Appendix 2

INTERREG III C RFO "ROBINWOOD"

Region of Liguria

SWOT analysis

Component 3

March 2006

Table of contents

4. <u>Development of non-timber business opportunities within forests</u>

4.1 Mineral extraction from forest land.
4.2 Non wood products.
4.3 Hunting.
4.4 Wind Farms.
4.5 Wood energy.
4.6 Tourism sport and recreation.

5. Forestry Planning & Management,

5.1 Economic SWOT different forest types.
5.2 Forest with management plans.
5.3 Long and short term plans.
5.4 Recent innovations in technology.
5.5 Integrated Monitoring, Forest Health, held on GIS.
5.6 Natural and semi-natural woodlands.
5.7 Clearcut forests.
5.8 Natural Engineering (protection forests).
5.9 Public consultation and participation (Agenda 21).
5.10 Integration with other land management & ecological networks.
5.11 Forestry within Integrated Rural Development
5.12 Integration of small private woodland owners (formal vs informal co-operatives).
5.13 State provision of management systems for the private sector.
5.14 Small private owners.

1. BIODIVERSITY

In the present document, for "B*iodiversity"* is intended *the variability and variety of different living organisms and the related environmental systems to which they belong*.

Biodiversity is a measurer of the richness of life on the earth.

1.1Government policy on biodiversity

Italy in the EU, is one of the countries with the highest values of biodiversity. Our country, in fact, hosts the 65% of the overriding importance habitat as described in the UE directive *Habitat* and over one third of animal species distributed in UE countries.

Furthermore, almost the 50% of European flora is present in Italy on a surface of about one thirtieth of the continent.

Liguria represents one of the richest Italian regions in terms of biodiversity, due to the specific position of Liguria territory that includes 3 different bio-geographical regions: alpine, continental and Mediterranean region.

Regional policy protects such environments according to International Conventions signed and subscribed by Italy too, by the promotion of common initiatives concerning the conservation and enhancement of the environment, as follows:

CONVENTIONS:

- ***Convention on Biological Diversity***, Rio de Janeiro, 1992;
- ***Convention on Alps protection***, 1991;
- ***Convention of Bonn***, on conservation and management of migratory species, 1979;
- ***Convention of Berne***, on conservation of wild life and natural environment in Europe, 1979;
- ***Convention of Barcelona***, on Mediterranean sea protection from pollution, 1976;
- ***Convention of Washington (CITES)***, on international trade of endangered species (flora and fauna), 1973;
- ***Convention of Paris***, on birds protection.

ENIVIRONMENTAL CONFERENCES OF REGIONS:

- ***Brussels Resolution***; Valencia Conference; Goteborg Resolution; Wexford Resolution; D.G.R, n. 596/2001: adherence to Valencia Charter, Aalborg Charter, Goteborg Resolution and Wexford Resolution.

ENIVIRONMENTAL CONFERENCES OF LOCAL COMMUNITIES:

- ***Aalborg Charter***; Lisboa Action Plan: from the paper to the action; Sevilla Declaration; Hannover Appeal

DIRECTIVES AND UE FINANCING PROGRAMMES

- ***Habitat Directive***: 92/43/CEE, 1992, Birds Directive: 79/409/CEE, 1979, *Life Natura Programme.*
  Rete Natura 2000*:* a network of different areas in the UE finalised to the protection and conservation of different habitat and animal/vegetation species according to Habitat Directives (identification of SIC) and Birds Directive (identification of ZPS) indications. The system of SIC and ZPS spread on the territory forms *RETE NATURA 2000.*
- Main channel of funds allocation for Liguria Region, to support Rete Natura 2000 acivities, is represented by FESR Fund, Objective2. Furthermore, additional funds have been allocated through UE Interreg Programme.
  As reported in the *Working Group on art.8 of EEC Directive 92/43* document, it is foreseen the possibility of using also different funds, such as Life-Natura, Structural Funds, FEOGA and Fondo di Coesione.
  Finally, for 2007-2012 period, FESR Funds will be used to finance Rural Development Plan that will include also Rete Natura 2000 projects.

1.2<u>Level of protection provided</u>

Liguria Region has a quite relevant portion of territory under a protection system [regional protected areas, Rete Natura 2000 (SIC, ZPS)], according to the above mentioned directives and regional laws concerning parks and protected areas, as follows:

- SIC : 124, out of which 98 terrestrial, 26 marine;
- ZPS: 7
- National Park: 1
- Regional Natural Reserves: 3
- Regional Natural Parks: 8
- Province Protected Area: 1 (botanical garden)
- Sea Protected Areas: 2
- Other regional protected area: 1 (botanical garden)

At regional level, a total of about 25480 ha results to be protected, corresponding to 4.70% of the regional territory, with additional 10.830 ha of adjoining areas, for a total of 6.70% of total regional territory.
SIC and ZPS are considered apart from the above data. It should be noted that the 70% of the area of terrestrial SIC is formed by "forest habitat", natural/semi-natural grass formation, Mediterranean scrub and sclerophylle bush.
Around the 20% of Rete Natura 2000 areas is included in Regional and National Parks.

Two final tables (**Table 1.2, 1.3**) are reported with more details concerning the distribution and surface of different protected areas.

1.3 Current management

Protected areas are currently managed through the Park Management Plan, a plan concerning the management of the park in its whole, and/or forest management plans, if available. As regards Rete Natura 2000 areas, ZPS Management Plans as well as SIC Conservation Measures/Plans are under way to be drawn up and implemented.

Additional tools for biodiversity management and protection are provided by Forest Certification Schemes (FSC and PEFC) and a specific study has been carried out on the mapping of forest local provenance stands for seed collection (APAT, 2004).

The national and regional law (D.G.R. 646/2001, e successive modifiche nella D.G.R. 643/2001, D.M. 3.9.2002, D. Dirigenziale 3147/2003), actually, foresees the following tools for managing these areas:

- The *Incidence Evaluation Report*
- The *Management Plan* (7 ZPS + 1 SIC).
- Conservation measures (97 SIC)

Table 1.1 - Biodiversity

Strengths	***Weakness***
Protection of biological diversity and specific ecosystems.	Presence of bonds and additional rules generating too much conservative approach
Enhancement and better qualification of the territory	Low professional competence and knowledge
Controlled/optimised management of natural systems and environment	Lack of appropriate management
Development/widening of scientific knowledge Carta degli Habitat (1:25000)	People’s perception of BIODIVERSITY often correspond only to a top-down approach
Regional Observatory for Biodiversity (since 2004)	
Habitat Map (1:25.000) available from 2005	
Opportunities	***Threats***
Opportunities for employment creation for competent personnel	Lack of funds for managing adequately protected forest areas
Promotion of rural activities concerning management of biodiversity	Inadequate and unorganized surveillance
Valorisation of particular naturalistic themes and development of experience centres	Low level of consciousness by people about territorial environmental significance
Promotion of naturalistic tourism	Unsuitable and generic measures of protection

TABLE 1.2. BIODIVERSITY - Protected areas

National Parks	National regional Reserves	National regional Parks	Province Protected Areas	Other Regional Protected Areas	Marine Protected Areas
P.N. delle Cinque Terre (La Spezia) 3844 ha	Isola Gallinara 11 ha	Bric Tana (Savona) 170 ha	Giardino Botanico Pratorondanino (Genova) 0.8 ha	Giardini Botanici *Hanbury* (Imperia) 19 ha	Cinque Terre (La Spezia) 2800 ha
	Rio Torsero (Savona) 4 ha	Piana Crixia (Savona) 794 ha			Portofino (Genova) 360 ha
	Bergeggi (Savona) 8 ha	Beigua (Genova,Savona) 8715 ha			
		Antola (Genova) 4837.64 ha			
		Portofino (Genova) 1056.26 ha			
		Aveto (Genova) 3018.77 ha			
		Portovenere (La Spezia) 273.91 ha			
		Montemarcello Magra (La Spezia) 2726 ha			

TABLE 1.3. BIODIVERSITY - SIC and ZPS, according to Habitat Directive and Birds Directive

	Imperia	Imperia /Savona	Savona	Savona/ Genova	Genova	Genova/ La Spezia	La Spezia	TOTAL
SIC - terrestrial	22 32644 ha	**2** 4112.6 ha	**25** 29630 ha	**1** 16935 ha	**23** 31961.9 ha	**3** 8406.4 ha	22 12538.4 ha	**98** **136228 ha**
SIC - marine	6 2187.8 ha		6 813.9 ha		9 1547.2 ha		5 587.7 ha	**26** **5136.6 ha**
ZPS	6 9647 ha			1 9948.6 ha				**7** **19945 ha**
Total number /province	**34**	**2**	**31**	**2**	**32**	**3**	**27**	
Total surface /province	**46361 of 115640**		**45087 of 154512**		**53029 of 183589**		**16446.5 of 88134**	

2. CERTIFICATION

This issue considers exclusively certification schemes/systems for Sustainable Forest Management (FM) and for the Chain of Custody (CoC) of forest products (wood and non-wood forest products), according to the most used Forest Certification Schemes in EU: *FSC (Forest Stewardship Council)* and *PEFC (Programme for Endorsement of Forest Certification schemes).* Main objective of forest certification is to certify a Sustainable Forest Management system under the economical, social and environmental view point.

2.1 Public sector certification

So far, in Liguria, the public sector has mostly invested on different Environmental Management Systems, whose major aim is environmental sustainability and enhancement of the quality of living conditions at local level.

The following certification schemes have been implemented locally:

Certification system	Number of municipalities/local authorities
Agenda 21	21 municipalities with a Local Action Plan + 30 under way
Emas	3 municipalities succeeded EMAS registration + 36 under way
ISO 14000	14 certified + 112 under way
ISO 9001	7 certified
FSC (FM+CoC)	3 certified + 2 under way
PEFC (CoC)	2 certified CoC, under way for FM

Actually, three municipalities (Vado Ligure, Bergeggi and Nasino, in Savona Province) participated successfully to *FSC* group certification, while other two local authorities are under way, for a total of additional 1.300ha (one municipality and the Regional Aveto Park), while 2 municipalities (Campo Ligure and Rossiglione, in Genoa Province) are certified PEFC as concerns the Chain of Custody.

2.2 Political support

Liguria Region, thanks also to the experience acquired through the implemented environmental certifications, is actually considering forest certification, that still represents, not only at local level but also at national level, a new tool to qualify better the sector.

At regional planning level (pls. see the *Regional Forestry Programme, draft 2004),* forest certification is supported and encouraged as an opportunity to improve the forestry sector as regards forest management sustainability, workers qualification and training, working conditions, products marketing, stakeholders participation and involvement. Furthermore, group's certification is particularly encouraged as an opportunity to manage jointly forest land belonging to different owners.

2.3 <u>Private forest certification</u>

At private level, actually there is only one regional experience of forest certification (SFM – Sustainable Forest Management + CoC – Chain of Custody), implemented through a group's *FSC* certification scheme leaded and promoted by a private forest consortium, located in Savona Province (*XILOIMPRESE* s.c. a r.l.).

Certification succeeded on February 2005, both for SFM and CoC and concerned a total of 1.492 ha of forest land, belonging to 17 different owner, including 3 municipalities (pls. see 2.1). It is a *SLIMF (SLIMF – Small and Low Intentisity Managed Forests)* group of FSC certification.

As regards PEFC, the *Valle Stura* consortium (located in Campo Ligure, Genoa Province) should proceed next September 2005 with a FM certification of around 850ha of forest land.

2.4 <u>Chain of custody for certification</u>

In Liguria, the Chain of Custody is not yet sufficiently developed. No sawmills and firms are presently certified, apart from *XILOIMPRESE* consortium (*FSC - CoC* certification, mostly for fuel wood) and *Valle Stura* consortium [*PEFC-CoC* certification for wood energy (chips)].

2.5 <u>Expansion of area under certification</u>

In the short/medium term period, area under certification will surely increase, but is not possible now to make precise previsions about how many hectares, even if it should be realistic to imagine an expansion by 500÷1.000 ha/year/consortium.

It is probable that a strong incentive will be represented by the experience in progress by the Robinwood project, by certified products marketing outputs, by stronger institutional support (financial inputs, tenders, extension and training, GPP, …).

2.6 <u>Comparison between different systems across Europe</u>

In Europe - the most known and used certification schemes are represented by *FSC* and *PEFC*.

Unluckily, the mutual recognition between the two certification schemes, FSC and PEFC, did not yet succeed.

In the world, the two schemes are promoted according to different geographical areas: PEFC is much more popular in Europe with more than 46.000.000 ha certified, while FSC is much more developed in extra-European countries, with more than 31.000.000 ha certified world wide.

Table 2 – Certification

Strengths	***Weakness***
International validity/recognition	Too much bureaucracy and often unsuitable procedures according to local conditions
Good promotion of the sector	High costs (certification costs + certification adjustment costs)
Participatory approach (FSC scheme)	Lack of knowledge at institutional level
Integrated approach	Different interpretation of current forestry technical terminology
Sustainable forest management (social, economical and environmental)	CoC not yet implemented at local level
Good monitoring system	GPP not enough promoted
Opportunities	***Threats***
Good opportunity for a joint management of forest land belonging to different forests' owners (both private and public).	Confusion between different certification schemes for final users/consumers
Good opportunity to improve working conditions	Lack of appropriate institutional support
Good opportunity to develop new markets for forest products.	Check lists too much complicated and heavy
Good opportunity to qualify better the sector and to create/consolidate new job opportunities and employment	Processing sector (sawmills, firms, etc.) not yet involved at local level
Good opportunity to improve the communication system within the sector	Lack of extension & training at local level

3. THE DEVELOPMENT OF THE FORESTRY SECTOR

3.1 Raw material supply for large-scale industry

In Liguria, no large-scale industries are present.

3.2Raw material supply for small-scale industry

It should be said that in Liguria, despite the high value of woodiness (more than 70% of the region is covered by forests), the quality of the wood is generally quite poor and, whenever the quality is good, the good quality stands are very few.

So, it may be stated that in Liguria there is a high quantity of poor quality wood.

The most common wood assortments – in order of importance - mainly consist of:

1. **Firewood** from Oak species, Beech, Hornbeam, Ash tree, Acacia, Chestnut tree
2. **Poles and stakes**, Chestnut tree
3. **Timber** for beam and sawmill, from Beech and Chestnut tree (if not affected by *ring shake).*

Local timber, generally contributes no more than 10-15% out of the total processed by local industries, while the balance is imported from France and East Europe. Liguria does not supply local pine wood or other conifers.

At regional level, there are no precise and updated data concerning the quantity of raw material supply, apart from global data on total standing volumes per Province elaborated through the IFMR (Multi-resources Forest Inventory,1995). Further IFMR elaboration should be desirable in order to provide more in depth analysis and reliable data also on other relevant aspects concerning regional forests.

3.3 Small and medium enterprises in the forestry

WOOD INDUSTRIES: small-scale industries (generally < 5-10 employees) represent in Liguria the most common type of enterprise processing /marketing wood, even if, as above described, the wood does not represents a priority sector in the Region.

In Liguria there exist three main geographical areas where wood supply and processing is somehow developed:

- Savona Province: VAL BORMIDA
- Genoa Province: VAL FONTANABUONA/VAL GRAVEGLIA
- La Spezia Province: VAL DI VARA

According to last statistics, the wood enterprises in the regions decreased in the last 10 years (1991-2001) by 24.1% and based on current sectoral survey (federlegno, ICILA, ISTAT), there are indicatively 40÷50 enterprises, out of which around only 5% of them process wood (10% local wood, 90% imported wood), while the other 95% are wood business enterprises.

The enterprises are mostly located in Savona (≅15) and Genoa provinces (≅25), where, apart from statistics data, it is possible to find very small/familiar enterprises that have developed a market niche, by using exclusively local wood, but they are very few (≅ 5).

FOREST ENTERPRISES: forest enterprises represent the majority of sectoral enterprises. They are mostly concentrated in VAL BORMIDA (SV) and VAL D'AVETO (GE), where wood supply is still, locally, a relevant incomes generating activity.

The main product is always represented by firewood, that generally is sold "free tax" at the black market and at regional level there exist three main typologies of forest enterprises, as follows:

model enterprise	Productive capacity	Main products
1. small farmer (1-2 employees)	500 ÷ 1.500 q/year	firewood
2. small farmer (2-3 employees)	1.500 ÷ 10.000 q/year	Firewood + chestnut for tannins extraction and wood chips
3. forest enterprise (3-8 employees + seasonal workers)	> 10.000 q/year	Firewood, timber, poles & stakes, wood chips

The common denominator of the three "model enterprises" is that, usually, they are "family enterprises".

Based on recent field surveys, an estimation of how many enterprises work in VAL BORMIDA can be done, as follows:

model enterprise	Estimation of number of enterprises
1. small farmer (1-2 employees)	≅150
2. small farmer (2-3 employees)	30÷40
3. forest enterprises (3-8 employees + seasonal workers)	15÷20

Table 3 – The Development of the forestry sector

Strengths	***Weakness***
Willingness/motivation of forest operators	Poor quality wood
	Unstructured wood chain supply
	Isolation of small familiar enterprise located in the interiors/remote areas
	Wood import economical convenience
	Lack of favourable conditions to develop locally the sector
	Lack of institutional support
Opportunities	*Threats*
To improve market niches and open new niches	Progressive decrease and lost of interest of the sector
Lack of local/internal market competition	Lack of appropriate training/extension
Forest certification (SFM+CoC)	Negative economic trend

3.4 Supply chain

As previously explained the supply chain results to be quite unstructured. If this on one hand is an opportunity for dynamic forestry sector's operators (low competition at local level), on the other hand represents a weak point, as the market is unstructured and it lies just in the hand of few people, without a recognized commercial power of the whole sector - Only few individuals are able to make business beyond the simple sell of few cubic meters of fuelwood at the black market.

3.5 Current markets and degree of penetration

Please See previous paragraphs. No further official data/information are available.

3.6 Value added opportunities

In this perspective, it looks difficult enough to imagine concrete value added opportunities for the sector to be really able to meet wood market needs, such as: low/competitive prices, good quality wood, good professional skills in marketing, packaging, transport of different products, infrastructures and machineries for wood transformation. Forest certification schemes and wood boiler, joint to specific training programmes and public financial support, could represent good opportunities to develop the sector.

3.7 Employment levels and trends

The employment level and trends of forestry sector in Liguria are quite contracted: enterprises try to have only temporary/seasonal staff. The permanent staff are normally represented by the family members working in the enterprise. For small farmers working in the fuel wood sector, this work represents his second black job. Please see also 3.3.

3.8 Contribution to regional and local economic activity

No available data.

3.9 Current training provision including: marketing, negotiation, business skills and partnerships

No available data.

3.10 Green Public Procurement

No available data.

4. DEVELOPMENT OF NON-TIMBER BUSINESS OPPORTUNITIES WITHIN FORESTS

As regards forest products :non-timber or non-wood products generally represent a relevant part of the “forest business”, even if not always they are appropriately considered in terms of allocation of investments to develop/implement sustainable non-wood products forest management systems and carry out research.

4.1 Mineral extraction from forest land

Mineral extraction is developed along the whole region. Quarries are usually located between the flat land and the beginning of the inland or directly in forest land. Most of them are actually suspended, so active quarries are not so numerous and the impact on the environment not so negative. For dismantled quarries reclamation measures are foreseen.

The Liguria Region has a direct control on extractive activities, the cave management is generally given to private enterprises.

Here below a list, divided per province, is reported as follows:

GENOVA (116):

Municipality	Quarry’s name	Quarry’ state active/suspended	Extractive material (ingl. – ita)
Avegno	Cave di Salto	Suspended	Slate - Ardesia
Borzonasca	Pietre gemelle	Suspended	Serpentine - serpentino
Campomorone	Castellaro	Active	Limestone - Calcare
Campomorone	Montecarlo	Suspended	Limestone - Calcare
Campomorone	Loezze	suspended	Coloured marble
Casarza L.	Bargonasco	Active	Serpentine
Castiglione Ch.	Acquafredda	active	Diabase
Coreglia L.	Costigliolo	suspended	Slate - Ardesia
Coreglia L.	Costigliolo I	suspended	Slate - Ardesia
Lavagna	Puggiocchi	suspended	Slate - Ardesia
Mezzanego	Stangoni	active	Limestone - Calcare
Montoggio	Tre Fontane	suspended	Limestone - Calcare marnoso
Né	Maenche	suspended	Limestone - Calcare
Né	Ex fornace	active	Limestone - Calcare
Né	Ventuin II	active	Limestone - Calcare
Né	Cadana	active	Limestone - Calcare
Né	Costalunga	active	Limestone - Calcare
Né	Pussu du Segnu	suspended	Slate - Ardesia
Né	Campuettin	suspended	Coloured marble
Né	Erbo Iscioli	active	Coloured marble
Né	Sopra la fontana	Active	Red and green marble

Né	arbisci	Active	Serpentine
Né	Costa dei sergi	active	Limestone - Calcare
Né	castello	Active	Limestone - Calcare
Rapallo	San pietro di novella	active	Limestone - Calcare
San Colombano	Sciaché	Suspended	Slate - Ardesia
Torriglia	Bagoni	Suspended	Limestone - Calcare
Uscio	Fondegone	Suspended	Slate - Ardesia
Uscio	Fondegone	Suspended	Slate - Ardesia
Uscio	Priuzzi	suspended	Slate - Ardesia
Uscio	Priuzzi	Suspended	Slate - Ardesia
Uscio	ciappee	Suspended	Slate - Ardesia
Cicagna	Discarica possetta	Active	Slate - Ardesia
Genova	Monatasco	Active	Limestone - calcare
Genova	Panigaro II	Suspended	Limestone – calcare
Genova	Vecchie fornaci	Suspended	Limestone – calcare
Genova	Gneo	Suspended	Limestone – calcare
Genova	Giunchetto	Active	Limestone – calcare
Genova	Forte ratti	Suspended	Limestone – calcare
Genova	Tana dei banditi	Active	Diabase
Genova	Pian di carlo	Active	Serpentino
Lorsica	Costa della ramà	Suspended	Slate – Ardesia
Lorsica	Chiarino	Suspended	Slate – Ardesia
Lorsica	Bel fiore 1	Active	Slate – Ardesia
Lorsica	Conte mastra	Active	Slate – Ardesia
Lorsica	Luietta	Active	Slate – Ardesia
Lorsica	Arpicella	Suspended	Slate – Ardesia
Lorsica	Baccan	Active	Slate – Ardesia
Lorsica	Gazzo di sotto	Active	Slate – Ardesia
Lorsica	Cò de versi Casone del coccio	Suspended	Slate – Ardesia
Lorsica	Uergu	Active	Slate – Ardesia
Lorsica	Fossato di balano	Active	Slate – Ardesia
Lorsica	Acqua di sotto	Suspended	Slate – Ardesia
Lorsica	Oergo	Active	Slate – Ardesia
Lorsica	Piazzo	Active	Slate – Ardesia
Lorsica	Alpicella	Active	Slate – Ardesia
Lorsica	Cresta del monte	Suspended	Slate – Ardesia
Lorsica	Oergo 2	Active	Slate – Ardesia
Lorsica	Discarica garzo di sotto	Active	Slate – Ardesia
Lorsica/Orero	Discarica pian	Active	Slate – Ardesia
Lorsica	Discarica della croce	Active	Slate – Ardesia
Lorsica	Discarica di balano	Active	Slate – Ardesia
Lorsica	Discarica della croce (ex-ripemarce)	Active	Slate – Ardesia
Moconesi	Scaffè-monte provino	Active	Slate – Ardesia
Moconesi	Pussui	Active	Slate – Ardesia
Moconesi	Monte mezzano	Suspended	Slate – Ardesia
Moconesi	Ripemarce 1	Active	Slate – Ardesia
Moconesi/Lorsica	Galleria	Active	Slate – Ardesia
Moconesi	Cugno stretto	Active	Slate – Ardesia
Moconesi	Nuova scaggia	Active	Slate – Ardesia
Moconesi	Ciappeotti	Active	Slate – Ardesia
Moconesi	Novelletta	Active	Slate – Ardesia
Moconesi	Monte mezzano	Active	Slate – Ardesia

Moconesi	Riè	Suspended	Slate – Ardesia
Moconesi	Abareto	Active	Slate – Ardesia
Moconesi/Lorsica	Casa bruciata	Active	Slate – Ardesia
Moconesi	Riva bananasca	Suspended	Slate – Ardesia
Moconesi/Lorsica	Ripemarce	Suspended	Slate – Ardesia
Moconesi	Merlino	Active	Slate – Ardesia
Moconesi	Scaggia	Active	Slate – Ardesia
Moconesi	Ripe marce	Suspended	Slate – Ardesia
Moconesi	Ripe marce	Active	Slate – Ardesia
Moconesi	Cerro fontanelli	Active	Slate – Ardesia
Moconesi	Provino	Suspended	Slate – Ardesia
Moconesi	Pussui	Active	Slate – Ardesia
Moconesi	Monte casetto	Suspended	Slate – Ardesia
Moconesi	Monte casetto 2	Suspended	Slate – Ardesia
Moconesi	Merlino I	Active	Slate – Ardesia
Moconesi	Discarica valle cornia	Active	Slate – Ardesia
Moconesi	Cerro fontanelli	Active	Slate – Ardesia
Orero	Castagneto	Suspended	Slate – Ardesia
Orero	Cuneo	Active	Slate – Ardesia
Orero	Boschetti	Suspended	Slate – Ardesia
Orero	Lovaia II	Suspended	Slate – Ardesia
Orero	Caiò	Active	Slate – Ardesia
Orero	Piazza dei ratti	Suspended	Slate – Ardesia
Orero	Frascà	Active	Slate – Ardesia
Orero	Pastine	Suspended	Slate – Ardesia
Orero	Castagneio	Active	Slate – Ardesia
Orero	Serreie	Suspended	Slate – Ardesia
Orero	Serreie I, II, III	Active	Slate – Ardesia
Orero	Cuccuella	Suspended	Slate – Ardesia
Orero	Ponte	Suspended	Slate – Ardesia
Orero	Pastinelli-rondanaia	Suspended	Slate – Ardesia
Orero	Ripa di gazzo	Suspended	Slate – Ardesia
Orero	Gazzo	Active	Slate – Ardesia
Orero	Lovaia	Suspended	Slate – Ardesia
Orero	Gazzo	Suspended	Slate – Ardesia
Orero	Pastenelli	Active	Slate – Ardesia
Orero	Filone duro	Active	Slate – Ardesia
Orero	Gazzo I, II, III, IV	Active	Slate – Ardesia
Orero	Luaia	Active	Slate – Ardesia
Orero	Pian di aa	Active	Slate – Ardesia
Orero	Cuccuella II	Active	Slate – Ardesia
Orero	Discarica donega	Active	Slate – Ardesia
Orero	Fondega	Suspended	Slate – Ardesia

IMPERIA (26):

Municipality	Quarry's name	Quarry's state active/suspended	Extractive material (ingl. – ita)
Castellaro	Rocca croaire	Active	Puddinga
Cipressa	Pian del due	Active	Limestone – calcare
Imperia	Cave rosse	Active	Limestone – calcare
Imperia	Borgo d'oneglia	Active	Limestone – calcare
Imperia	Canielli	Active	Limestone – calcare
Molini di triora/triora	Capriolo bompè	Active	Slate - Ardesia
Molini di triora	Morghetta carpenosa	Active	Limestone – calcare

Ornassio	Rivarini	Active	Pink marble
Sanremo	Monte bersagliè	Active	Clay - argilla
Sanremo	Verezzo alta	Active	Sandstone – arenaria
Taggia	San Giorgio 1	Active	Sandstone – arenaria
Taggia	San Giorgio	Active	Sandstone – arenaria
Triora	Carle	Active	Slate – Ardesia
Triora	Canevairole	Active	Slate – Ardesia
Triora	Cuin	Active	Slate – Ardesia
Triora	Rio barbone	Active	Slate – Ardesia
Triora	Sarin	Active	Slate – Ardesia
Triora	Udago du spri	Active	Slate – Ardesia
Triora	Cava del foresto	Active	Slate – Ardesia
Triora	Testa delle collette	Suspended	Slate – Ardesia
Triora	Gastea	Active	Slate – Ardesia
Triora	Bregalla	Active	Slate – Ardesia
Triora	Discarica rio barbone	Active	Slate – Ardesia
Triora	Discarica rio gastea	Active	Slate – Ardesia
Ventimiglia	Bergamasca	Active	Limestone – calcare
vemtimiglia	Marsè	Active	Limestone – calcare

SAVONA (28):

Municipality	Quarry’s name	Quarry’s state active/suspended	Extractive material (ingl. – ita)
Albenga	Enesi	Suspended	Sand - Sabbia
Albisola sup.	Beata	Active	Diabase
Albisola sup.	Olmo	Active	Serpentine
Balestrino	Camporosso	Active	Quartz - quarzo
Balestrino	Cava rosa	Active	Limestone - calcare
Bergeggi	s.elena	Suspended	Limestone – calcare
Cairo m.	s.carlo	Active	Limestone - calcare
Cairo m.	Poggetti	Active	Clay - Argilla
Cairo m.	Ferrere	Active	Clay - Argilla
Castelbianco	Pennavaire	Active	Limestone - calcare
Cengio	Piani	Active	Clay - Argilla
Cengio	Vignali	Active	Gravel - ghiaia
Cosseria	Rianazza	Active	Limestone – calcare
Finale l.	Arene candide	Suspended	Limestone – calcare
Millesimo	Binè	Active	Limestone - calcare
Olcofeglino	Bonomi	Active	sabbia
Pallare/carcare	Veriusa	Active	Limestone - calcare
Pontinvrea	Fossa di lavagnin	Suspended	serpentino
Sassello	Croce di grin	Suspended	serpentino
Savona	Brico biscea	Active	Diabase
Toirano	Torri	Active	Limestone - calcare
Urbe	Tassare	Suspended	serpentino
Vado ligure	Trevo	Active	Limestone - calcare
Vado ligure	Mei	Active	Limestone – calcare + quartz
Villanova d’albenga	Paratermini 2	Suspended	Clay - Argilla
Zuccarello	Salita lampada	Active	Limestone – calcare
Zuccarello	Isola	Active	Limestone – calcare
Vezzi portio	Inalea	Active	Limestone - calcare

LA SPEZIA (31):

Municipality	Quarry's name	Quarry's state active/suspended	Extractive material (ingl. – ita.)
Arcola	Ortara	Active	Limestone - calcare
Arcola	Groppolo	Suspended	Limestone – calcare
Beverino	Trezzo	Active	Limestone - calcare
Bonassola	San Giorgio	Active	Marmot rosso levanto
Bonassola	Rossola II	Suspended	Marmot rosso levanto
Bonassola	Gronde	Active	serpentine
Bonassola	Cava dei marmi	Active	Ophiolite rock - Roccia ofiolitica
Bonassola	Pian della valle	Active	Red marble levanto -Marmo rosso levanto
Borghetto Vara	Pescina	Active	Red marble "di cassa - Marmo rosso di cassa
Deiva marina	La sfinge	Active	Red marble - Marmo rosso levanto/serpentino
Framura	Prae	Active	Red marble - Marmo rosso levanto
La Spezia	Castellana	Active	Portoro marble - Marmo portoro
La Spezia	Castellana I	Active	Portoro marble - Marmo portoro
La Spezia	Cubiola Bianca	Active	Limestone – calcare
La Spezia	Lima	Active	Limestone – calcare
La Spezia	Fornace	Suspended	Limestone – calcare
La Spezia	Piè del signore	Suspended	Limestone – calcare
La Spezia	Groppa	Suspended	Limestone – calcare
La Spezia	Monte santa croce	Active	Limestone – calcare
Lerici	Mezzetta	Active	Limestone – calcare
Lerici	Guercio	Suspended	Limestone – calcare
Levanto	Fosso delle streghe	Active	Serpentine
Portovenere	Cavetta	Suspended	Portoro marble - Marmo portoro
Portovenere	Anime	Active	Portoro marble - Marmo portoro
Riccò del golfo	Monte parodi	Suspended	Limestone – calcare
Riccò del golfo	Serenella	Active	Limestone – calcare
Riccò del golfo	Pian di balè	Active	Limestone - calcare
Rocchetta vara	Ponte nuovo	Active	Serpentine
Santo Stefano magra	Palanceda	Suspended	Clay - Argilla
Santo Stefano magra	Brina	Active	Serpentine
Sesta Godano	Vizzà	Suspended	Sandstone - Arenaria

4.2 Non wood products

In Liguria Region, non wood products are important for local economy as they represent a relevant income generating activity for local communities.

At regional level, the most important non wood products are:

- Chestnuts
- Mushrooms
- Truffles
- Leafy branches (from Beech - *Fagus sylvatica*)

In particular, mushrooms and truffles may contribute with several thousands of euros per year to the incomes of local communities and municipalities (issue for mushroom collection permit).

Despite the strong commercial interest for this kind of “natural cultivation”, no investments are provided by local user and collector (both private and public) to improve and maintain forests naturally suitable for mushrooms or truffles production, generating in such a way a significant and progressive fall of harvests.

Generally - prices are quite high and these products are considered as luxury products. They are usually sold at the black market, with no certainty of their provenance. Quite often local market sells as “local/regional product” mushrooms or truffles coming even from abroad (East Europe and North Africa, generally).

As regards truffles, some very small plantations of mychorrized seedlings (broadleaves with *Tuber melanosporum – black truffle)* have been locally implemented.

Some prices:

- Truffles (2004 harvest): 120÷270 €/hg (to the collector)
  + more than 25% to the final consumer
- Mushrooms: 20÷50 €/Kg
- Chestnuts: 4÷5 €/Kg, locally
  6÷9 €/Kg, in town
- Leafy branches: 20÷25 €/mc

4.3 Hunting

Hunting is particularly structured, in accordance with regional and national rules, with strict prescriptions. In Liguria, according to hunting permits released last 2005, total hunters amount to 25.703, so shared among different provinces:

province	IMPERIA	SAVONA	GENOVA	SPEZIA (SP)

	(IM)	(SV)	(GE)	
Number of hunters	5.187	6.723	9.724	4.069

Each year the region issues a "hunting calendar", where rules, hunting periods/species and species are clearly reported according to national legislation.

There are fur game species (fallow deer and roe deer) that frequently strongly damage/compromise forest regeneration both of coppice or high forest, with special regard to Oak species especially in VAL BORMIDA area.

These species may be hunted but only based on selective shooting down plans, decided and approved by each province according to local inventory. Usually the 8% of the total may be killed, even if these species are locally in excess, and there is not the right balance between animals and available land then a higher percentage could be agreed.

Wild boar too is in excess and often damages agricultural land, but they may be hunted throughout the whole year without particular restrictions if needed. For these species (fallow deer, roe deer, wild boar) and also for other minor ones - illegal hunting is locally developed and in some areas it is difficult for institutions to control it due to lack of resources.

4.4 **Wind farms**

Energy produced by wind power in Liguria is relatively low: it does not exceed 13 ktep yearly. The Province with the most power is Genoa which makes up 46%, followed by Imperia (28%), Savona (19%) and La Spezia (7%).

At present there are 3 wind farms in Liguria with a total installed capacity of 4.8 MW, established by means of regional co-financing and equipped with windmills of average installation size 750-800 kW connected directly to the local distribution grid (Enel Distribuzione).

The three installations are located in:

- the Municipality of Calice Ligure (Sv), where there is a windmill built at the end of 2001, with total capacity reaching 800kW.
- Varese Ligure (Sp), with two installations in operation since 2000 for a total capacity of 1,500 kW.
- Bormida – Osiglia (Sv), installed in 2002.

The development of this technology in our region faces many constraints related to environmental impact, above all concerning - space, visual and acoustic impact. In addition, particular attention is paid to the possible disturbance windmills may cause to stationary and migratory birds.

Lastly, it is important to mention that the morphological and relief characteristics of the region exclude the idea of installing large wind farms.

4.5 Woody energy

After approving the Regional Energy and Environment Plan (PEAR), by 2010, Liguria intends to install about 150 MW of thermal power using biomass burning units.

The theoretical potential for forest biomass for the entire region amounts to 463 ktep. This potential (not distributed uniformly) is very high and comprises most of the renewable energy sources in the region. The provinces of Genoa and Savona, which have the most extensive forests, have twice the amount of energy potential than the provinces of Imperia and La Spezia.

The potential mentioned above is theoretical and in order to reach that figure the necessary organisational conditions need to be in place. Organising a supply chain is complex and costly; cutting, assortment and extraction are complicated by the conditions of forests, often located on steep slopes without suitable roads. Additionally, companies that operate in the territory are often small with little mechanisation; this makes it costly to work on large forest areas. Currently it would make sense to run small or medium sized installations that use the resources available in limited areas with good communications by road.

Two chip-burning installations are in operation in Liguria for the production of thermal heating only which is distributed over a district heating network for public use. They are located in the cities of Rossiglione and Campoligure, in the mountain communities of Valli Stura and Orba (Ge). Other projects for chip systems for public use are currently under development.

Below is a list of the main projects:

Municipality	Mountain community	Power	Annual consumption [t/year]	Length of district heating network	mc of spaces to heat
Carcare	Val Bormida	800 kW	1.000	350 m	49.000
Sassello	Giovo	2.400 kw	2.600	5.000 m	
Rocchetta Vara	Val di Vara	100 kW	125	100 m	4.500
Badalucco	Argentina Armea	300 kW	280		8.400
Balestrino	Pollupice	1.500 kW	1.300	750 m	53.000

4.6 Tourism, sport and recreation

In Liguria forests provide a very important role in terms of opportunities to enjoy spare time. Landscape, mite climate, non wood products (mushrooms, truffles, small fruits, chestnuts), naturalistic/environmental aspects and local gastronomy make Ligurian forests and mountains quite interesting for recreation and tourism.

However, tourism is mainly developed along the coast, where there are more attractions and infrastructures (hotels, camping, restaurant, entertainments, tourist facilicities, etc.). Beyond that, unluckily - financial resources are not enough to improve forests' management in view of their multiple functions, tourist/recreation, productive and protective, considering that also productive forests need public financial support.

Equipped areas are still few, tracks are not always are properly maintained. More efforts could be done, under the forest view point, on this regard. For this reason, according to available regional statistics (2002) only 15% of the whole tourist flow (holiday's second house tourists included) gravitates in the regional inland, against the remaining 85% who prefers the coast.

Table 4 - Development of non-timber business opportunities within forests

Strengths	***Weakness***
The commercial/business interest	Not enough investments
Non-timber products are renewable resources	Not enough research and knowledge
They contribute to diversify productions and markets	Black market
They contribute significantly to local incomes	Not enough extension and training
Opportunities	*Threats*
Good opportunity for socio-economical development of local community and employment	Progressive/irreversible fall of natural productions of non-wood products
Good opportunity to qualify better the territory	Lack of appropriate rules about market of non-wood products
Good opportunity for environment enhancement	Progressive abandon of forests maintenance

5. FORESTRY PLANNING & MANAGEMENT

Different aspects concerning forestry planning and management that represent one of the crucial issues to appropriately develop the sector among them the most relevant are :

- Socio-economic issues
- Technical aspects (management plans, clearcuts,…)
- Institutional support

5.1 Economic SWOT different forest types

As already stated at chapter 3, in Liguria there are not extensively good quality forest stands and even if some forest types could represent an interesting economic value on the market, they cover only little surfaces.

Under the economic view point, the most interesting forest types are represented by:

- **chestnut stands**: coppice for poles and stakes, high forest for beam (if not affected by "*ring shake*);
- **beech stands**: coppice for firewood, high forest for sawmill
- **mixed broad lives stands**: coppice for firewood, individual trees for saw mill, if present.

Generally, small forest enterprises are not well structured or organized and, furthermore, the cutting surfaces are too little to allow a rational exploitation of resources, so good quality trees are regularly cut simply as firewood.

5.2 Forest with management plans

In Liguria, several forest management plans have been implemented in the last 15 years thanks to Regional and EU financing sources. Actually 75 forest management plans have been implemented for a total of 35.400 ha - out of which 66 public forest management plans (municipalities) for a total of 32.490 ha and 9 private forest management plans, for a total of 2460 ha.

Recently the last forest management plans have interested 1400 ha of private and public forests under the FSC certification scheme. To this purpose, specific management plans have been drawn up under way for approval.

5.3 Long and short term plans

Actually, in Liguria two level of forest planning exists :

- **1st level of planning: Regional scale**
- **3rd level of planning: Single Forest scale**

the **2nd level of planning : Local Mountain Authority scale** (Local Management Plan), has not yet been neither drawn up, nor implemented. Guidelines should be drawn up through Robin Wood project.

1st Level of planning, regional scale*:* a Forestry Regional Plan has been drawn up in 2004 and now the official draft is under way for institutional approval and finalization. The validity of the Regional Plan is 5 years, with possibilities of yearly updating and a planning revision every 5 years.

3rd Level of planning, single forest scale*:* so far the plans' duration generally is 10 years, but new management plans' validity should be 15 years, with three different period of cutting/intervention every five years, so that more flexibility is provided for forest intervention, according to availability of funds, means and forest owner needs.

5.4Recent innovations in technology

Until now no specific innovation in technology has been provided as regards forest planning and management, apart from mapping software applied to GPS. In the future this will be possible, as Liguria will adhere to a national programme concerning the establishment of a forest data base "Progetto Bosco" specific for planning activities.

5.5Integrated monitoring, forest health, held on GIS

In Liguria, there are not yet integrated monitoring systems. Monitoring activities are usually sectoral; they mainly concern forest fires monitoring and mapping (at regional level) and disease (monitoring, at local level, of *Matsucoccus feytaudi* on Pinus pinaster in La Spezia province).

5.6 Natural and semi-natural woodlands

In Liguria, the level of anthropisation is very high and all accessible land, since ever, has been worked and organized by man; for this reason it is very difficult to talk about natural or semi-natural woodland.

So far, it possible to distinguish three possible categories of natural/semi-natural woodlands, as follows:

- river banks vegetation
- few old local provenance forest stands (included/protected in SIC areas and forest seed collection areas)
- natural forest colonization of abandoned farming land

5.7 Clearcut forests

Due to geomorphologic aspects and forest management conditions (strong slopes, protective function of forests, few high forests, …), Forest Regional Law foresees very small clearcut surface: the surface extension may reach no more than 2.000 mq, with a 50 m distance in between consecutive clearcut plots.

5.8 Natural engineering (protection forest)

Natural engineering is always preferred at institutional level whenever possible as soil conservation measure; it is promoted as first choice of intervention, if local conditions admit it.

Main species for natural engineering assortments is Chestnut tree; chestnut poles/stakes represent a niche market in the north west of Italy, with possibilities of exporting the product also to Switzerland.

At employment level - natural engineering involves few small and very dynamic forest enterprises, as well as some foresters, professionals, specialised in this specific sector.

5.9 Public consultation and participation (agenda 21)

Agenda 21 and Environmental/forest certification schemes have significantly contributed to develop a participatory planning approach, as well as a more and more bottom-up approach in the region.

Stakeholders are generally involved in main discussions concerning planning, and central institutions are in close contact with local authorities any time is necessary for planning activities, project implementation, tender, etc.

The following certification schemes have been implemented locally:

Certification system	Number of municipalities/local authorities
Agenda 21	21 municipalities with a Local Action Plan + 30 under way
Emas	3 municipalities succeeded EMAS registration + 36 under way
ISO 14000	14 certified + 112 under way
ISO 9001	7 certified
FSC (FM+CoC)	3 certified + 2 under way
PEFC (CoC)	2 certified CoC, under way for FM

5.10 Integration with other land management & ecological networks

So far (up until to 2000) integration of forestry with other sectors has not been particularly promoted. Since 2000 and subsequent years, UE-RDP (Agenda 2000) and different regional planning works (forest regional planning, territory regional planning, Rete Natura 2000, …) strongly contributed to reach more integration among forestry and other sectors. The 2nd level of planning, Local Mountain Authority scale (Local Management Plan), will represent the planning tool where further integration will be more concretely possible as regards :

forest ⇔ infrastructures ⇔ environment ⇔ biodiversity (SIC/ZPS) ⇔ soil conservation ⇔ renewable energy resources ⇔ tourism.

5.11 Forestry within integrated Rural Development

It may be said that all forestry sector financial supports concern as well integrated rural development.

In particular it should be mentioned the UE-RDP 2000-2006, with a contribution of around 21.000.000 € for forestry activities, and the last Regional Funding (FIR integrated forestry projects, November 2004) for forest integrated projects, with a contribution of around 400.000 €, interesting two different projects (Val d'Aveto project, 1000 ha, and Valle Stura project, 850 ha), aimed to revitalize local woody chains.

5.12 Integration of small private woodland owners (formal vs informal co-operatives)

The issue of the ownership of the land represents a serious problem for forestry sector, as forest land is normally divided up among several different small owners. This situation makes quite difficult, if not impossible, an associated management of the land.

There are not enough experiences on this regard under way in Liguria, and it looks clear that it is not possible to succeed in an associated management of forest land, unless great investments in terms of human resources and funds, are supplied for local extension activities, training and technical assistance. Models should be studied to find out informal association schemes, in-expensive, easy enough for rural communities.

Forest Group Certification Scheme seems to be already a good tool for small owners association if a Forest Manager is able to co-ordinate and manage the whole process.

5.13 State provision of management systems for the private sector

Both EU-RDP and Forest Regional Law foresees financial incentives and specific measures for private sector (private owner, forest enterprises, …).

- EU-RDP, provided……
- Forest Regional Law, according to budget allocation, foresees up to 90% contribution for private forest management plans.

5.14 Small private owners

In Italy woodland owners are generally **small private owners,** where to be considered as a **small private owner** it is intended owners have less than 20 ha of forest land. Normally, private owners own less than 5 ha of forest land, while owners with more than 20 ha are considered **big owners**.

Table 5 - Forestry planning & management

Strengths	***Weakness***
Forest Regional Programme	Lack of updated and comprehensive data base
Robin Wood project	Lack of resources to carry out 2nd level planning
Inter-sectoral approach	Lack of resources for planning activities in general
Environmental planning and new sources of funding	
Opportunities	***Threats***
Opportunity to draw up appropriate 2nd level plans	Structural lack of funds fro the sector both at national and regional level
Opportunity to learn from the others' experience	