SC3 mid-term meeting, Vienna, January 12-13, 2010 - Minutes

Introduction and Guidance

Claude Vidal presented the SC3 strong points
Presentation enclosed

Klemens Schadauer recapitulated the Guidance for data upload and the points subjected to misunderstanding, such as:

1. Non-forest plots (not mandatory in the contract) but we have decided to include it to have the design.
2. Sound results: SC3 is just a demonstration project. Not so much harmonization is expected under SC3.
3. Different sampling designs (even in a same country), so we have decided to include information on strata. We need it for estimation reasons.
4. Plot partitioning, sometime referred to as shared plots.
5. Inventory cycle.
6. Plot coordinates: if a country doesn't want to provide them it has to shift the coordinates to the centre of the 1×1 km INSPIRE grid.
7. Clusters.

Data upload: status and country feedback

Camille Bonhomme presented some key figures related to data upload, such as the number of delivered plots, the upload date, etc.
Presentation enclosed

Then, each country gave its feedback and has highlighted some difficulties:

Romania
Plots which fall on the forest border were kept even if the centre was not in forest, but this will be corrected in the new uploading.
Two tree species with only one correspondence have to be merged to be uploaded in the E-forest platform.
A few plots were outside the country due to cluster shifting.
All the plots belonging to the same cluster were shifted to the same centre of the grid. This will be corrected for the next submission.

Czech Republic
Duplex plots were not considered as cluster plots and uploaded with the same coordinates. This will be corrected but it implies estimating the centre of the newly formed cluster.
Dead trees were included for the uploading.
Tree species were added by Annemarie.

Spain
Non-forest plots were not provided, but could be deduced from the systematic grid.
Either Spain makes this deduction, or they send the systematic sampling grid to the French team.

Great Britain
The sampling design is quite different from that of other countries. The forest map which is independently assessed is used to project specific field plots schemes with variable density. Each sampling scheme might be considered as a different stratum in order to meet the uploading requirements.
GB can provide the strata.
Non-forest plots are not available.

Switzerland
Forest data are provided only for plots that were visited. Non accessible plots are not yet provided.
Adrian pointed out the necessity to manage dbh in order to estimate the consequence of having different thresholds.

Germany
Problem for the clusters that lay on strata borders since the SW plot determines the strata to which belongs the plot.
Temporally unstocked plots and inaccessible forest plots were included and had ~~BA~~for the moment a basal area=0.
The transformation of projection system has a few consequences in the sampling design.

Finland
The data provided come from two cycles because regions are not sampled at the same frequency.
Inland water was excluded from the data uploaded.
There is a difficulty with the plots on forest edge. Measurements are made even if the centre of the plot does not lie in forest (no mirror correction).
Finland asked if it was possible to provide the INSPIRE grid in the same projection system than the one used in the location file.
We need to have the information about cluster: ~~how many hectares does a cluster represent?~~ specific weighting function.

Sweden
The cycle name corresponds to the middle of the period. Cluster plots have been provided with the same coordinate.

Norway
Some regions (north part of Norway) are not sampled yet. These regions will be a new strata possibly with a reduced sampling density.
2 cycles have been provided. The country will provide the updated time period. ~~but they can be merged~~
Remarks about the integration module: comments are optional but it seems to be necessary to provide an empty field (one space): to be checked by Benoit Pesty.

Austria
Dead standing trees and windthrown trees were included for the uploading.

France

Non-forest plots were not provided because an adaptation of the French system is needed (the weight of the plots should be provided).

Proposal: add the non-forest plots defined by photo-interpretation. In this case a new code for the forest domain variable should be added? (-2?)

Table 1. Country feedback

Country	Forest/non-forest plots	~~Partitioned~~ Partitioning plots	Tree species list	Cycle	Inland waters	Unequal probability	Minimum diameter	Cluster
RO	Field inventory not finished yet	√	National list very detailed => grouping necessary	√	included	√	5.6 cm	Coordinates have to be corrected
CZ	√	√		√	included	√	7 cm	Plot configuration should be considered as a cluster
IT						Weighting needed		
ES	Non-forest plots unavailable						7.5 cm	
GB						Weighting needed		Plot configuration depends on forest density
CH	√	√				√	12 cm	
DE			When grouping loss of only 0.3% of trees				0	Strata attribution affected by coordinate shifting for boundary clusters
FI		Corrections not made	√	Same data set in 2 cycles	excluded			Strata area not always known
SE			√	Cycle label to be specified			0	Permanent plots only. Coordinates have to be corrected
NO	Field inventory not finished yet			??			5 cm	
AT		√	National specie s list less detailed				5 cm	
FR	Non-forest plot not yet available	No	National list very detailed => grouping necessary	√	included	Weighting needed	7.5 cm	

Aggregation and interpolation module

Jean-Luc Cousin presented the grid aggregation and the results obtained using IDW as interpolation method.
Presentation enclosed

Conclusions for SC2:
Aggregation: the 50kmx50km grid will be used to produce the aggregation results to deliver to the JRC instead of the 5kmx5km and the 10kmx10km. These results will be provided without variance. If it is possible to calculate the variance, this information will be reachable only by the members of the consortium.
It will be necessary to determine a limit in terms of number of plots to identify if the results linked to a grid cell can be provided.
These modifications will be proposed to the JRC.

Interpolation module:
The members agreed on the principle of using the IDW algorithm as a first step. The parameter used in the IDW has to be adapted to propose the best sound results.
The members of the consortium ask the French NFI to propose to the JRC that these deliverables will be provided in PNG format or through a print module and not raster format to keep the control of the use of such maps. In complement, these maps will be available in the E-forest platform with scale that avoids to much zoom in.

Guidance

Points to be discussed / questions raised by data providers during the tour de table and presented by Adrian Lanz the second day:
Presentation enclosed

- strata : the sampling frame should cover the whole country (GIS layer of the country)
  sampling frame = sampling stratum = area where the plots are randomly selected/sampled.
  We are only interested in the sample of points on which terrestrial data are collected; i.e. the representative sample of points for the stratum (country) incuding forest and non-forest plots, but no photo-interpreted plots.

- target variables : basal area / forest variable will be introduced
  ⇨ the domain for each target variable will be introduced

  Adrian proposal for domain variable:
  - 0: plot is in a domain on which the target variable is not defined and assessed
  - 1: plot is in a domain on which the target variable is defined and target variable has been collected (assessed, measured, observed)
  - -1: plot is in a domain on which the target variable is defined, but target variable has not been collected (missing value)
    ⇨ Create maps of plots per domain to replace the plot location raster (splitted in two of three layers or one layer with 2 or 3 classes)

Countries are free to define their domain depending on internal constrains, for example, for the accessible domain as in Switzerland, or the productive forest as in Austria.

For Spain, -1 would be attributed to the points considered as forest in national ~~reference~~ definition but not in SC3. For burned areas, the solution is to input domain=1 and ~~BA~~basal area=0 (which corresponds to temporally~~/permanently~~ unstocked area).

- plot configuration : stratification needed for estimation

  It will be preferable not to provide maps of number of tree species per plot because it depends on plot configuration => not comparable among countries.

  This proposal will be discussed with the JRC.

- ~~partitioned~~ partitioning or shared plot: plot centre for decision.

  As far as possible, countries have to apply harmonized forest definitions.

  A new informative variable will be introduced: partition~~ed/shared~~ plot or not (0= plot is not a partition~~ed/shared~~ ing plot, i.e. plot is fully in forest ~~[better domain, see my comment]~~ or fully outside forest ~~[better domain]mid-point in forest, not shared plot;,;~~ 1=~~mid-point in forest [domain], shared plot; -1=mid-point outside forest [domain], shared plot)~~plot is a partitioning plot, i.e. only a part of the plot is in forest). This information combined with the forest domain for IS_FOREST_PLOT variable covers all the possibilities:

  - Plot fully outside forest: partitioning plot=0 and IS_FOREST_PLOT=0
  - Plot fully in forest: partitioning plot=0 and IS_FOREST_PLOT=1
  - Partitioning plot with mid-point in forest: partitioning plot=1 and IS_FOREST_PLOT=1
  - Partitioning plot with mi-point outside forest: partitioning plot=1 and IS_FOREST_PLOT=0

  If the centre is inside forest => expand the not-corrected density with factor 1/p (p= proportion of plot laying within forest)

  This might produce deviations form national estimates for some countries such as Finland where assessments are made in plots even if the centre lies out of the forest. Klemens suggests applying the rule for this case even if this is not statistically the best solution.

- plot location: shift all the plots from a cluster by the same vector
  Maintaining the geometry of the sample plot is mandatory because it may be used for interpolations.
  Corrections for plots located outside the country are not mandatory.

- Selection probability of plots to be included (unequal in some countries, such as Italy)
  Must be accounted for and assessed for each strata. Will enable the computation of means.
  No concern for systematic sampling. Sample schemes based on systematic grids, even with clusters, lead to equal probabilities: the relative weight for a plot would be 1. The proposal is to add a new column for weighting function. So in any case the country has to fill in and if it is a systematic sampling put 1 in this column.

  Problems: GB, Italy, France, mountainous region in Norway.
  Problem for systematic aggregation units. => should work with some weighting => new columns to give the relative weight of the plot and the weight for the cluster. => then it will be possible to create mean estimates.
  For GB the situation is very different because the forest area is derived from maps. The suggestion is to let the forest area apart and work with the plots only.

- estimates for overlapping aggregation units
- and under cluster sampling

} Adrian has presented several estimators for the most complicated cases (future steps)

- variance estimation: it could be good to have the strata GIS layer

Problem for boundaries when plot configurations are different
Not needed for SC3

Conclusions

- Add the concept of "domain" and explain the different types (0 ; 1 ; -1) in PLOT_DATA CSV file (or in a new file).
  Two domains are concerned:
  - Domain_forest for the ~~is~~IS_ ~~forest~~FOREST_ ~~plot~~ PLOT variable (including partitioning plot)
  - Domain_basal_area for the basal area variable

  The ~~is~~IS_ ~~forest~~FOREST_ ~~plot~~ PLOT variable should be in fact a new file if we were strict but this variable will be kept in the PLOT_DATA file to simplify the upload phase.

- Partitioning~~ed~~ plots: do not include shares of plots. The countries have to estimate the basal area as if the plot was entirely inside the forest.
  Rename the column « subplot » in "partitioning~~ed~~ plot" (0, 1, ~~-1 ACCEPTED????~~ see above, centre inside or outside forest).
  Add a text file to describe tricky cases in the country. It will identify the problems for JRC reporting.

- Cluster shifting: keep the geometry, i.e. not 1 coordinate by cluster, but 1 different coordinate for each plot belonging to the cluster.

- Time period/cycle year: in fact related to combine strata (same set of data), so we have to keep it. No additional column needed, but rename “cycle” in “time period”. It is a label, not a value.

- Forest/non-forest or weighting functions: add a new variable in the plot data file to include the weight of the plot. Non-forest plot are maintained.
  Country providing non-forest plots: AT, NO, SW, FI, DE, CH, IT, CZ, RO, FR, DK (?)
  For ES and IT it should be possible to provide non –forest plots. For GB it is a tricky issue.
  ~~=> They should deliver non-forest plot.~~
  ~~Can not provide non-forest plots: GB, ES, IT (??)~~

- GIS layer on inland waters needed for mapping and interpolation (check with FI for data protection). Ask JRC if there is such a European layer available. Countries deal by themselves but provide the information.

- Each country could provide strata GIS layer (especially useful for countries with stratification and land areas not covered by the NFI). ~~The E-fortest platform has to be modified to offer this new function. GIS format will be proposed.~~To be sent by email.
- To retrieve information about some metadata linked to the preparation of the data, a new file (preformatted text file) or web form will be provided
  - ⇨ Prepare some points/columns to be filled in by the countries in a descriptive file or form.

- Specifications on trees:
  - Dead trees: excluded
  - Windthrown trees: excluded
  - Minimum diameter: recommendation: provide as much as you can.
    Add information on it in the text file (or new web form).
    - ⇨ Prepare some points/columns to be filled in by the countries in a descriptive file

  Add a new basal area variable taking only into account only trees with a dbh ≥~~>=~~ 12 cm. ~~No record if there is no basal area >= 12 cm.~~For each plot submitted in the E-forest database two basal areas will be provided: one taking into account only trees with a dbh ≥ 12 cm, and the other taking into account only trees with a dbh < 12 cm.
  - Tree/shrub: if a tree species is considered as a shrub in a country, it should not be included in the platform (even if there is a measured basal area for this shrub and even if it is included as a tree in the national tree species list).

- Ask Annemarie for explanations ~~, how she uploaded the list?~~about the new tree species list. What was the decision rule to include a tree species or not?

- Problem of plots outside country boundaries: not a problem. We do not shift problematic plots and let them in the cell for calculation.

If there are some plots from different countries with the same coordinates, this could be problematic for interpolation.

~~I think we miss here the agreement on the provision of another file in which comments will be included~~

Table 2. SC3 deliverables

	Product	Grid level used	Description	Comments
Map viewer (Static Maps) **PNG format**	Inventory Plot Distribution (Raster)	INSPIRE Grid 1x1 km	Display **forest plots**	**Split into 2 classes (-1; 1)**
	Inventory Plot Distribution (Raster)	**INSPIRE Grid 1x1 km**	**Display forest and non-forest plots**	**To show the richness of NFI data**
	~~Number of tree Species per plot~~	~~INSPIRE Grid 1x1 km~~	~~Number of different tree species per grid cell~~	~~Classes to be defined~~
	Tree Species Groups	INSPIRE Grid 1x1 km	Majority of conifers or broadleaves	2 classes: conifers and broadleaves. Sum of basal area for each class ⇨ comparison
	Tree Species Groups	**INSPIRE Grid 1x1 km**	**Majority of conifers or broadleaves for harmonized dbh >=12cm**	**2 classes: conifers and broadleaves. Sum of basal area for each class ⇨ comparison**
	Basal Area	**Interpolation grid 2x2 km**	Basal area per grid cell for all tree species	Basal area split into 3 or 5 classes
Interactive Tool (Spatial Representations)	Occurrence (presence/absence) of one tree species	INSPIRE Grid 1x1 km	Display all the plots + highlight those with the chosen tree species	Qualitative variables chosen by the user
Interactive Aggregation Tool (Spatial Representations)	Basal area	INSPIRE Grids **50 x 50 km**	Data retrieval on demand for one tree species	The user chooses: - the aggregation grid (5x5 or 10x10 km) - the tree species - the aggregation method

Table 3. SC3 timetable

Task description	Date
Decision on tree species list	Before January 31
Opening of the platform for new uploads	January 31 (*)
New upload according to the SC3 meeting decisions	Until February 28
Deliverable building	Until April 30
Access of the country to the data/platform for validation	Until May 31
Remarks on data check (to eforest@ifn.fr)	

*SPAIN asks the consortium t reopened the platform before the 22/01/2010 if possible.