ACTION PA: **Preparatory Action**

Description:
The project ManFor C.BD. will start with Preparatory actions with the overall objective of setting up and refine the technical organisation of the project.
Apart from setting up and testing the proper operation of the Coordination office and of the Steering Committee of the project, Action PA will be devoted to select project test areas in details, including the location where the management options will be assessed and put into practice. Furthermore, during the Preparatory Phase, the Implementation Actions will be analysed and, if needed, the necessary adjustments will be made. The activities of the Implementation Phase will be planned according to the time schedule and proper steps will be taken to secure a straightforward organisation and exchange between the Actions.
During Action PA, indicators of carbon cycle and of biodiversity in forest ecosystems will be discussed and a list will be proposed to be put into practice in Action ForC and ForBD.

An overall Impact Assessment of Project's activities with respect to Natura 2000 conservation goals has not yet been prepared but, in accordance, with EC and national (both Italian and Slovenian) regulation, the Impact Assessment will be prepared during Action PA. Nevertheless, the proposed forest management operations are inspired and conformed to the principles of Sustainable Forest Management (SFM) and their goals are compatible with the conservation goals of Natura 2000 sites. The Impact Assessment will consider any possible negative impact suggesting prevention measures.
Furthermore, Management Plans taking into consideration Natura 2000 goals have been already adopted in several areas where the projects will take place, including the possibility of comprehensive conservation strategies coherent with SFM objectives. In those areas, forest management operations are generally focused on site conservation. The management options that will be designed and applied within the project will consider properly all the objectives of local management plans.
Additionally, it is worth to mention that both in Italy and Slovenia, for forest areas located within Natura 2000 sites where formal Management Plans have not been yet drafted, the Impact Assessment of the proposed management actions has to be included for the authorisation procedure.

Action PA will include three Preparatory meetings, one soon after the signature of the grant agreement with European Commission, to plan the activities of the Action and of the rest of the project, a second after three months from the starting date of the project and the final one at eight months from the starting date, where all the relevant decision on test areas will be taken and the final project schedule will be approved. The second meeting will include a session for stakeholders consultation.

Description of forest areas
The project will be implemented in public-owned forest areas managed by the National Forest Service (CFS), local offices for Biodiversity (UTB) or by Regional administration. At National level, the UTBs are under coordination of the Office for Biodiversity of CFS (CFS-UB), located in Rome.
The choice made to work into forests managed by public bodies, technically qualified and responsible of forest policy at national (CFS) and regional level, is aimed at reducing possible constraints and driven by the assumption of the wide impact attributable to the experiments, as for their guidance and further dissemination capability.

Target species/ecosystem types and forest district where the test areas will be located have been already identified. They are located along a North-South transect in Italy and an East-West transect between Slovenia and Italy, with beech (*Fagus sylvatica*), fir (*Abies alba*) and spruce (*Picea abies*) forests (partly in mixture) as main target species/ecosystem. Furthermore, other ecosystem types have been selected according to their relevance to local/regional management issues (e.g. Turkey oak (*Quercus cerris*) in Central Italy). In all the areas, forest management with different purposes occurred in the past and it is possible to design and implement management operations. All selected forests are located in mountain

areas, where the economic and social role of forestry is generally more relevant than in other conditions.
Many of the selected forest types are within priority habitats of European Union, the main of which are listed below:
9110 Luzulo-Fagetum beech forests
9130 Asperulo-Fagetum beech forests
9210 Apennine beech forests with *Taxus* and *Ilex*
9220 Apennine beech forests with *Abies alba* (and beech forests with *Abies nebrodensis*)
9410 Acidophilous Picea forests of the montane to alpine levels (*Vaccinio-picetea*)
9510 Southern Apennine *Abies alba*
In many of the areas, forests are within or include Natura 2000 sites.

The fact that the project will investigate forest areas with the same tree species/ecosystem types along transects will provide the added value of exploring the interactions among forest ecosystems, their management, climate and soil features. In this way, the demonstration value of the different management options that will be selected and applied will span over local to regional and national level.

Forest management options designed within the project will be performed within those described forests on a surface that will allow to study effects at stand/ecosystem level. Minimum size of intervention will be 8-10 ha and up to 20-30 ha when and if needed, according to forest condition, type of intervention, etc.. There will be 2 to 3 intervention in each test area, on different forest stands/patch, in order to test the effects on SFM indicators of varying silvicultural treatments.

The forest districts where the test areas will be selected are briefly described below, starting from North to South

CFS-UTB of Tarvisio (UD)
Friuli-Venezia Giulia Region, Province of Udine

Forest owned by “Fondo Edifici del Culto” of Ministry of Internal Affairs, under direct management by UTB-Tarvisio
Area: 23362 ha, 15152 ha with forests
Altitudinal range: 750 – 2750 m
Forest types: mixed forests of spruce, and beech (8.946 ha), subalpine spruce (1.263 ha).
Main management type: high forest with close-to nature silviculture. Forests are treated with border-shelterwood or group-shelterwood (Femmelschlag) cuttings. Long history of forest management plans (1888). Growing stock: 280 m3/ha, increment 4.58 m3/ha/yr. Annual cuttings: 30.000 m3.
The forest is partly included in Special Protection Zones (ZPS, 79/409/CEE) and in Sites of Community Importance (SIC, 92/43/CEE).

CFS-UTB of Vittorio Veneto
Veneto Region, Province of Treviso

Direct management of State forests. Natural Biogenetic Reserve *Pian Parrocchia-Campo di Mezzo* (established in 1977)
Area 667 ha
Forest types: beech
Main management type: high forest treated with shelterwood cuttings. Generally 700 to 1000 m3 of wood are extracted per intervention, over 10 to 15 ha.
The forest is included in Special Protection Zones (ZPS, 79/409/CEE) and in Sites of Community Importance (SIC, 92/43/CEE).

Regione Veneto
Town of Lorenzago di Cadore, province of Belluno

Forest owned by the village of Lorenzago di Cadore
Area: 1100 ha, bordering Region Friuli Venezia Giulia. Mesalpic climate
Altitudinal range: 800 – 1800 m
Forest types: fir forests of carbonatic and siliceous soils (800 – 1300 m); secondary montane spruce forests (1000 – 1350 m); spruce forests on carbonatic and siliceous soils (1300 – 1800 m)
Main management type: selection cuttings (from single-tree to small groups). Regeneration present in all treatment variants. Annual cuttings: 1660 m3 (26% of annual increment).
The area of Lorenzago di Cadore is included in one of the largest Special Protection Zone of the Alps (ZPS IT3230089 "Dolomiti of Cadore and Comelico") and contains two Sites of Community Importance (SIC, 92/43/CEE). Forests of Lorenzago are certified for Sustainable Forest Management by PEFC.
A letter of support by the Major of Lorenzago di Cadore is provided as Annex to the project.

CFS-UTB Vallombrosa (FI)
Toscana Region, Province of Firenze

Direct management of State forests. Biogenetic reserve of Vallombrosa (Natura 2000), established in 1977
Area: 1279 ha (forest cover: 99%)
Altitudinal range: 450 - 1.450 m
Forest types: pure fir forests (50%), beech in higher zones. In lower areas, calabrian pine (*Pinus laricio*), deciduous forests dominated by chestnut (*Castanea sativa*).
Main management type: high forest. Forest management is carried on following the Management Plan 2006 – 2025 with the main objective of rinaturalise the today simplified forest stands. An area of 100 ha of pure fir is included in the "Silvomuseo" (silvicultural museum), where the traditional management of clear-cut and artificial regeneration is carried on. Average annual cuttings performed directly by UTB-Vallombrosa are 1500 m3, mainly of conifers.
UTB-Vallombrosa has a long tradition in dissemination of forest management culture and in raising awareness on forests among local population and students who come from all the Country.

CFS-UTB of Castel di Sangro (AQ)
Abruzzo Region, Province of L'Aquila

Direct management of State and Regional forests
"Val Canneto" State forest, located in the National Park of Abruzzo-Lazio-Molise and Natura 2000 sites
Area: 212 ha
Forest types: beech
Main management type: coppice with standards, coppice under high forest, small patches of even-aged or irregularly-structured high forest. More or less regularly exploited until 1969 when it was bought by the State. Since then, a process of rinaturalisation is taking place, with increasing growing stocks. Coppice stands should undergo the conversion to high forests

"Valle cupa" State forest. External protection zone of National Park of Abruzzo-Lazio-Molise and partly in Natura 2000 sites.
Area: 213 ha
Forest types: beech
Main management type: coppice with standards. Historically overexploited until 1989 when it was bought by the State. Growing stock slowly increasing. Possibility to follow rinaturalisation processes

"Chiarino" State forest, located in the National Park of Gran Sasso and Laga Mountains and in Natura 2000 sites.
Area: 560 ha
Forest types: beech, mixed deciduous dominated by beech

Main management types: high forest, coppice with standards. The latter due to ageing is slowly converting to high forest. Possible intervention: conversion of coppice stands to high forests, thinning in high forest for structural diversity.

"Feudozzo" Regional Forest, SIC site
Area 344 ha
Altitudinal range: 900 – 1100 m
Forest types: turkey oak high forest (50%); mixed turkey oak and beech (100 ha); pure beech (40 ha); conifer plantation (30 ha)
Main management types: high forest, shelterwood treatments. In the beech forests, thinnings aimed at increasing structural diversity have been performed in 2005 under project LIFE04 NAT/IT/00190.

"Chiarano-Sparvera" Regional Forest, included in the external protection zone of the National Park of Abruzzo-Lazio-Molise and partially in Natura 2000 sites.
Area: 766 ha
Forest types: beech forests (95%)
Main management type: originally coppice with standards, now under conversion to high forest. In the last 20 years, treatments were aimed at converting coppice to high forest and at thinnings to increase structural diversity (also under LIFE NAT/IT/006244 and LIFE04 NAT/IT/00190
A letter of support of Region Abruzzo, the Administration owning the two forests of Feudozzo and Chiarano-Sparvera, is provided as Annex to the project.

CFS-UTB of Isernia (IS)
Molise Region, Province of Isernia

Direct management of State Forests Collemeluccio Natural State Reserve, established 1971. MAB-UNESCO Biosphere Reserve, Natura 2000 SIC and ZPS sites.
Area: 374 ha
Altitudinal range: 800 - 1.066 m s.l.m.
Forest type: mixed fir-turkey oak forest (lower elevation); beech.
Main management type: high forest

Montedimezzo Natural State Reserve, established 1971, MAB-UNESCO Biosphere Reserve, Natura 2000 SIC and ZPS sites.
Area: 291 ha
Altitudinal range: 903 - 1284 m
Forest type: beech forest (generally mono-layered, higher elevation); turkey oak pure or mixed stands (lower elevation)
Main management type: high forest
The project could work on the problem of natural regeneration of turkey oak stands.

CFS-UTB of Mongiana (VV)
Calabria Region, Province of Vibo Valentia

Direct management of State forests
Marchesale Biogenetic Reserve, Natura 2000 sites
Area: 1257 ha
Altitudinal range 750 – 1170 m
Forest types: beech, chestnut
Main management type: high forest (beech), aged coppice (chestnut). Mixed beech-fir high forest (5%). From 2000 to 2009, silvicultural intervention were implemented over 108 ha.

Cropani Micone Natural Biogenetic Reserve
Area: 237 ha
Altitudinal range: 950 – 1200 m
Forest types: beech, chestnut

Main management types: high forest (beech), aged coppice (chestnut). Silver fir is present. From 2005 to 2008, forest intervention over 38 ha.
The State Natural Reserve of Cropani – Micone, ruled by Local Office for Biodiversity of Mongiana (UTB Mongiana), that is hierarchically dependent from *Ispettorato Generale of Corpo Forestale dello Stato* in Rome. Hence, the letter of support from the Head of Corpo Forestale dello Stato provide the maximum possible support to the project's activities.

Boscarello State Forest
Area: 60 ha
Forest type: silver fir
Main management type: high forest
Silvicultural operations are planned for the near future.

Connections to forest inventory, monitoring and research
The different expertise of the project's partners and the strong support of national (CFS) and local stakeholders will provide the opportunity of a closer link between on-site management activities, long-term monitoring and research activities and to the grid of forest inventory.
In the proximity of all the forest districts where the project experimental areas will be established, a level II plot of the ICP-Forests intensive monitoring network is present and running since 1996. The support of CFS-Divisione 6° which is running the level II network in Italy (CONECOFOR) will provide access to datasets and monitoring data formerly framed into the Pan-European programme "Intensive Monitoring of Forest Ecosystems" and in progress within LIFE+ "FutMon".
Furthermore, the partners involved in the project have a long experience of experiments and monitoring in forest ecosystems. Long-term monitoring and research plots, established to test silvicultural trials or analyse long-term growth and yield of managed forests, will provide additional data and a further basis of scientifically sound knowledge about patterns and dynamics in progress into forests of the same type of those that will be investigated by the project.
The support of the Inventory Office of CFS will provide access and implementation of the standardised measuring protocols of the National Forest Inventory.

Definition of indicators of carbon cycle and of biodiversity
Action PA will be used also to discuss and define the proposed indicators to be assessed within Action ForC and ForBD. Furthermore, also the protocol to monitor those indicators will be defined in their general terms. The final definition and more specific details will be included in the activities of the respective action ForC and ForBD.

Action PA will start at month 1 and will be closed at month 8 of the project

Methods employed:
- Meetings
- teleconferencing
- information exchange via e-mail
- visits to the forest districts where the areas of the project will be selected

Constraints and assumptions:
No major constraints are expected during the preparatory phase. This phase will be crucial for a regular and smooth implementation of all the project.

Beneficiary responsible for implementation:
CNR
Other Beneficiaries involved in the Action: all

Expected results*:*
- Selection of forests areas managed by a technical public body acting at national level (CFS-UTB) and by regional administrations;

- Identification of the demonstrative large-sized plots within the selected target species/ecosystem types;
- designing of survey and sampling schemes
- preparation of protocols to harmonise working methodologies among different Actions in order to ensure comparability of results (also along time) and among forest areas
- itemizing of timing and parameters to be surveyed within the length of the project
- report on Impact Assessment of project's activities against Natura 2000 goals

Indicators of progress:
Number of persons attending preparatory meetings
Number of meetings held
Number of visits to forest districts
Selection of sites for experimental activities: 25% by January 2011; 50% by April 2011; 75% by June 2011; 100% by August 2011

ACTION PA-SI: **Preparatory Action in Slovenia**

Description:
The detail description of action *PA-SI* corresponds to the action *PA*, including also the details on Impact Assessment of Project's activities against Natura 2000 goals.

Description of forest areas
The project will be implemented in public-owned forest areas managed by the **Slovenia Forest Service** (SFS). Target species/ecosystem types and forest district where the test areas will be located have been already identified. They in Slovenia are located along a Southeast - Southwest transect (Italian – Slovenian border) with beech (*Fagus sylvatica*), fir (*Abies alba*) and spruce (*Picea abies*) forests (partly in mixture) as main target species/ecosystem. All selected forests are located in mountain areas, where the economic and social role of forestry is generally more relevant than in other conditions.

Many of the selected forest types are within priority habitats of European Union, the main of which are listed below:
4070 Bushes with *Pinus mugo* and *Rhododendron hirsutum* (*Mugo-Rhododendretum hirsuti*)
5130 *Juniperus communis* formations on heaths or calcareous grasslands
9110 Luzulo-Fagetum beech forests
9180 *Tilio-Acerion* forests of slopes, screes and ravines
91K0 Illyrian Fagus sylvatica forests (Aremonio-Fagion)
91L0 Illyrian oak-hornbeam forests (*Erythronio-Carpinion*)
9340 *Quercus ilex* and *Quercus rotundifolia* forests
9410 Acidophilous *Picea* forests of the montane to alpine levels (*Vaccinio-Piceetea*)
9420 Alpine *Larix decidua* and/or *Pinus cembra* forests

The fact that the project will investigate forest areas with the same tree species/ecosystem types along transects will provide the added value of exploring the interactions among forest ecosystems, their management, climate and soil features. In this way, the demonstration value of the different management options that will be selected and applied will span over local to regional and national level

Forest management options designed within the project will be performed within those described forests on a surface that will allow to study effects at stand/ecosystem level. Minimum size of intervention will be 8-10 ha and up to 20-30 ha when and if needed, according to forest condition, type of intervention, etc.. There will be 2 to 3 intervention in each test area, on different forest stands/patch, in order to test the effects on SFM indicators of varying silvicultural treatments.

The Associated Beneficiary SFI planned cooperation with SFS (Slovenian Forest Service) and BF (Biotechnical Faculty, Department of Forestry and Renewable Forest Resources) experts

to carry out action activities that are expressed in the breakdown of costs, allocating a portion of budget as external assistance costs (close to 10% of the budget).

The forest areas where the test areas will be selected are:

Kočevje region
The majority of forest in (treating) area are owned by Slovenian state
Forest area: 117.996 (78,55 % of forests), study objects at Rog (managed 35 ha / unmanaged – Rajhenav virgin forest 51,14 ha) and Kočevska Reka (managed xx ha)
Altitudinal range: 550 662.9 m – 1500 m
Forest types: mixed forests of fir, beech and spruce.
Main management type: high forest with close-to nature silviculture. Forests are treated with group-shelterwood (Femmelschlag) cuttings. Long history of forest management plans (since 1893). Growing stock: 306,02 m3/ha, increment 7,31 m3/ha/yr. Potential annual cuttings for region: 478.577 m3.

The forests are mainly included in NATURA 2000 network.

Postojna region, Snežnik area - Leskova dolina
The majority of forest in (treating) area are owned by Slovenian state
Forest area: 3000 ha (95 % of forests)
Altitudinal range: 650 – 1790 m
Forest types: mixed forests of fir, beech and spruce.
Main management type: high forest with close-to nature silviculture. Forests are treated with group-shelterwood cuttings. Long history of forest management plans (1864). Growing stock: 405 m3/ha, increment 8.00 m3/ha/yr. Annual cuttings: 22.000 m3.
The forest is mainly included in NATURA 2000 network.

Tolmin region, Trnovska planota area
The majority of forest in (treating) area are owned by Slovenian state
Forest area: 6.000 ha (95 % of forests), study object
Altitudinal range: 650 – 1495 m
Forest types: mixed forests of fir, beech and spruce.
Main management type: high forest with close-to nature silviculture. Forests are treated with group-shelterwood (Femmelschlag) cuttings. Long history of forest management plans (1771). Growing stock: 350 m3/ha, increment 7.00 m3/ha/yr. Annual cuttings: 19.000 m3 (Local UNIT Predmeja).
The forest is partly included in NATURA 2000 network.

Connections to forest inventory, monitoring and research
The different expertise of the project's partners and the strong support of national (SFS) and local stakeholders will provide the opportunity of a closer link between on-site management activities, long-term monitoring and research activities and to the grid of forest inventory.
In the proximity of all the forest areas districts where the project experimental areas will be established, a level II plot of the ICP-Forests intensive monitoring network is present and running since 2003. The SFI staff in co-operation with SFS is running the level II network in Slovenia (IM) will provide access to datasets and monitoring data formerly framed into the Pan-European programme "Intensive Monitoring of Forest Ecosystems" and in progress within LIFE+ "FutMon".

Furthermore, the partners (SFI, SFS, BF) involved in the project have a long experience of experiments and monitoring in forest ecosystems. Long-term monitoring and research plots, established to test silvicultural trials or analyse long-term growth and yield of managed forests, will provide additional data and a further basis of scientifically sound knowledge about patterns and dynamics in progress into forests of the same type of those that will be investigated by the project.

Definition of indicators of carbon cycle and of biodiversity
Action PA will be used also to discuss and define the proposed indicators to be assessed within Actions ForC & ForC-SI and ForBD & ForBD-SI. Furthermore, also the protocol to monitor those indicators will be defined in their general terms. The final definition and more specific details will be included in the activities of the respective action ForC & ForC-SI and ForBD & ForBD-SI.

Action PA-SI will start at month 1 and will be closed at month 8 of the project

Methods employed:
See under Action PA

Constraints and assumptions:
See under Action PA

Beneficiary responsible for implementation:
SFI/GDS
The Associated Beneficiary SFI planned cooperation with SFS (Slovenian Forest Service) and BF (Biotechnical Faculty, Department of Forestry and Renewable Forest Resources) experts to carry out action activities that are expressed in the breakdown of costs, allocating a portion of budget as external assistance costs (close to 10% of the budget).
In this respect, external costs will cover payment for the expected/agreed work with defined hourly rate/ fee, travel costs, needed to cover daily allowances according to the national legislation Specific work: help on the field for measurements. Assistance in data entry, technical support in the field. Support for sampling. All the external assistance will be awarded in agreement with existing regulation for public tendering.

Expected results*:*
See under Action PA

Indicators of progress:
See under Action PA