

Table S1. Indicators evaluated. The reference indicators that appear in all comparisons are in bold

ECONOMIC CRITERIA

Criterion: persistence and stability of forest resources (see Valls-Donderis *et al.*, 2015 for the definition of the criteria)

Indicators	Short version of the indicators
Number of new plants per species of the tree layer in harvested area a certain time after harvesting	Regeneration
Vigour/vitality of a sample of the trees of each species per unit of area	Vitality
In case of reforestations and enrichment plantations, trees or seeds come from the same region where the forest is located	Reproduction material (RM): same region
Integrated pest management: chemical treatments are not used in a preventive manner and they are always used when there is no other possible way	Integrated pest management
Inventory of tree species populations	Populations
A maximum time for harvest remainders to stay in the forest is determined	Silvicultural remains
Thinning is not focused just on fast-growing individuals or those with a favourable morphology	Thinnings
In case of reforestations and enrichment plantations, the trees or seeds employed must be labelled and authorised	RM: labelled
In case of reforestations and enrichment plantations, the origin of trees or seeds must be varied	RM: varied

—Profitability of forest resources

Indicators	Short version of the indicators
Incomes resulting from selling the forest resources harvested	Incomes
Selling contracts that exist between the forest managers and enterprises	Selling contracts
Expenses resulting from management operations	Costs
Estimation of the demand of the forest resources produced	Demand
Current value of resources present in the forest (not harvested)	Present value
Percentage of forest area managed for production	Productive area
Incomes due to subsidies and other sources different from forest resources produced	Subsidies

—Diversified exploitation of forests

Indicators	Short version of the indicators
Estimation of the exploitation of potential resources to manage and sell	Potential harvest
Estimation of the demand of potential resources to manage and sell	Potential demand
Identification of potential resources to manage and sell (nowadays they are not managed nor sold)	Potential resources
Exploitation (harvest or use) per period of time of each of the existing forest resources	Harvest
Forest area managed for the provision of each of the existing forest resources	Resources area

SOCIAL CRITERIA

—Employment

Indicators	Short version of the indicators
Salaries and incentives respect collective agreements and are in accordance with regional standards	Salaries
Workers' training is suitable for their posts	Training
There is a working risks prevention plan	Health and safety
Number of working accidents in a certain period of time	Accidents
Working hours and extra work incentives are established in the contract	Timetables
Types of contracts depending on contract length and number of contracts of each type	Contract continuity
Number of working diseases produced in a certain period of time	Diseases
Number of employees in the forest	Workers

—Recreation

Indicators	Short version of the indicators
Number of visits for recreational purposes	Visits
Recreational infrastructures inventory: state of conservation	Recreational infrastructures
Types of recreational activities offered in the forest	Leisure activities
Study of potential recreational activities (which could be offered but they are not)	Potential activities
Estimation of the demand of potential recreational activities	Potential demand
Forest area managed for recreational use	Recreation area
Hunting fauna infrastructures inventory:	Hunting infrastructures

number, type and conservation state	
Captures number per species and period of time	Captures
Hunting species inventory	Hunting species inventory

—Visual character

Indicators	Short version of the indicators
Valuation by means of participation of the visual integration of recent human activities	Impact integration
Forest area covered by trees	Tree area
Forest area covered by scattered trees	Low density tree area
Valuation of the views from the main watching areas by means of participatory processes	Views
Length of paths, small roads and firebreaks in the forest	Paths and firebreaks
Forest area not covered by trees (scrubs, pastures)	No-tree area
Inventory of human elements (aerials, constructions, surveillance towers)	Isolated impacts
Main watching areas inventory: number and state of conservation	Viewpoints
Total forest area harvested the previous year	Harvest area

—Historical and cultural heritage

Indicators	Short version of the indicators
Tangible heritage elements inventory (natural o artificial): state of conservation	Elements
Valuation by means of participation of the maintenance of customs, traditions and right of use of forest resources	Traditions
Valuation by means of participation of the maintenance of the character of the places holding a religious, spiritual or inspirational significance	Places

—Participatory processes

Indicators	Short version of the indicators
Participants perceive that the final decision-making has considered their contributions during the process	Perceived impact
When final decisions are made by managers after the participatory process, participants know and understand how these decisions are made	Transparency
Agreements achieved	Agreements
Stakeholder groups or participants that have participated actively in the discussions	Active participants
Quality of the information on the objectives and expected development of the process that	Process information

participants have received	
Quality of the information on the topics to make decisions that participants have previously received	Context information
Management issues that include participatory processes in the decision-making process	Decisions
Conflicts that have been solved in each participatory process	Conflicts
Number of stakeholder groups and number of participants of each group in every participatory process.	Participants

—Education

Indicators	Short version of the indicators
Number of visits per period of time with educational objectives	Educational visits
Agreements for educational visits and informative sessions that exist between the forest managers and enterprises or educational institutions	Agreements
Forest educational infrastructures inventory: state of conservation	Educational infrastructures
Number of informative sessions per period of time that take place in the forest	Conferences

—Research

Indicators	Short version of the indicators
Agreements that exist for research projects between forest managers and universities, research centres and other public or private institutions or enterprises	Agreements
The information of statistical or research interest that has been gathered for monitoring and assessment processes is publicly reported	Public information
Forest area where research projects are being carried out	Research area

ECOLOGIC CRITERIA

—Biodiversity and habitats

Indicators	Short version of the indicators
Forest habitats inventory: state of conservation	Habitats
Rare, endangered and endemic species inventory	Endangered species
There are no barriers to fauna movements nor to seed dispersal, except when it is necessary to protect new plants or for other justified reasons	Ecological connectivity

Alien species inventory	Alien species
Vegetation layers in each vegetation formation	Vegetation layers
Flora species inventory	Flora
Wild fauna species inventory	Wild fauna
Presence of wood, dead trees and other habitat elements (stumps) where harvesting activities or silvicultural treatments have taken place	Silvicultural remains
Motor vehicles and forest machinery circulation restrictions	Vehicle restrictions

—Hydrological regulation

Indicators	Short version of the indicators
Forest area affected by different types of erosion: laminar, trails, gullies	Soil erosion
Forest area affected by compaction	Soil compaction
Flood control infrastructures inventory: adequate number and state of conservation (when the forest manager is responsible for their construction and maintenance)	Control infrastructures
Forest area managed for protection functions: avoid erosion and floods	Prevention area
Human infrastructures (paths and small roads, bridges) allow free water flow in hillsides and natural water channels	Free water flow
Forest area managed to generate water surpluses for aquifer filling	Aquifer filling area
Restrictions to the application of fertilisers and pesticides: quantity, composition, time of the year and allowed products	Fertiliser restrictions
Nutrient inventory every certain time in plots regularly distributed in the forest	Nutrients
Forest area suffering from soil infiltration problems	Impervious soil area

—Mass flows

Indicators	Short version of the indicators
Forest cover state in areas managed to prevent mass flows	Preventive vegetation
Inventory of mass flow events that have taken place per period of time and damages produced	Flows produced
Forest area managed to prevent mass flows	Preventive area
Mass flow regulation infrastructures inventory: state of conservation	Retaining infrastructures

—Forest fires

Indicators	Short version of the indicators
Causes of forest fires	Fire causes

Fuel discontinuities (including harvest remainders) between vegetation layers	Vegetation continuity
Fire prevention and extinction aid infrastructures inventory: number and state of conservation	Fire infrastructures
Forest area per period of time affected by forest fires	Fires affected area
Types of forest fires occurred: soil fire, superficial fire or tree crown fire	Fire types
Bush density	Bush density

—Carbon storage

Indicators	Short version of the indicators
Species composition of the tree layer that optimises carbon storage, considering climate and soil limitations, in areas managed to maximise biomass synthesis	Tree species
Forest area managed to maximise biomass synthesis	Storage management area
Quocient between area occupied by young vegetation formations and adult vegetation formations in areas managed to maximise biomass synthesis	Young-adult trees ratio
Total biomass in the forest (trunks, branches and leaves)	Total biomass
Number of trees in young vegetation formations in areas managed to maximise biomass synthesis	Young trees
Percentage of area under a tree canopy in adult vegetation formations in areas managed to maximise biomass synthesis	Adult trees cover
Forest area showing dry and cracked soils	Dry soils area
Forest area where soil structure has been broken or altered because of reforestations or paths or small roads construction	Altered soils area
In areas managed to comply with this criterion harvest and silvicultural treatments are avoided or minimised so as to keep soil carbon	Silviculture limitations

Indicator X	1	2	3	4	5	6	7	8	9
Indicator Y		1/2	1/3	1/4	1/5	1/6	1/7	1/8	1/9

This table shows the way each pair of indicators was presented for experts to evaluate them. Indicators *X* and *Y* are example indicators. For every pair, experts would choose a value from the scale on top if they considered that *Indicator X* is more important than *Indicator Y* and they would choose a value from the scale at the bottom if they considered that *Indicator Y* is more important than *Indicator X*; the higher the difference of importance perceived the more to the right the value would be put in either one scale or the other. If experts considered that both indicators have the same importance they would choose the value *1* (Saaty, 2006).