CP2	M	M	M	N/E	N/E	N/E	N/E
Reporting solution	Report as D from 2015 to 2020	Report under AR until 2014					
Comments	D takes precedence over AR.						

Example 10:

Scenario: An area of peatland previously drained for peat extraction is rewetted to restore wetland ecosystem function in 2015. WDR is elected for CP2							
Activity	D	AR	FM	CM	GM	RV	WDR
Status in CP1	M	M	N/E	N/E	N/E	N/E	N/A
Status in CP2	M	M	M	N/E	N/E	N/E	E
Reporting solution							Report as WDR from 2015 to 2020
Comments	WDR is at the lowest level on the hierarchy. Here it is assumed the final status of the land is not included under the national definition of any other Article 3.3, FM or elected 3.4 activity.						

Example 11:

Scenario: An area of cropland on drained organic soil is rewetted to restore wetland ecosystem function in 2015. CM and WDR are elected for CP2							
Activity	D	AR	FM	CM	GM	RV	WDR
Status in CP1	M	M	N/E	N/E	N/E	N/E	N/A
Status in CP2	M	M	M	E	N/E	N/E	E
Reporting solution				Report as CM from 2013 to 2020			
Comments	Continued reporting of this area under CM because it takes precedence over WDR, which is at the lowest level on the hierarchy. This assumes the final status of the land is not included under the national definition of any Article 3.3, or FM activity.						

BOX 1.1 (CONTINUED)

Example 12:

Scenario: An area of managed forest on drained organic soil is cleared and rewetted to restore wetland ecosystem function in 2015. WDR is elected for CP2							
Activity	D	AR	FM	CM	GM	RV	WDR
Status in CP1	M	M	E	N/E	N/E	N/E	N/A
Status in CP2	M	M	M	N/E	N/E	N/E	E
Reporting solution	Report as D from 2015 to 2020		Report as FM for 2013 and 2014 only				
Comments	D takes precedence over WDR, which is at the lowest level on the hierarchy.						

1.4 RELATIONSHIP BETWEEN ANNEX I PARTIES' NATIONAL INVENTORIES AND ARTICLE 6 LULUCF PROJECTS

Emissions or removals resulting from projects under Article 6 will be part of the host country's annual inventory under the KP reporting[18]. The methods for measuring, estimating, and reporting GHG emissions and removals resulting from LULUCF project activities are addressed in Section 4.3 of the *GPG-LULUCF* (LULUCF Projects).

When estimating the GHG emissions and removals of Article 3.3 and 3.4 activities, it is possible to use the information that is reported for, or is meeting the standards of, Article 6 LULUCF projects on these lands (but not *vice versa*). Two options exist for Article 3.3 and Article 3.4 estimation, both of which are considered *good practice*:

Option 1: Carry out Article 3.3 and Article 3.4 assessment without consideration of information reported for Article 6 projects (which are reported separately as outlined in Section 4.3 of the *GPG-LULUCF*). This assumes that a properly designed national system will also automatically include the effects of Article 6 projects. This approach is consistent with the approaches taken in the other emission sectors. For example, an Article 6 project that increases removals by afforesting new areas is not *individually* considered in the national emissions inventory, but will *implicitly* be included due to the project's impacts in the national statistics for AR.

Option 2: Consider all changes of carbon stocks as well as GHG emissions and removals at the project level as a primary data source for Article 3.3 and/or Article 3.4 estimation and reporting, for example by considering projects as a separate stratum. Any Article 3.3 and 3.4 activities that are not projects need to be monitored separately. In this case, the design of the monitoring must ensure that projects are explicitly excluded from the remaining lands under Articles 3.3 and 3.4, to avoid double counting.

One important difference between project and national (Articles 3.3 and 3.4) accounting is that projects have a baseline scenario (i.e., only **additional** carbon stock changes and non-CO_2 GHG emissions due to the project are accounted) and a project boundary, while AR, D, CM, GM, RV and WDR do not have a baseline scenario. CM, GM, RV and WDR use the emissions and removals in the base year in the accounting. After the first CP, FM does have a FM reference level. Therefore, when using project-level information for reporting under different activities of Articles 3.3 and 3.4, countries must take into account the projects' total contribution to reported overall carbon stock changes and non-CO_2 GHG emissions and not just the change relative to the projects' baseline scenario.

[18] See paragraph 11(c) of Annex to Decision 15/CMP.1 (Guidelines for the preparation of the information required under Article 7 of the Kyoto Protocol) contained in the document FCCC/KP/CMP/2005/8/Add.2