RE ACTION
estoration Actions to Combat Desertification
...the Northern Mediterranean

REACTION

MEDITERRANEAN RESTORATION INFORMATION SYSTEM: THE QUESTIONNAIRE

(Deliverable D2)

Project Co-ordinator: **Dr. V. Ramon Vallejo (CEAM)**
Contract number: **EVK2-CT2002-80025**
Duration of the project: **January 2003- December 2005**
Rev 2006

QUESTIONNAIRE

I. GENERAL INFORMATION

(Please use complete sentences. Fields will expand as necessary as you type)

I.1. General description

1. Project title: a) Full title
b) Project code *(acronym, for data base management purposes):*

2. Location
Country:
Region:
Counties included in project:
Toponymic site name:

Centre point coordinates (UTM):
X (m): Y (m):

3. Time Frame (implementation period of the project).
Date of first restoration actions:
Date(s) when additional actions were undertaken:

Date	Action

Date when project ended:
Date when this form is completed:

4. Size of Project:
Total size (ha):
If possible, indicate size at successive stages in the project (for example: 1952: 500 ha, 1960: 450 ha,...):

I. 2. Data sources

1. Project Contact:

Last Name: First Name:
Organisation: Job Title:
Street Address: City:
State: Postal code:
Phone: Fax number:
Email: Web page Address:
Relationship with the project:
Design ☐, Implementation ☐, Management of project area ☐, Research ☐, Other (describe):

2. Data form contact (person who fills out the form):

Data Contact same as Project Contact? ☐ *Yes* ☐ *No*

If no, please indicate:

Last Name: First Name:
Organisation: Job Title:
Street Address: City:
State: Postal code:
Phone: Fax number:
Email: Web page Address:
Relationship with the project:
Research ☐, Technical assistance ☐, Other (describe):

3. Cartographic data

If cartographic documents are available within the perimeter area of the project please attach and indicate here:

Type			**Contents**	**Date of data adquisition**	**Scale**	**Any copy provided?**		**Comments on accessibility**
Paper map	Digital map	Aerial-photo	(geology, land use, etc..)			Yes	No	(location, route, contact..)
☐	☐	☐				☐	☐	
☐	☐	☐				☐	☐	
☐	☐	☐				☐	☐	
☐	☐	☐				☐	☐	
☐	☐	☐				☐	☐	
☐	☐	☐				☐	☐	
☐	☐	☐				☐	☐	

4. If there is any preliminary (before project implementation) assessment of the project area, please indicate:

Date:
Source:
Contents:
Accessibility:

5. List articles and/or reports related to the project (last name of the author (s), first name initial, date, title of the document, source, pages):

6. Other information

List other available data sources, internal reports, etc. related to the project:

Date	*Contents*	*Source*	Any copy provided?		*Accessibility*
			Yes	No	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	
			☐	☐	

II. SITE DESCRIPTION

(This block is for indicating the more general characteristic for the project. Please indicate the singularities in the stand description).

II.1. CLIMATE

1. Reference weather station:
a) Location (coordinates) of the reference weather station:
b) Distance (straight line) from the project area (centre point) (km):
c) Elevation (m):
d) Period considered for rainfall data: e) Period considered for temperature data series*:*

	a) Annual average	b) S.D.	c) Month average											
			J	*F*	*M*	*Ap*	*My*	*Ju*	*Jul*	*A*	*S*	*O*	*N*	*D*
2. Rainfall (P, mm)														
3. PET (mm)														
4. Mean temp (T,ºC)														

5. Mean of minimum of coldest months (ºC):

6. Mean of maximums of warmest months (ºC):

7. a) Max. rainfall in 24 hours (mm) recorded during the period considered for rainfall data:
If available, please indicate return period (years):

b) Maximum monthly rainfall (mm) recorded during the period considered for rainfall data:

8. Duration (months) dry period (2T > P):

9. Duration (months) vegetative period (t > 5ºC):

10: Bioclimatic classification (e.g., type: semiarid; classification system: Emberger)
Type:
Classification:

11. Microclimates: ☐ Yes ☐ No ☐ Unknown
If present, describe:

12. Please indicate any notable singularities of the site (exceptional winds, unusual weather, …):

II.2. TOPOGRAPHY

If maps are available,please indicate in point I.2.3.

1. General Topography: Flat ☐ Hilly ☐ Undulating ☐ Mountainous ☐

2. Elevation range (m): **Max** **Min** **Most representative**

3. Slope (%): **<10%** **10-25%** **25-50%** **> 50%**
(% of area)

4. General aspect : **N** **NE** **E** **SE** **S** **SW** **W** **NW**
a) (% of area)
b) Most representative aspect*:*

5. Reference catchment (which includes the restored area):
a) Name: b) Catchment area (km^2):
c) Perimeter (km): d) Total length of main water course (km):

6. Location of project area within the catchment area:
a) Location: ☐ Upper watershed ☐ Middle ☐ Lower ☐ River banks/riparian ☐ Other (describe):
b) Project area (%) in relation to total catchment area:
c) Does the project area drain directly to a reservoir? ☐ Yes ☐ No

II.3. GEOLOGY

If maps are provided, please indicate in point I.2.3.

1. Bedrock class	**Type**	a) Present	b) % Surface
Igneous rock	Granite	☐	
	Rhyolite	☐	
	Pyroclastics	☐	
	Gabbro	☐	
	Basalt	☐	
	Peridotite	☐	
	Pyroxenite	☐	
	Serpentine	☐	
Metamorphic rock	Gneiss	☐	
	Quartzite	☐	
	Schist	☐	
	Marble	☐	
Sedimentary rock	Conglomerate	☐	
	Sandstone	☐	
	Siltstone	☐	
	Shale	☐	
	Limestone	☐	
	Marl	☐	
	Gypsum	☐	
Unconsolidated	Fluvial, lacustrine, marine, colluvial	☐	
Other		☐	

2. Degree of bedrock cracking or weathering:

☐ Absence of rock at less than 60 cm.
☐ Soft or very fissured rock
☐ Relatively soft or moderately altered or fissured rock
☐ Lightly fissured or altered rock
☐ Non-fissured or hard rock
☐ Presence of hard rock outcrops on the surface

II.4. SOILS

If maps are provided, please indicate in point I.2.3.

1. Soil description and types (see Annex 1)**:**

2. Texture:	Dominant:	Range of textures:
3. Soil depth (cm):	Average:	Range of soil depths:
4. Wate reserve(mm):	Average:	Water reserve range (mm):

II.5. ECOLOGY

1. Vegetation life zone (see Annex 2)**:**

Cryo-Mediterranean	☐	Montane-Mediterranean	☐	Thermo-Mediterranean	☐
Alti-Mediterranean	☐	Supra-Mediterranean	☐	Infra-Mediterranean	☐
Oro-Mediterranean	☐	Meso-Mediterranean	☐		

2. Are there any paleoecological data available *(pollen records, charcoal fragments, tree ring analysis...)* **on past ecosystems and/or disturbance regime?** ☐ Yes ☐ No ☐ Unknown

If yes, please describe:

3. Are there any areas considered as potential or reference ecosystem(s) for the restored area?

☐ Yes ☐ No ☐ Unknown

If yes, please describe:

If available, provide details on location (coordinates, UTM):

II.6. DEGRADATION IMPACTS AND DRIVERS

1. Main degradation impacts *(before the project)*	**% Project area affected**	**Impact severity**			**Additional comments on impacts**
		low	medium	high	
☐ Deforestation		☐	☐	☐	
☐ Species loss		☐	☐	☐	
☐ Exotic invaders		☐	☐	☐	
☐ Pest and diseases		☐	☐	☐	
☐ Soil erosion		☐	☐	☐	
☐ Flooding		☐	☐	☐	
☐ Landslides, debris flows		☐	☐	☐	
☐ Soil salinisation		☐	☐	☐	
☐ Soil toxicity, pollution		☐	☐	☐	
☐ Wildfires		☐	☐	☐	
☐ Others (describe):		☐	☐	☐	
☐ Others (describe):		☐	☐	☐	

2. Degradation drivers	**Period of activity** Please indicate decades (approx.). e.g. 1950s - 1980s, Only at present, etc.	**Still active today?**				**Main root causes** (poverty, political strife, increase or decrease of population density, mismanagement of land, etc.)
		Less intense	More intense	Equal intense	No	
☐ Marginal agriculture		☐	☐	☐	☐	
☐ Overgrazing by wild animals		☐	☐	☐	☐	
☐ Overgrazing by domestic animals		☐	☐	☐	☐	
☐ Over-exploitation of fuel-wood		☐	☐	☐	☐	
☐ Over-exploitation of timber wood		☐	☐	☐	☐	
☐ Land abandonment		☐	☐	☐	☐	
☐ Urbanisation		☐	☐	☐	☐	
☐ Pollutants		☐	☐	☐	☐	
☐ Others (describe)		☐	☐	☐	☐	

3. Environmental risk/hazards in the project area	**Year(s) of the last recorded events or periods** Example: 1975, 1960-65, 1940, 1915			
☐ Prolonged drought periods				
☐ Killing frost periods				
☐ Frequent and/or severe wildfires				
☐ Extreme rainfall events (major erosion event, flooding)				
☐ Others (describe)				

III. RESTORATION PROCESS

III.1. RESTORATION GOALS

1. What were the general project's defined objectives?:

2. Scope of the project:

☐ Restoration action/programme ☐ Pilot restoration for policy makers and managers ☐ Research ☐ Educational ☐ Other: ……...

3. Structure goals:

a) Target biological communities/ecosystems to be restored:

b) Does this project target the protection or conservation of specific species?

☐ Yes ☐ No

If yes, please list.

Species

c) Does this project try to Introduce or Eradicate a species as part of restoration or conservation efforts? ☐ Yes ☐ No

If yes, please list and place an **"X"** *in each column to show whether the species is being* ***Introduced*** *or is targeted for* ***Eradication****.*

Species	Want to Introduce	Want to eradicate
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐
	☐	☐

d) Other structural goals (e.g. promote understorey cover, encourage regeneration or growth, establish/increase forest mosaic, etc…):

4. Functional goals and expected ecosystem services:

☐ Productivity ☐ Biodiversity conservation ☐ Fire control ☐ Air quality
☐ Agriculture production ☐ Riparian protection ☐ Weed control ☐ CO_2 sink
☐ Forestry production ☐ Wildlife habitat ☐ Seed source ☐ Other:
☐ Grazing/pasture lands ☐ Erosion control ☐ Water infiltration
☐ Hunting ☐ Flood control ☐ Water filtration/quality

5. Goals at landscape level:

☐ Increase connectivity ☐ Increase landscape diversity ☐ Increase forest surface ☐ Rural planning
☐ Other. Please, describe:

6. Which ecosystem goods were expected to be obtained/increased?

☐ Wood products
☐ Non-timber forest products (e.g., edible mushrooms, aromatic plants, etc.). Please specify:
☐ Animal products. Please specify:
☐ Others. Please specify:

7. Was the enhancement of the recreational/tourist/cultural value of the area a specific goal?

☐ Yes ☐ No ☐ Unknown

If yes, please specify:

8. Was the creation of jobs a specific goal? ☐ Yes ☐ No ☐ Unknown

If yes, please specify number and type (permanent/seasonal..):

III.2. PLANNING

1. Main stages provided for the control/reduction of degradation causes (passive restoration)? Please specify when and for how long were these stages to be carried out:

2. Main stages provided for the field work (active restoration)?. Please specify when and for how long were these stages to be carried out?:

3. Is the project related to any previous or parallel project? ☐ Yes ☐ No

If yes, please describe:

4. Has a previous/parallel project been described in a different form? ☐ Yes ☐ No
If yes, please indicate project(s) code(s):

5. Does the forest have a management plan? ☐ Yes ☐ No
What is the legal/policy framework?:

III.3. COST, FINANCING, AND PARTICIPANTS

1. Project cost & financing
a) Total cost of implementation (Euros): Ref. Date:
b) Average annual cost for maintenance (Euros): Ref. Date:
c) Sources of financing:
d) Other relevant information:

2. International, national or regional programmes and/or plans related to the project:

3. Agencies/groups involved in the project:

Role	Private company	Public company	Public administ.	Local association	NGOs	Other	Name
Landowner	☐	☐	☐	☐	☐	☐	
Design & planning	☐	☐	☐	☐	☐	☐	
Implementation (fieldwork)	☐	☐	☐	☐	☐	☐	
Management (tech. direction)	☐	☐	☐	☐	☐	☐	
Economical exploitation	☐	☐	☐	☐	☐	☐	
Monitoring	☐	☐	☐	☐	☐	☐	

III.4. GENERAL TECHNICAL DESCRIPTION

1. Structures and facilities developed (if any) within the project. **Describe**:
☐ Roads:
☐ Fire protection (fire breaks,…):
☐ Livestock (enclosure, passageways, etc.):
☐ Recreational facilities, for children, school groups, tourist, other:
☐ Technical measures of erosion control (ditches, dams, etc.):
☐ Special measures for electrical lines or gas transmission pipes:
☐ Other infrastructure:

2. Has any traditional technology been applied? ☐ Yes ☐ No. If yes, please describe:

3. Has any innovative technology been applied? ☐ Yes ☐ No. If yes, please describe:

4. Are there any quality standards for the seedlings? ☐ Yes ☐ No ☐ Unknown
If yes, please describe:

5. Are there quality standards for the work? ☐ Yes ☐ No ☐ Unknown
If yes, please describe:

6. Are there defined success criteria for the project? ☐ Yes ☐ No
If yes, please describe:

III.5. MONITORING AND ASSESSMENT

1. Was there any monitoring/assessment carried out since the beginning of the project? ☐ Yes ☐ No
If yes,
a) Which elements were taken into account?: ☐ Technical ☐ Ecological ☐ Socio-economic
b) At what intervals/period was the monitoring carried out?
c) Describe briefly the methodology for monitoring:

2. Was any new field assessment carried out in order to complete this form? ☐ Yes ☐ No
If yes, a) Which elements were taken into account?: ☐ Technical ☐ Ecological ☐ Socio-economic
b) Describe briefly the methodology applied:

III.6. ENVIRONMENTAL OR TECHNICAL UNITS *(This item is related to the sections IV and V, including detailed information about each unit)*

1. Has the project different units? ☐ Yes ☐ No. If yes, Number of units:
(if available, provide maps with the perimeter of the units and indicate in section I.2.3.)

IV. TECHNICAL DESCRIPTION BY RESTORATION UNITS

If the project has spatial variation fill this section for each differentiated unit.

IV.1. UNIT DESCRIPTION

(Don't fill out this entry if the project does not have different units)

1. Project acronym/code (see I.1.1b)**:**
2. Unit number/code (internal numerical code, related with the map indicate in I.2.3):
3. Specific objective (select from section III.1 and give details):
4. Unit specificity due to :
☐ Environmental characteristics ☐ Technology ☐ Species used
☐ Implementation period/stage ☐ Previous land use ☐ Intended/actual land use ☐ Other:
5. Surface extension, in relation to total project (%):
6. Implementation period of this unit (dates):
7. Any previous restoration actions applied to this unit? ☐ Yes ☐ No. If yes, please describe:
Has the previous restoration action been described as a different unit?
☐ Yes. Unit number/code: ☐ No. Please explain the reasons:

IV.2. SPECIFIC ENVIRONMENTAL CHARACTERISTICS

(if the project does not have different units, refer to the whole project hereafter):

1. Microclimate

2. Geology:

3. General Topography:
a) Elevation (m): b) Slope (%): c) Aspect:

4. Soil description (see Annex 1):
5. Soil depth (cm):
6. Water reserve (mm):

7. Texture:
Does texture become heavier down the profile? ☐ Yes ☐ No
If yes, Is this a gradual or abrupt change?

8. Rock fragments (in brackets % rock-fragment cover):
☐ Bare to slightly stony (<20)
☐ Stony (20-60)
☐ Very stony (>60)

9. Carbonates
☐ Non calcareous ☐ Moderately calcareous
☐ Slightly calcareous ☐ Extremely calcareous

10. pH
☐ Acid (<5.5)
☐ Slightly acid (6.5-5.5)
☐ Neutral (6.5-7.5)
☐ Slightly basic (7.5 –8.5)
☐ Very basic (> 8.5)

11. Nutritional status
☐ Good
☐ Medium
☐ Low
Limitant(s) nutrient(s). Describe:

12. Compactation/cementation grade
☐ Strongly
☐ Indurated
☐ Moderately
☐ Not cemented nor compacted
☐ Surface compaction only

13. Drainage
☐ Excessive ☐ Somewhat excessive ☐ Good drainage ☐ Poorly drained ☐ Permanent surface water layer

14. Erosion (before the project):
Erosion/accumulation type: Erosion/accumulation intensity:

15. Land use /cover type
a) Previous land use: b) Actual land use:
c) Previous plant formation:

16. Main degradation impact (select from section II.6 and give details):

IV.3. PROMOTION OF AUTOGENIC RESTORATION: ☐Yes ☐No

1. Describe management practices for existing vegetation to promote autogenic restoration / regeneration:

- ☐ Heavy pruning (coppice) to reinforce tree vigour
- ☐ Selective pruning of branches
- ☐ Removal of biomass around selected trees or seedlings
- ☐ Thinning and selection among young seedlings and saplings
- ☐ Dissemination and seeding of native species present but not regenerating rapidly
- ☐ Other. Describe:

2. Was protection of self-seeding natives undertaken? ☐Yes ☐No
If yes, describe (fencing, individual sapling protection,…):

IV.4. PRIOR ACTION ON BRUSH VEGETATION: ☐Yes ☐No

1. Describe application:

a) Date(s):	b) Species treated: ☐All ☐Selective Describe:	c) Area treated (total, strips,...):	d) Method:	d) Equipment:	e) Difficulties encountered:

IV.5. SITE PREPARATION ☐Yes ☐No, Date(s):

1. Describe application:

2. Area affected	**3. Alteration of soil profile**	**4. Type of operation**	**5. Cultivation depth**
☐ Single points ☐ Lines ☐ Continuous ☐ Other. Describe:	☐ Not altered ☐ Partly altered	☐ Manual ☐ Mechanical	☐ Surface (<40 cm) ☐ Medium (40-60 cm) ☐ Deep (> 60 cm)

6. Difficulties and limitations encountered were due to:
☐ Parent rock ☐ Soil depth ☐ High stone content ☐ Steep slope ☐ Weather ☐ Tree density
☐ Amount of shrub volume ☐ Accessibility ☐ Others, describe:
☐ No difficulties encountered

7. Equipment
Describe:

IV.6. PLANTING & SEEDING: ☐Yes ☐No , Dates(s):

1. Species used	Planted	Seeded	**2. Provenance**	**3. Area of application** (% of total)	**4. Type of distribution** a) in the whole area	b) in certain habitats	c) Describe:
	☐	☐			☐	☐	
	☐	☐			☐	☐	
	☐	☐			☐	☐	
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5. Criteria for species selection (Rating from 1 to 10)

Ecological criteria		Management criteria		Technical criteria
Disturbance regime		Production		Nursery limitations
Degree of land degradation		Traditional use		Seed availability
Species autoecology		Multifunctional use		Others:
Potential vegetation		Conservation		
Others		Others		

6. Describe application:
a) Type: ☐ Planting ☐ Seeding ☐ Both . Describe:
b) Equipment:
c) weather conditions on proximate days? ☐ Unknown ☐ Favourable ☐ Unfavourable. Describe:
d) Limitations / difficulties encountered (dry soils , seed/seedling predation,…):

7. Description of seedling / seeding mix	Seedlings (if applicable)				Seeding mix (if applicable)	
a) Species	b) Age of seedling	c) Nursery container		d) Density (nº/ha)	e) Dosage (kg/ha)	f) Seed pre-treatment
		Type	Volume (cm^3)			

IV.7. FIELD TREATMENT / MAINTENANCE WORKS / MANAGEMENT

1. Reinforcement planting/seeding		**By planting?** ☐ Yes ☐ No			**By seeding?** ☐ Yes ☐ No	
a) Species	b) Provenance	c) Nº Periods	d) Mortality (%)	e) Main agent of mortality	Dosage (Kg/ha)	% Surface application

2. Pruning. Describe, if any, in terms of: a) species: b) method: c) intensity: d) age of pruning:	**3. Thinning.** Describe, if any, in terms of: a) species: b) method: c) intensity: d) age of thinning:
4. Was fertilizer used? ☐ Yes ☐ No a) If yes, what type: b) at what rate: c) when:	
5. Was the site irrigated? ☐ Yes ☐ No a) Was irrigation ☐ regularly scheduled or ☐ supplemental/as needed b) Frequency: c) When: d) Dosage: e) Method (drip, overhead sprinkler, hand, etc.):	
6. Were tree shelters used? ☐ Yes ☐ No If yes, what type: a) When?: b) For how long?	
7. Was weed control applied? ☐ Yes ☐ No a) If yes, what type: b) When:	
8. Parasite and pest control: Describe treatments (if any) for damages caused for abiotic factors, insects and/or diseases	
9. Grazing management (Frequency: months/year; Grazing pressure: animals/ha; Stocking rate). Describe:	
10. Other maintenance/management activities:	

V. ASSESSMENT BY RESTORATION UNITS

1. Project acronym/code (see I.11b)**:**	**2. Unit number/code** (see IV.1.2)**:**

V.1. PLANTATION / SEEDING RESULTS

Please indicate the average or the most representative data for each variable (when applicable) & for each species

1. Reference (assessment) date:

2. Have the performance standards for the seeds/seedlings been attained? *(Only if there are quality standards)*
☐ Yes ☐ No ☐ Partly ☐ Unknown

3. Have the performance standards been attained for the work (site preparation, plantation,..)?
☐ Yes ☐ No ☐ Partly ☐ Unknown

4. Plant cover (%) Total: Tree species: Shrub species: Herbaceous species:

5. Above-ground biomass (kg/ha) Total: Tree species: Shrub species: Herbaceous species:

6. Species used	by planting	by seeding	a. Survival (%)	b. Density (individuals/ha)	c. Cover (%)	d. Height (m)	e. Diameter at breast height (cm)	f. Basal diameter (cm) *(only for young*	g. Wood volume (m3/ha)	h. Natural regeneration? (yes/no)	i. Average age (years)	j. Age distribution		
												Mixed – young	Mixed – old	Mono
	☐	☐										☐	☐	☐
	☐	☐										☐	☐	☐
	☐	☐										☐	☐	☐
	☐	☐										☐	☐	☐
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V.2. STRUCTURE & BIODIVERSITY

1. Stand/unit age: ☐ Old ☐ Mature ☐ Young

2. Tree canopy structure: ☐ Multi-layered ☐ Mono-layered ☐ Absence of tree layer

3. Understorey: ☐ Varied and multi-layered ☐ Herbaceous layer and scatter woody plants ☐ Absent
☐ Other. Describe:

4. Spatial distribution of trees: ☐ Regular ☐ Slightly clumped ☐ Patches and gaps

5. How natural is the composition of tree species? ☐ Fully ☐ Partly ☐ Exotic

6. How natural is the composition of other species? ☐ Fully ☐ Partly ☐ Exotic

7. List the alien species present, if any:

8. Cover of sprouter species: Total: Tree species: Shrub species:

9. Biological inventories:

Please list species inventoried and indicate number of species by taxa, if available

Taxa	a) Before the project. Reference date:	b) After the project. Reference date:
Flora *(please indicate taxa: vascular plants, ferns, mosses)*	*Inventory:*	*Inventory:*
	Dominant species:	Dominant species:
	Rare / Endangered / Threatened / Protected:	Rare / Endangered / Threatened / Protected:
	Total number of species inventoried:	Total number of species inventoried:
Fauna *(please indicate taxa: mammals, birds, reptiles, invertebrates..)*	*Inventory:*	*Inventory:*
	Dominant species:	Dominant species:
	Rare / Endangered / Threatened / Protected:	Rare / Endangered / Threatened / Protected:
	Total number of species inventoried:	Total number of species inventoried:
Others *(Please indicate taxa: fungi, lichens, algae, ..)*	*Inventory:*	*Inventory:*
	Dominant species:	Dominant species:
	Rare / Endangered / Threatened / Protected:	Rare / Endangered / Threatened / Protected:
	Total number of species inventoried:	Total number of species inventoried:

10. Absence of keystone or dominant species that would be expected: ☐ Yes ☐ No ☐ Unknown

If yes, please list:

11. Are any functional groups (shrub layer, annual legumes, perennial grasses, etc.) missing or endangered? ☐ Yes ☐ No ☐ Unknown

If yes, please list:

12. Presence of key species indicative of ecosystems at particular succesional stage: ☐ Yes ☐ No ☐ Unknown

If yes, please list:

13. Presence of key species indicative of integrity of food webs: ☐ Yes ☐ No ☐ Unknown

If yes, please list:

14. Are there any genetic data available: ☐ Yes ☐ No ☐ Unknown

If yes, please list:

V.3. FUNCTIONS & PROCESSES

1. Are there significant amounts of dead wood present in varying stages of decomposition? ☐ Snags ☐ Down logs ☐ Not significant

2. Average organic horizon thickness (cm):

3. Soil surface conditions:

Bare soil (%):

Degree of soil sealing/crusting: ☐ None ☐ Slight ☐ Moderate ☐ Severe

Presence of significant patchy or continuous biological crust? ☐ Yes ☐ No

4. Erosion/accumulation type

- ☐ None
- ☐ Sheet erosion
- ☐ Rill erosion
- ☐ Gully erosion
- ☐ Badlands
- ☐ Accumulation
- ☐ Wind erosion/deposition
- ☐ Others (describe):

5. Erosion/accumulation intensity

- ☐ Nil
- ☐ Slight
- ☐ Medium
- ☐ Moderate
- ☐ Severe
- ☐ Extreme

6. Stand dynamics

Succesional dynamics measured or observed (e.g. abandoned crop→gorse shrubland→pine forest→mixed forest)**:**

a) since the project implementation: → → → →

b) of non-restored reference area nearby during the same period: → → → →

7. Did any relevant disturbance, such as fire, severe drought/frost, floods, pollution event, etc., affect the restored unit since project implementation? Yes ☐ No ☐ Partly

If yes, please indicate the disturbance regime and regeneration pattern(s):

8. Disturbance regime		**9. Regeneration pattern following the disturbance**			
Disturbance type/s	**Date/s** (year/s)	**Autosuccesion** (yes/no)	**Relevant composition change** (yes/no)	**Relevant land degradation** (yes/no)	**Describe regeneration pattern**

10. Any available data on stand productivity/carbon sequestration? Describe:

V.4. STAND / UNIT HEALTH

1. Are there significant pests, diseases or invasive species? ☐ Yes ☐ No

2. Are there significant damages caused by abiotic factors? ☐ Yes ☐ No

3. Species affected	**4. Dead trees/shrubs (or main branches)** (No, Some, Many)	**5. Degree of defoliation** (None, Slight, Moderate, Severe)	**6. Degree of discoloration** (None, Slight, Moderate, Severe)	**7. Main abiotic factor causing the damages**	**8. Main biotic factor causing the damages**

VI. PROJECT ASSESSMENT

VI.1. LANDSCAPE & ENVIRONMENTAL ASSESSMENT

1. Proportion of uses at regional scale (%)

Agricultural Forestry Urban & Unproductive Others ( )

Please indicate the name of the reference region/province/county:

2. Which ecosystems/habitats once occurred and now occur in the project area?

(Select the habitats most representative for each situation, and indicate the principal species)

	a) Before the project (*see below)	b) % of project area	c) Main species	d) Present	e) % of project area	f) Main species
Mixed Mediterranean evergreen woodland forest.	☐			☐		
Mediterranean shrublands (macchia, matorral, garrigue, phrygana,…)	☐			☐		
Evergreen oak woodland	☐			☐		
Deciduous forest	☐			☐		
Pine forest	☐			☐		
Other conifer forest	☐			☐		
Savannah-type ecosystem (e.g., dehesa)	☐			☐		
Steppes	☐			☐		
Permanent grassland, prairie	☐			☐		
Annual grassland	☐			☐		
Riparian ecosystem	☐			☐		
Orchards, tree crops, etc.	☐			☐		
Annual winter crops	☐			☐		
Annual summer crops	☐			☐		
Bare land (fallows)	☐			☐		
Other (describe):	☐			☐		

*Please indicate the reference date (e.g., at the time of project implementation; 25, 50, etc. years before project implementation; etc.):

3. In the project area, are there any abandoned agricultural terraces? ☐ Yes ☐ No. If yes:

a) Date of abandonment of most of them –year(s) or decade(s):

b) Are they narrow (limiting agricultural mechanisation)? ☐ Yes ☐ No

c) What is their current degree of conservation? ☐ Good ☐ Medium ☐ Poor

d) Have they been repaired within the framework of the project? ☐ Yes ☐ No

4. Are there protected areas in the project area: ☐ Yes ☐ No

a) Describe relevant legislation (if any) related to species or habitat protection (add reference dates):

b) Natura 2000 and other protected habitats:

c) Are there protected ecological corridors ? ☐ Yes (since, date:) ☐ No.

d) Is there a protected area network ? ☐ Yes (since, date:) ☐ No

5. Landscape pattern: *(Please, provide maps if possible and indicate it in section I.2.3.)*	**Yes**	**No**	**Partly**	**Please, describe:**
a) Is the project area connected to other similar ecosystem/habitat(s) in the sorrounding area?	☐	☐	☐	
b) Are project habitats fragmented into a number of patches?	☐	☐	☐	
c) Habitat patches within the project area are close enough to allow free interchange of species?	☐	☐	☐	
d) Is there a natural gradation between habitats within the project area?	☐	☐	☐	

e) Are project edges natural?	☐	☐	☐
6. Are there negative visual impacts?	**Yes**	**No**	**Please, describe:**
a) Resulting from project implementation (e.g., terracing or subsoiling impacts):	☐	☐	
b) Resulting from project maintenance works	☐	☐	
c) Resulting from exploitation works	☐	☐	
d) Resulting from other works	☐	☐	

7. Flooding assessment at landscape/catchment scale	**Before the project** Reference period:	**Since project implementation** Reference period:
a) Flood frequency	☐ Nil ☐ Once every 1-10 years ☐ Once every 10-20 years ☐ Once every 20-50 years ☐ Once every > 50 years	☐ Nil ☐ Once every 1-10 years ☐ Once every 10-20 years ☐ Once every 20-50 years ☐ Once every > 50 years
b) Date of last recorded flood event (year(s))		
c) Comments on damages from last recorded flood event		

8. Erosion assessment at landscape/catchment scale	**Before the project** Reference period:	**Since project implementation** Reference period:
a) Erosion/sedimentation rate (Mg ha^{-1} $year^{-1}$)		
b) Method of assessment (USLE estimation, lake/reservoir/dam sedimentation, measurements at plot/catchment scale, etc.)		

VI.2. SOCIO-ECONOMIC ASSESSMENT

1. What types of exploitation were and are most frequent in the area:

Types of exploitation	a) Before the project (*see below)	b) % of project area	c) Actual	d) % of project area	e) Date of abandonment (year/s or decade/s)
Field agriculture	☐		☐		
Orchards (olive trees, etc.)	☐		☐		
Bee-keeping	☐		☐		
Pasture lands	☐		☐		
Planted forest-tree crops (e.g., cork, timber, pulp,...)	☐		☐		
Managed semi-natural forest or coppice	☐		☐		
Aromatic plants	☐		☐		
Edible mushrooms	☐		☐		
Urban: residential, tourist facilities, etc.	☐		☐		
Others:	☐		☐		

*Please indicate the reference date (e.g., at the time of project implementation; 25, 50, etc. years before project implementation; etc.):

2. Does significant grazing take place in the project area? ☐ Yes ☐ No

a) Indicate **species** and **livestock population** (data on past, present and projections for future, if available)

Type of livestock	Before the project Ref. Date:	At present	Projection for the future Ref. Date:

b) Comments on past, present and projections for future census and exploitation systems in the restoration area:

3. Are timber and other wood products exploited: ☐ Yes ☐ No

a) Type of timber and other wood products (species)	b) Volume produced/year:

c) Is timber and other wood products felled for use for local people? ☐ Yes ☐ No

If yes, describe:

4. Are non-timber forest products collected? ☐ Yes ☐ No

a) If yes, please list:	b) What is their economic importance? (high/medium/low)

c) Does hunting take place? ☐ Yes ☐ No

5. Employment

a) Did project implementation works generate jobs for the local population? ☐ Yes ☐ No

b) Does the restored area provide jobs at present? ☐ No ☐ Occasional ☐ Permanent

If yes, describe:

c) Number (approximate) of people employed in the restored area ? Occasional/year: Permanent:

6. Homeland

a) Are people living in the restored area? ☐ Yes ☐ No

b) If yes, indicate type of lifestyle: Indigenous ☐ Settled ☐ Part-time/Second home

c) Human population dynamics in the project area in the last 20 years:

Type (increase/decrease): Rate of change (low/medium/high):

7. Recreational and educational value

a) Uniquiness of particular sites within the restored area? ☐ Yes ☐ No. If yes, describe:

b) Do people use the restored area for recreation? ☐ Yes ☐ No

c) Average number of visitors/year (*approximate value*)

d) Presence of tourist or educational facilities (*visitor centre, guide trails,...*): ☐ Yes ☐ No

If yes, please list number and types*:*

e) Types of activity (walking, hunting,...)

f) Is the area used in scientific work? ☐ Yes ☐ No. If yes, describe:

8. Cultural value

a) Does the project area have particular significance to local inhabitants? ☐ Yes ☐ No

b) Are there important cultural or religious sites present in the project area?: ☐ Yes ☐ No

(*World Heritage sites, sacred groves, trees, burial sites, buildings, ..*)

c) If yes, list sites, types, designations and indicate if they have official protection:

d) Presence of culturally important lanscapes: *(land management, grazing system,…)* ☐ Yes ☐ No

If yes, please describe:

e) Are there references in folklore, literature, etc. to the project area? ☐ Yes ☐ No ☐ Unknown

f) After the project implementation, were there any negative impacts to cultural sites/landscapes? ☐ Yes ☐ No

If yes, please explain briefly:

g) Have the cultural sites/landscapes been protected in the framework of the project? ☐ Yes ☐ No ☐ Partly

9. Local participation

a) In relation to the project, the local population has a position of?

☐ Participation ☐ Indifference ☐ Opposition ☐ Boycott

b) Are local people involved in decisions about the project area? ☐ Yes ☐ No

c) What is the nature of participation?

d) Has a questionnaire been prepared concerning local people's perception of the project (participatory approach)?

☐ Yes ☐ No ☐ Unknown

Was it intended to make the population:

- more sensitive to risks (wildfires, floods, erosion, etc.)? ☐ Yes ☐ No ☐ Unknown
- more aware of the advantages of ecological restoration? ☐ Yes ☐ No ☐ Unknown
- other? (Please specify)

VII. SUMMARY

VII.1. ACHIEVEMENT OF PROJECT GOALS

1. Have the defined success criteria (if any) been attained? *(see section III.4.6 and sections V & VI)*

☐ Yes ☐ No ☐ There were not defined success criteria.

☐ Only for some restored units. Describe:

☐ Only for some criteria. Describe:

2. Have the structural goal(s) been attained? *(see III.1.3 and V.1 & V.2)*

☐ Yes ☐ No ☐ Partly ☐ Only for some units. Describe:

3. Have the functional goal(s) been attained? *(see III.1.4 and V.3)*

☐ Yes ☐ No ☐ Partly Describe*:*

4. Have the landscape goal(s) been attained? *(see III.1.5 and VI.1)*

☐ Yes ☐ No ☐ Partly Describe*:*

5. Have socio-economic goals been attained? *(see III.1.6-8 and VI.2)*

☐ Yes ☐ No ☐ Partly Describe*:*

6. According to survival and growth of planted/seeded species, the plantation/seeding success was: *(see V.1.4, V.1.5, V.1.6.a-g)*

☐ Very high ☐ High ☐ Medium ☐ Low ☐ Very low

VII.2. STRUCTURAL QUALITY

1. How natural is the composition of the restored ecosystem(s)? *(see V.2.5, V.2.6 & V.2.7)*

☐ Fully ☐ Partly. Explain:

☐ Depend on the restored unit. Explain:

2. How natural/mature is the structure and pattern of the restored ecosystem(s)? *(see V.2.1, V.2.2, V.2.3, V.2.4 & V.2.12)*

☐ Fully ☐ Partly. Explain:

☐ Depend on the restored unit. Explain:

3. Presence of important biodiversity *(according to species richness, and the presence of indicator, rare, endemic,endangered, protected species; see V.2.9, V.2.10, V.2.11, V.2.12 & V.2.13):*

☐ Yes ☐ Medium ☐ No

4. In the restored area, the project has: *(according to species richness, and the presence of indicator, rare, endemic,endangered, protected species;see V.2.9)*

☐ increased biodiversity

☐ decreased biodiversity

☐ conserved biodiversity

VII.3. FUNCTIONAL QUALITY

1. Ecosystem dynamics:

Does the restored ecosystem regenerate naturally? *(see V.1.6.h,i,j & V.3.6):*

☐ Yes ☐ Not fully. Explain:

Do natural successional dynamics occur? *(see V.3.6):*

☐ Yes ☐ No ☐ Partly. Explain*:*

2. Overall functioning:

How are the soil characteristics? *(see V.3.3, V.3.4 & V.3.5)*:

☐ Stable ☐ Slightly degraded ☐ Seriously degraded

How is the potential for nutrient cycling? *(see V.3.1, V.3.2 & V.3.3)*:

☐ High ☐ Medium ☐ Low

How is the ecosystem productivity? *(see V.1.6.g, i, V.3.10, VI.2.2, VI.2.3 & VI.2.4):*

☐ High ☐ Medium ☐ Low

3. How is the overall ecosystem health? *(see V.4)*

☐ Good *(No relevant pests, diseases, invasive species, or dead/damaged plants by abiotic factors.)*

☐ Medium *(Some individuals affected; low severity level)*

☐ Poor *(Relevant pests, diseases, invasive species, or dead/damaged plants by abiotic factors.)*

What are the pollution levels? ☐ High ☐ Medium ☐ Low

4. The project significantly increases …

Resistance (e.g., to grazing, pests, fire, drought, *see II.6. and V.3.7 & V.3.8)*:

☐ Yes ☐ No ☐ Partly

Resilience (e.g., to fire, pests, drought, etc., *see II.6.2 and V.3.9 & V.4*):

☐ Yes ☐ No ☐ Partly

Erosion control *(see II. 6.1 and IV.2.14, V.3.4, V.3.5 & VI.1.8)*:

☐ Yes ☐ No ☐ Partly

Flood control *(see II. 6.1 and VI.1.7)*:

☐ Yes ☐ No ☐ Partly

VII.4. LANDSCAPE QUALITY

1. The project significantly increases:

Forest surface *(see VI.1.2)*:

☐ Yes ☐ No ☐ Slightly

Connectivity among patches of formerly isolated populations *(see VI.1.4.c,d & VI.1.5)*:

☐ Yes ☐ No ☐ Slightly

Integration among forests and other habitats *(see VI.1.2 & VI.1.5d,e)*:

☐ Yes ☐ No ☐ Slightly

Habitat diversity *(see VI.1.2)*:

☐ Yes ☐ No ☐ Slightly

The protected surface *(see VI.1.4)*:

☐ Yes ☐ No ☐ Slightly

2. Aesthetic value *(see VI.1.5, VI.1.6,VI.2.7 & VI.2.8):*

☐ Very high ☐ High ☐ Medium ☐ Low

VII.5. SOCIO-ECONOMIC BENEFITS

1. Cultural value *(see VI.1.3, VI.2.7 & VI.2.8):*

Does the project area have particular cultural significance to local inhabitants? ☐ Yes ☐ No

The project has ☐ increased, ☐ decreased, ☐ preserved, ☐ created, ☐ damaged the cultural value of the site

Degree of local participation *(see VI.2.9)*:

☐ High ☐ Medium ☐ Low

2. Has the project generated ecosystem goods for the local population? *(see VI.2.1, VI.2.2, VI. 2.3 & VI.2.4)*:

☐ Yes ☐ No

Amount of timber and non-timber goods provided : ☐ Very high ☐ High ☐ Medium ☐ Low

3. Has the project enhanced ecosystem services? *(see III.1.4 and V.3, VI.1.7 & VI.1.8)*:

☐ Yes ☐ No

Describe:

4. Does the project contribute to fix/support/increase rural population by increasing tourist and recreational value, by direct employment, or by providing homeland? *(See VI.2.5, VI.2.6, VI.2.7)*:

☐ Yes ☐ No ☐ Slightly

VIII. EXPERT JUDGEMENT

1. Expert contact (person who fills the expert judgement):
Expert Contact same as Project Contact? ☐ *Yes* ☐ *No*
Expert Contact same as Data Contact? ☐ *Yes* ☐ *No*
If expert contact is different from Data and Project contact, please indicate:

Last Name:	First Name:
Organisation:	Job Title:
Street Address:	City:
State:	Postal code:
Phone:	Fax number:
Email:	Web page Address:

Relationship with the project:
Design ☐, Implementation ☐, Management of project area ☐, Research ☐, Other (describe):

2. According to site conditions and degradation impacts, were the objectives appropriate and well-chosen?
☐ Yes ☐ No
Explain briefly:

3. According to site conditions and degradation impacts, were the methods (site preparation, species selection, prior actions,...) appropriate and well-chosen?
☐ Yes ☐ No
Explain briefly:

4. Do ecological health and integrity appear to be improved, enhanced? ☐ Yes ☐ No
Explain briefly:

5. Does the general ecological trajectory appear dynamic? ☐ Yes ☐ No
Explain briefly:

6. Any signs of threshold crossings? ☐ Yes ☐ No
Explain briefly:

7. Consequences of the restoration project on the soil (physical properties, biological activities, functions,...):
(e.g., soil surface conditions, nitrogen use efficiency, maximum available soil water reserve, cation exchange capacity, soil organic matter (%), soil-borne seed bank, aboveground biomass, microbial biomass, etc.)

8. Consequences on ecosystem structure, including forest cover, horizontal layers, etc. :
(e.g., spatial configuration, fragmentation, corridors, total plant cover, number of plant and animal species, etc.)

9. Consequences on ecosystem functions : productivity, dissemination, etc. :
(e.g., water, energy, nutrient cycling; productivity (timber, non-timber products); symbiotic fungal or bacterial relationships with trees; wild animal populations; predator-prey relations among wild animals; etc.)

10. Actions needed and next monitoring actions to be considered. Please explain in your own words and indicate your recommendations, e.g., for:
a) Research/Development
b) Demonstration, communication and education
c) Public policy
d) Other

ANNEX 1: Description of the main Mediterranean soils (Source: Plan Bleu Paper, n°2, 2003. Threats to soils in Mediterranean countries. Document review. p 13.)

Name (Different classifications)	Description
Fluvisols – FAO, 1988 Fluvents – Soil Taxonomy, 1975 Little evolved, non-climatic soils of alluvial contents, - CPCS, 1967	Young alluvial soils, the region's most fertile; rich in alkaline compounds or slightly calcareous. In flat area around main rivers.
Regosols – FAO, 1988 Orthents - Soil Taxonomy, 1975 Little evolved, non-climatic soils of alluvial or marine content, - CPCS, 1967	Young soils appearing on soft or unconsolidated terrain, often sloping; not very evolved or constantly rejuvenated by erosion. The topography and the water stress are their main limitations.
Leptosols– FAO, 1988 Orthens - Soil Taxonomy, 1975 Raw mineral soils, - CPCS, 1967	Very shallow soils, generally appearing on hard rock, sloping or very sloping terrains. Very sensitive to erosion.
Rendzic leptosols - FAO, 1988 Xerosols - Soil Taxonomy, 1975 Rendzines, - CPCS, 1967	Soils always on limestone parent rock, rich in humus, often shallow with high rates of gravel; often present on uneven terrain.
Vertisols – FAO, 1988	Often deep and homogenous soils, characterised by high clay content.
Chromic luvisols – FAO, 1988 Rhodoxeralfts - Soil Taxonomy, 1975 Red Mediterranean soils, - CPCS, 1967	Generally leached soils but rich in alkaline compounds; developed on various matter. The best-known are the terra rossa developed on hard limestone.
Calcisols – FAO, 1988 Eurochrepts - Soil Taxonomy, 1975	Soils often with a significant accumulation of calcium carbonate at their base; present in the driest of the Mediterranean climates.

ANNEX 2

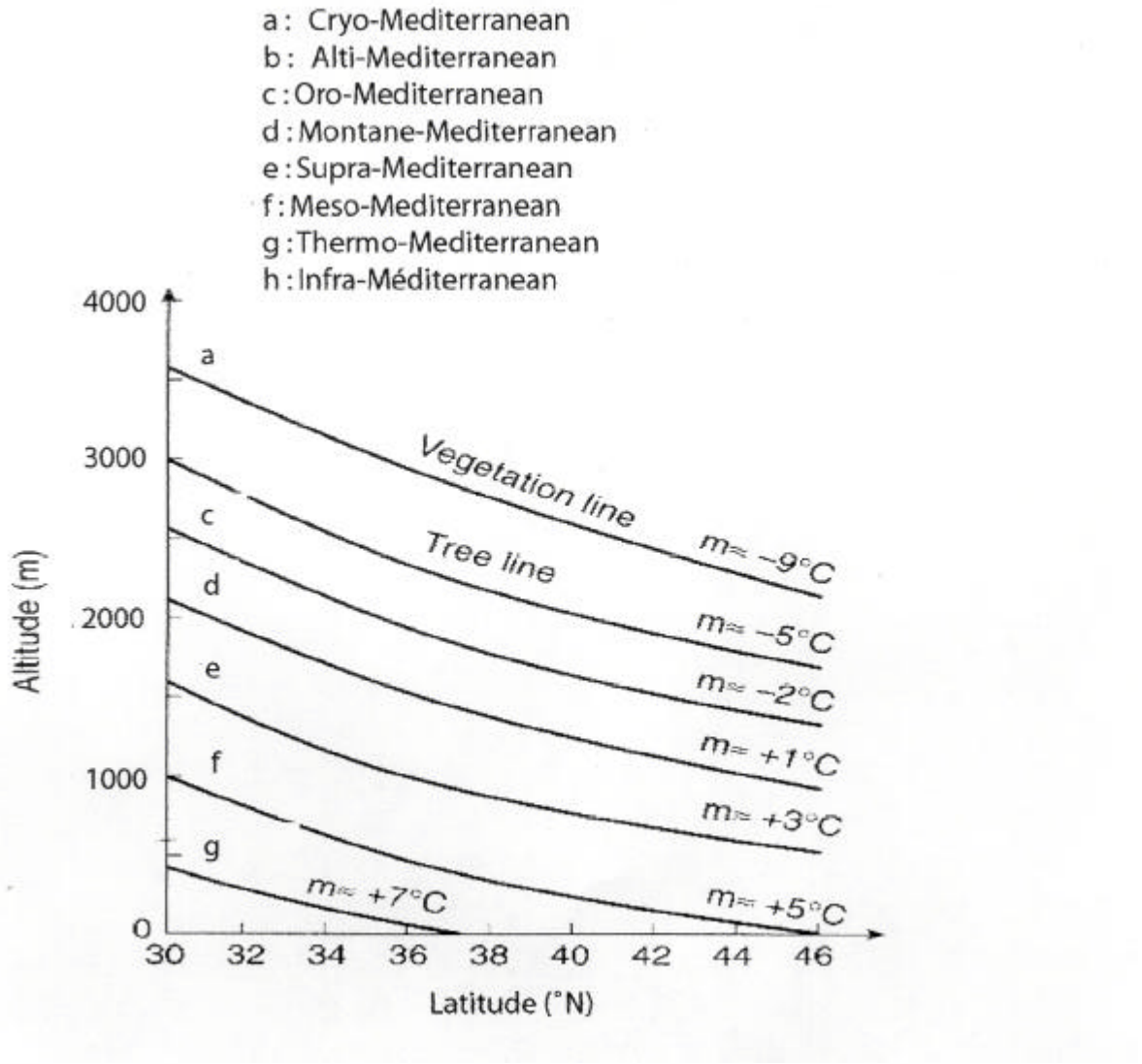

Figure: Altitudinal/latitudinal gradients showing the zonation of the various vegetation belts, or life zones, in the western Mediterranean area ; m = average of the minima of the coldest month (After Le Houérou 1990 in Blondel and Aronson, 1995, 1999).