**FRMS: Specifications for automatic updating of the forest resource data after changes**

The following functionalities are requested to be added to the FRMS:

After entering a *Harvesting, Silvicultural treatment, Incident, Land use change* or *Other change* into an inventory plot (and filling in the relating monitoring parameters (Date etc.)), the system will open a pop-up window with automatic calculated values for forestry characteristics of the plot. The pop-up window includes all the forestry characteristic parameters. The calculations for the parameter values are based on the rules below. If there is no calculation rule mentioned in the following rules for a certain parameter, then the existing value of the plot should be copied to the pop-up window.

In the pop-up window the user can 1) approve the suggested (calculated) new values (press OK), 2) modify the suggested new values and then approve them or 3) reject the suggested values (press Cancel). The system should make the normal validation to the plots.

The rules for the automatic updating are the following:

**Harvestings**

**1. When entering a clearcutting (*Harvesting method* = 1)** to an inventory plot, the system should update the following parameter values to the plot:

* The existing value has to be removed for the following parameters: *Natural forest origin, Plantation forest origin, State of plantation, Tree species, Planting year, Age class length, Average years to closed canopy*
* *Forest type* should be updated according to the following rules:
  + If *Site condition* is 1 (= Soil mountain), *Forest type* is 82
  + If *Site condition* is 2 (= Rocky mountain), *Forest type* is 83
  + If *Site condition* is 3 (= Saline wetland), *Forest type* is 84
  + If *Site condition* is 4 (= Alkaline wetland), *Forest type* is 85
  + If *Site condition* is 6 (= Sandy soil), *Forest type* is 86
* *Volume, m3/ha* = 0 (in case this parameter has a value before the clearcutting) 🡪 Also the *Volume, m3/plot* will be 0.
* *Number of stems for bamboo, 1000 stems/ha* = 0 (in case this parameter has a value before the clearcutting) 🡪 Also the *Number of stems for bamboo, 1000 stems/plot* will be 0.

**2. When entering a selective cutting (*Harvesting method* = 2)** to an inventory plot, the system should update the following parameter values to the plot:

* *Volume, m3/ha* and *m3/plot*: The new *Volume,* *m3/plot* is the old *Volume,* *m3/plot* **minus** the *Removed volume m3/plot* (in case *Volume* has a value before the harvesting and the *Removed volume* has been entered to the harvesting). 🡪 The new *Volume,* *m3/ha* is the new *Volume,* *m3/plot / Plot area, ha.*
* *Number of stems for bamboo, 1000 stems/ha* and *1000 stems/plot*: The new *Number of stems for bamboo, 1000 stems/plot* is the old *Number of stems for bamboo, 1000 stems/plot* **minus** the *Removed number of bamboo stems, 1000 stems/plot* (in case *Number of stems for bamboo* has a value before the harvesting and the *Removed number of bamboo stems, 1000 stems/plot* has been entered to the harvesting). 🡪 The new *Number of stems for bamboo, 1000 stems/ha is* the new *Number of stems for bamboo, 1000 stems/plot* / *Plot area, ha*.

**Silvicultural treatments**

**3. When entering the code 11 New planting** to an inventory plot, the system should update the following parameter values to the plot:

* *Natural forest origin* = empty (no value)
* *State of plantation* = 2 (New plantation)
* *Forest type* should be updated according to the following rules:
  + If *Site condition* is 1 (= Soil mountain), *Forest type* is 72
  + If *Site condition* is 2 (= Rocky mountain), *Forest type* is 73
  + If *Site condition* is 3 (= Saline wetland), *Forest type* is 74
  + If *Site condition* is 4 (= Alkaline wetland), *Forest type* is 75
  + If *Site condition* is 5 (= Freshwater wetland), *Forest type* is 76
  + If *Site condition* is 6 (= Sandy soil), *Forest type* is 77
* *Volume, m3/ha* = 0
* *Number of stems for bamboo, 1000 stems/ha* = 0

**4. When entering the code 31 Tending or 32 Thinning** to an inventory plot, the system should update the following parameter values to the plot:

* *Number of stems for bamboo, 1000 stems/ha* and *1000 stems/plot*: The new *Number of stems for bamboo, 1000 stems/plot* is the old *Number of stems for bamboo, 1000 stems/plot* **minus** the *Removed number of bamboo stems, 1000 stems/plot* (in case *Number of stems for bamboo* has a value before the tending/thinning and the *Removed number of bamboo stems, 1000 stems/plot* has been entered to the tending/thinning).

**Note**: When entering silvicultural treatment **12 Replanting**, **21 Natural regeneration** or **22 Supplementary planting**, the existing values for forestry characteristics will be shown in the pop-up window.

**Incidents**

**5. When entering an incident (*Incident type* = 1-4)** to an inventory plot, the system should update the following parameter values to the plot:

* *Volume, m3/ha* and *m3/plot*: The new *Volume,* *m3/plot* is the old *Volume,* *m3/plot* **minus** the *Affected volume m3/plot* (in case *Volume* has a value before the incident and the *Affected volume* has been entered to the incident). 🡪 The new *Volume,* *m3/ha* is the new *Volume,* *m3/plot / Plot area, ha.*
* *Number of stems for bamboo, 1000 stems/ha* and *1000 stems/plot*: The new *Number of stems for bamboo, 1000 stems/plot* is the old *Number of stems for bamboo, 1000 stems/plot* **minus** the *Affected number of bamboo stems, 1000 stems/plot* (in case *Number of stems for bamboo* has a value before the incident and the *Affected number of bamboo stems, 1000 stems/plot* has been entered to the incident). 🡪 The new *Number of stems for bamboo, 1000 stems/ha is* the new *Number of stems for bamboo, 1000 stems/plot* / *Plot area, ha*.
* *Forest type* should be updated according to the following rules:
  + If the new *Volume, m3/ha < 10 m3/ha* and *Number of stems for bamboo (1000 stems/ha) < 0.1* after the incident, then the *Forest type* should be updated according to the following rules:
    - If *Site condition* is 1 (= Soil mountain), *Forest type* is 82
    - If *Site condition* is 2 (= Rocky mountain), *Forest type* is 83
    - If *Site condition* is 3 (= Saline wetland), *Forest type* is 84
    - If *Site condition* is 4 (= Alkaline wetland), *Forest type* is 85
    - If *Site condition* is 6 (= Sandy soil), *Forest type* is 86
* If the new *Volume,* *m3/ha < 10 m3/ha,* the existing value has to be removed for the following parameters: *Natural forest origin, Plantation forest origin, State of plantation, Tree species, Planting year, Age class length, Average years to closed canopy*

**Land use changes**

**6. When entering a land use change** to an inventory plot, the system should update the following parameter values to the plot:

* *Forest use situation* = 2 (Previous forestry land) 🡪 When the plot gets the value 2 for the *Forest use situation*, all the values in the plot information sheets “Forest characteristics” and “Ownership info” should be removed (as the system does already now).

**Other changes**

**7. When entering another change increasing forest area/volume (*Type of change* = 1)** to an inventory plot, the system should update the following parameter values to the plot:

* *Volume, m3/ha* and *m3/plot*: The new *Volume,* *m3/plot* is the old *Volume,* *m3/plot* **plus** the *Change in wood volume m3/plot* (in case *Volume* has a value before the change and the *Change in wood volume* has been entered to the change). 🡪 The new *Volume,* *m3/ha* is the new *Volume,* *m3/plot / Plot area, ha.*
* *Number of stems for bamboo, 1000 stems/ha* and *1000 stems/plot*: The new *Number of stems for bamboo, 1000 stems/plot* is the old *Number of stems for bamboo, 1000 stems/plot* **plus** the *Change in number of bamboo stems, 1000 stems/plot* (in case *Number of stems for bamboo* has a value before the change and the *Change in number of bamboo stems, 1000 stems/plot* has been entered to the change). 🡪 The new *Number of stems for bamboo, 1000 stems/ha is* the new *Number of stems for bamboo, 1000 stems/plot* / *Plot area, ha*.

**8. When entering another change reducing forest area/volume (*Type of change* = 2)** to an inventory plot, the system should update the following parameter values to the plot:

* *Volume, m3/ha* and *m3/plot*: The new *Volume,* *m3/plot* is the old *Volume,* *m3/plot* **minus** the *Change in wood volume m3/plot* (in case *Volume* has a value before the change and the *Change in wood volume* has been entered to the change). 🡪 The new *Volume,* *m3/ha* is the new *Volume,* *m3/plot / Plot area, ha.*
* *Number of stems for bamboo, 1000 stems/ha* and *1000 stems/plot*: The new *Number of stems for bamboo, 1000 stems/plot* is the old *Number of stems for bamboo, 1000 stems/plot* **minus** the *Change in number of bamboo stems, 1000 stems/plot* (in case *Number of stems for bamboo* has a value before the change and the *Change in number of bamboo stems, 1000 stems/plot* has been entered to the change). 🡪 The new *Number of stems for bamboo, 1000 stems/ha is* the new *Number of stems for bamboo, 1000 stems/plot* / *Plot area, ha*.
* *Forest type* should be updated according to the following rules:
  + If the new *Volume, m3/ha < 10 m3/ha* after the change, then the *Forest type* should be updated according to the following rules:
    - If *Site condition* is 1 (= Soil mountain), *Forest type* is 82
    - If *Site condition* is 2 (= Rocky mountain), *Forest type* is 83
    - If *Site condition* is 3 (= Saline wetland), *Forest type* is 84
    - If *Site condition* is 4 (= Alkaline wetland), *Forest type* is 85
    - If *Site condition* is 6 (= Sandy soil), *Forest type* is 86
* If the new *Volume,* *m3/ha < 10 m3/ha,* the existing value has to be removed for the following parameters: *Natural forest origin, Plantation forest origin, State of plantation, Tree species, Planting year, Age class length, Average years to closed canopy*