



**European Cooperation
in the field of Scientific
and Technical Research
- COST -**

Brussels, 21 November 2012

FP1203

MEMORANDUM OF UNDERSTANDING

Subject : Memorandum of Understanding for the implementation of a European Concerted Research Action designated as COST Action FP1203: European non-wood forest products (NWFPs) network

Delegations will find attached the Memorandum of Understanding for COST Action as approved by the COST Committee of Senior Officials (CSO) at its 186th meeting on 20 - 21 November 2012.

MEMORANDUM OF UNDERSTANDING
For the implementation of a European Concerted Research Action designated as
COST Action FP1203
EUROPEAN NON-WOOD FOREST PRODUCTS (NWFPS) NETWORK

The Parties to this Memorandum of Understanding, declaring their common intention to participate in the concerted Action referred to above and described in the technical Annex to the Memorandum, have reached the following understanding:

1. The Action will be carried out in accordance with the provisions of document COST 4154/11 “Rules and Procedures for Implementing COST Actions”, or in any new document amending or replacing it, the contents of which the Parties are fully aware of.
2. The main objective of the Action is to build a multidisciplinary European-wide network of NWFPS researchers and managers in order to increase the European knowledge about NWFPS ecology, modelling, management and economics.
3. The economic dimension of the activities carried out under the Action has been estimated, on the basis of information available during the planning of the Action, at EUR 100 million in 2012 prices.
4. The Memorandum of Understanding will take effect on being accepted by at least five Parties.
5. The Memorandum of Understanding will remain in force for a period of 4 years, calculated from the date of the first meeting of the Management Committee, unless the duration of the Action is modified according to the provisions of Chapter V of the document referred to in Point 1 above.

A. ABSTRACT AND KEYWORDS

Non-wood forest products (NWFPs) have important commercial, environmental, social and recreational roles in many European forests. They also have a relevant place in the multifunctional sustainable forest management (MSFM) paradigm, being the main source of income from forests in several regions. Although the importance of NWFPs is recognised and accepted, forest research remains mainly focussed on timber production. Consequently knowledge about European NWFPs is comparatively scarce, as is research on their ecology, management and economics, required to optimize sustainable simultaneous production of different products from forests. A multidisciplinary European network on NWFPs will help to bridge these gaps.

In this context, the main goal of the Action is to build a broad multidisciplinary network of European NWFPs researchers and managers, to review the current state of the art, highlight existing innovation, share information and experience, identify research topics, seek research synergies and by increasing the European-wide theoretical and practical understanding of NWFPs, promote their sustainable management.

A.2 Keywords: Non-wood forest products, NWFP, multi-purpose forestry, Sustainable forest management, European NWFPs.

B. BACKGROUND

B.1 General background

According to the FAO definition (FAO, 1999) non-wood forest products (NWFPs) are of “biological origin other than wood derived from forests, other wooded land and trees outside forests”. NWFPs offer wide range of many different products. NWFPs can be derived from trees, understory plants, fungi or animals. They are collected from natural forests, or produced in plantations and agroforestry systems. Examples of NWFPs include mushrooms, truffles, bark (e. g. cork), nuts, acorns and other tree fruits, resin, understory berries, medicinal and aromatic plants, fodder and litter for livestock, honey and game. A similar term often used for such products is non-timber forest products (NTFPs). The main difference between them is that NWFPs exclude all wood and NTFPs do not exclude wood other than timber such as fuel-wood, artisanal use of wood or charcoal.

Importance of the NWFPs in the forestry is clearly reflected in the official statistics of their value (Tables 1, 2).

Table 1 – Value (1000€) of marketed NWFPs: marketed plant and fungi products (adapted from FOREST EUROPE, UNECE and FAO, 2011)

European region	CM	MT	FBN	C	RR	OP	O
North	132 104	12 493	15 107	-	182	58 824	-
Central- West	733 900	14 550	883	775	32	7 202	55231
Central- East	2 830	10 587	28 132	-	1 621	1 802	106
South- West	110 828	124 161	299 574	323 850	2 364	-	7997
South-East	377	11 283	10 296	-	12 476	921	408
Total*	980 039	173 075	353 993	324 625	16 675	68 749	63742

*Europe without the Russian Federation

CM - Christmas trees; MT - Mushrooms and truffles; FBN - Fruits, berries and edible nuts; C- Cork; RR - resins, raw material – medicine, aromatic products, colorants, dyes; OP - Decorative foliage, including ornamental plants (e. g. mosses); O – Other plant products.

Table 2 - Value (1000€) of marketed NWFPs: marketed animal products (adapted from FOREST EUROPE, UNECE and FAO 2011)

European Region	GM	LA	P	H	R	O
North	5 791	-	345.5	-	-	-
Central-West	217 505	-	6 738	25 616	-	1 340
Central-East	15 117	1 221.2	2 136	-	1 115	2 461.1
South-West	149 537	-	-	101 088	-	-
South-East	4 266.5	-	8 439.16	3 660	-	-
Total*	392 217	1 221	17 659	130 364	1 115	3 801

*Europe without the Russian Federation

GM - Game meat; LA - Living animals; P - Pelts, hides, skins and trophies; H- Wild honey and bee-wax; R - Raw material for medicine, colorants ; O – Other animal products.

NWFPs importance differs between countries, therefore a comprehensive view on all their types across Europe is difficult to obtain. Examples of important NWFPs in Boreal and temperate forests are berries, mushrooms, game and Christmas trees. Concerning Mediterranean forests examples of important NWFPs are cork, pine nuts and mushrooms. Christmas trees, fruits, berries, edible nuts

and cork represented, in 2010, 83% of the total value of marketed plant and fungi NWFPs in the FOREST EUROPE region (Table 1). The total reported value of marketed NWFPs is approximately EUR 2.7 billion and has almost tripled since the State of European Forests 2007 assessment. However such increase is partly an artifact due to the improved assessment and reporting of NWFPs that occurred in recent years (even though there are still many gaps in NWFPs statistics). In European countries where information is available the total value of marketed NWFPs represented 15 % of the round-wood value (FOREST EUROPE, UNECE and FAO 2011). Tables 1 and 2 highlight that there are NWFPs which although are relevant in its economic importance at European level they have a clear regional distribution (e. g. cork). On the contrary there are NWFPs with European economic relevance which, although they might be more important in some European regions, their distribution is European-wide (e. g. mushrooms and truffles, Christmas trees, etc.). In Europe the multifunctional sustainable forest management (MSFM) paradigm is generally accepted on practical and political level. It aims at optimizing the provision of multiple goods and services which are demanded by society, while maintaining the equilibrium of the forest ecosystem. The need for meeting multifunctional demands as well as increasing the potential for commercialising NWFPs has been recognised by the European Forest-Based Sector Technology Platform. In order to optimise the production of a range of products and services forest management requires tools to quantify the production possibilities of wood and various different NWFPs and the impacts of forest management and changing environmental conditions (including climate-induced and emerging biotic and abiotic threats) in their provision. The provision of such information will facilitate a shift from wood-based management to MSFM. However, within European forest research, development and innovation have mainly focussed on timber production. Consequently there is a lack of detailed information in Europe about the ecology or economics of NWFPs so it is not possible to model or devise management systems to optimize the sustainable co-production of NWFPs, timber and ecosystem services in the context of climate change. Those issues are especially important in the context of an increased interest on NWFPs due to: a dramatic decline in round-wood sales process in Denmark (Helles and Thorsen, 2005); a rapid decrease of employment possibilities in German forestry (Mantau *et al.*, 2005); and an interest in natural products in the UK (Slee *et al.*, 2005).

The ecology of NWFPs is diverse as they represent a wide range of products from not only non-woody parts of trees (e.g. resins, fruit) and understory plants but also from other taxonomic kingdoms such as animals and fungi. Since abiotic factors that shape the ecology and dynamics of forests vary from temperature limitations in boreal and high mountain areas, to water limitations in the continental and Mediterranean regions, it might be expected that climate change will have a

wide range of effects on NWFPs across Europe.

Modelling NWFPs in respect to their possible production systems (from plantations to natural forests) is a challenge due to the large differences compared to traditional modelling for timber production. Difficulties might arise for many reasons, singly or together such as: annual variability (masting), large and small-scale spatial variability, non-normality, lack of correlation with traditional forest site indices, little known autecology and lack of systematic statistic data. Lack of NWFPs data to develop models is often due to the fact that only few NWFPs are officially included in formal forest statistics and when statistical data are collected and published; its quality is often questionable.

NWFPs production in several regions is a significant source of income from forests. Valuing NWFPs might be easy and straightforward in some of these cases (e. g. chestnuts from northern Italy) but difficult in others (e. g. wild edible mushrooms). Those difficulties arise mainly in cases where NWFPs are freely collected under open access regimes to be used directly by the collectors or sold in informal markets. Therefore a comparison of property rights regimes for NWFPs across Europe is necessary as it forms the basis for understanding opportunities for improved NWFPs management and production in the future. For forest management planning and decision support purposes, it is important to develop models that show how the characteristics of the forest and the management operations that change these characteristics affect the yield of NWFPs.

Management of NWFPs requires knowledge of their ecology and an understanding of their role in different types of forest or silvopastoral systems as well as its economics, markets and legal regulations addressed by specific focussed policies. Optimizing NWFP management and use can in some cases require adjustments to forest management that might not be compatible with maximizing timber yield. Therefore managing NWFPs might require the implementation of strategies to support a truly integrated MSFM which takes into account the benefits of complementary product and services and the possible trade-offs between conflicting interests.

Most European countries have some sort of on-going NWFPs research being carried out. However, so far this knowledge has remained poorly disseminated and is not readily accessible across Europe. The dissemination of available information would be well served by a multidisciplinary European network on NWFPs but there is no such organisation. Thus, the establishment of a COST Action on NWFPs, promoting networking and capacity-building activities, will be a great benefit for the European forestry and natural resources sectors.

B.2 Current state of knowledge

Forest research for NWFPs production is not as developed as for timber production. There are three main reasons for this:

(i) In Western Europe for the past hundred years the focus of forest research has been timber production. In this region, research on NWFPs is recent; however in the East there is a long-established research on NWFPs but due to language barriers and poor dissemination activities this remains largely inaccessible and poorly known.

(ii) In many parts of Western Europe the tradition of utilisation of non-wood resources disappeared as result of social and economic changes.

(iii) It involves a wide range of products from not only non-woody parts of trees (e.g. resins, fruit, bark, etc.) and understory plants but also other taxonomic kingdoms such as animals and fungi.

Therefore NWFPs modelling imply a diversity of data collection requirements, modelling strategies and expert knowledge from various scientific domains.

There are some special features distinguishing NWFPs from wood resources, which have a strong influence on its research and forest practice:

(i) low concentration of resources (Grochowski, 1990);

(ii) uneven distribution of resources (Grochowski, 1990; Mendes and Feliciano 2005);

(iii) yield/harvest large variability over time (including seasonality) and space (Grochowski, 1990; Lintu, 1998; Mizaras *et al.*, 2005);

(iv) strong dependence of yield/harvest on climatic conditions (Mizaras *et al.*, 2005);

(v) limited set of possibilities of harvest mechanisation (Grochowski, 1990; Seeland *et al.*, 2005);

(vi) poor durability and resistance to damage of products (Grochowski, 1990);

(vii) for several NWFPs, there is a complete lack of control over the collection for commercial use in many European countries, and also the lack of regulation concerning their economic exploration.

The current forest research context is more complex than the past wood-based production approach.

Forest management increasingly does not aim to optimise a single product (e.g. either wood or a NWFP) but to optimise multifunctional forest production – hence a bundle of products of different types as well as services. There is already expertise, data and models for several European NWFPs. Such knowledge is very geographically variable. In many cases, ecological knowledge on NWFPs is needed to be converted into mathematical models, which can be utilized in decision support tools to quantify the joint production of wood and NWFP.

Europe is characterized by a greater amount of historical information regarding mycological forest productivity, although these data are underused since they are fragmented among several research institutions and have never been analysed or studied jointly. Consequently, the data available about mushroom picking and commercialization of wild mushrooms are scattered, partial, heterogeneous

and difficult to compare. The immediate and potential economic value from these activities is, except for a few choice edibles such as truffles in parts of France, Italy and Spain, virtually unknown. This makes the inclusion of wild mushroom gathering in forest planning difficult. Forest mushrooms (including truffles) have historically represented one of the leading NWFPs in European forests due to their economic and social value, and also for their ecological importance. Moreover, mushroom picking is an important recreational activity in many European regions. The utilization of wild mushrooms (e.g. Boletus) has been increasing in European forest areas in recent decades, generating a strong demand for information about this forest resource. In most cases the human contact with wild edible mushrooms is essentially through local communities who see in them either a source of extra nourishment or an opportunity to increase their income. However, the traditional household-level collection and use seems to be decreasing and it is partly replaced by "professional like" berry and mushrooms pickers.

It is being recognized that there is a growing interest of transnational networks to commercialize the collection of mushrooms, while avoiding the potential benefits for private forest owners in bypassing their property rights. Furthermore, most transactions are still undertaken without an appropriate characterization that would help protect the forest systems and local communities, who are easily exploited due to erroneous perceptions of the true economic dimension generated. The changing practices drive a paradigm shift that is crying for updated information in every aspect of forest mushroom gathering and its impacts. This is a prerequisite for devising measures of control on social conflicts due to the feeling that commercial utilization of natural resources is not in line with traditional habits and prevailing everyman's rights, on income loss from misinformed management as well as decay in resource potential, and, not least, on international supply and demand.

An increased awareness of the binomial mushrooms-health in forest systems should improve many aspects of the attitude of local communities on wild mushrooms. Monitoring for nutritional hazards from heavy metal contamination (some of it radioactive) is not well coordinated, and regulations on gathering, when existent, are not enforced, and the impacts from these activities on forest systems are virtually untapped. Only recently some rulings are in place, mostly regarding the trade of hallucinogenic (EMCDDA, 2010). A few forest mushrooms belong in this trade, but these represent a minor part compared with those picked as food, but European and state controls should extend to other aspects of mushroom gathering that are more sizeable in forest management.

The use of numerical optimization techniques applied to the growth models for an individual tree combined with the mycological models will allow to alternative silvicultural regimes to be simulated. Recently, there has been a first attempt to establish a multifunctional silviculture

considering both, timber and mushroom productions. These preliminary results based on north-eastern Spain data encourage continuing developing new tools that allow integrating the mycological resources into forest management and planning expanding this methodology to other areas where there are enough available data which will be modelled and optimized, establishing dynamic forests scenarios which allow visualizing the effects of different silvicultural alternatives on mushroom yields.

NWFPs directly obtained from the trees can be summarised in: fruits, nuts and seeds, resins and other exudates, barks, and leaves. In Europe mainly harvested and commercialised tree-origin NWFP products are the nut from *Pinus pinea*, chestnut from *Castanea sativa*, cork from *Quercus suber* and resin from several conifers (*Pinus pinaster*, *P. halepensis* in Mediterranean countries and *P. sylvestris* or *Picea abies* in boreal regions). Main differential characteristics of tree NWFPs is that their harvesting can lead to a reduction in timber quality and/or tree vigour, as is the case of main resin extraction and debarking. In the case of fruit and seed collection, no direct damage is expected, but some practices as intensive pruning to improve fruit production or the use of vibrating harvesters can indirectly lead to decay of vigour. Given the intimate relation among tree survival and NWFP production, actual research on this topic mainly focuses on:

- 1) Develop harvesting techniques which warranty tree survival and maintenance of the biological basic processes of trees (growth and regeneration). New laws preventing the illegal or unregulated harvesting of these products have been developed in some European countries.
- 2) Identify main factors affecting NWFP production.
- 3) Define management schedules in order to optimize tree NWFP, including silvicultural practices for natural stands, and agronomy techniques, as grafting plantations for increasing nut production in pine nuts or fertilization techniques.
- 4) Specific models for tree NWFP under different global and management scenarios have been recently developed to support foresters in management decision (Calama *et al.*, 2011; Bonet *et al.*, 2010; Sánchez-González *et al.*, 2008; Miina *et al.*, 2009). In this context, works focusing on economical valuation and optimization of these products have been recently developed (Ovando *et al.*, 2010; Palahí *et al.*, 2009; Miina *et al.*, 2010).
- 5) Quality aspects and industrial and transformation processes. Recent advances on these lines include the implementation of quality control and certification topics, image classification of defects in pine nuts or cork and chemical properties.

Silvopastoralism is widespread in Europe, especially in the Mediterranean region (e.g. dehesa in Spain or montado in Portugal) and in mountain areas (e.g. wooded pastures of the Jura Mountains in Switzerland and France). Wood-pastures are a special case of forested ecosystems in which

multifunctional land use allows the provision of very various NWFPs, including berries, honey, mushrooms, medicinal plants, cork, etc. Moreover, the most important primary product from an economic point of view is forage grazed by livestock. Tree cover has a strong impact on forage production and quality, which in turn influence animal behaviour and performance. Little is known about the contribution of understory plants or forest species to the diet of grazing animals and its consequences on the agricultural products (e. g. milk, cheese, meat).

Changes related to climatic factors (e.g. winter warming, increased summer precipitation) can reduce flowering and berry production (Bokhorst *et al.*, 2008). But the relationships between yield of berries and climate variables are not fully understood (Wallenius, 1999). Therefore the potential of the models to predict changes in productivity are hampered by their limited capability to address climate change related impacts (e.g. droughts, bark beetle infestations, forest fire ignition; Lindner *et al.*, 2010). The project MOUNTLAND investigated the sensitivity of the provision of mountain ecosystem services to both climatic and land-use changes, and suggested innovative policies and governance structures for mitigating the impact of such changes and for enhancing sustainable management practices in mountain regions. For example, Gavazov *et al.* (*in press*) showed how pasture-woodlands forage production in the near future (2000-2050 AD) will be affected disproportionately throughout the landscape. Experimental and modelling work showed that extensive farming, which allows for a sparse tree cover development within grazed pastures, ensures a rather stable forage supply. To the contrary, herbaceous production in intensively-managed unwooded pastures diminishes, mainly due to evaporative loss of soil moisture. Insulating forest canopy cover, but also structural landscape diversity, grants wood-pastures a buffering potential in the face of climate change in the forthcoming decades.

Many different products are obtained and commercialized from understory plants throughout Europe. In Mediterranean countries young parts of bushes and mosses are collected for ornamental purposes and several aromatic species are wild-harvested for the extraction of essential oil, which is used in the food and perfumery industries. In Central, Eastern and Northern European countries medicinal plants and berries are important both for commercial and non-commercial purposes. Germany is the European hotspot of the medicinal and aromatic plant market. However, there is a lack of data related to the real extracted quantities and trade, biological and ecological issues and modelling of the effect of harvesting in the long-term conservation. Only in case of species of community interest or species which are widely marketed, such as *Arnica montana*, *Gentiana lutea*, *Arctostaphylos uva-ursi* or *Thymus sp.*, resource assessments, implementation of sustainable harvesting techniques and management plans had been done (Michler, 2007; Melero and Cristóbal, 2008; Recasens *et al.*, 2008; Bouquet and Gaultier, 2012).

The knowledge about medicinal and aromatic plants (MAP) can be counted by the tens of thousands of books and papers worldwide (Schippmann, 2001). Nevertheless, in the period 1997-2000, only around the 8% of bibliographic references was referred to European countries (from data in Schippmann, 2001). At the same time, the bulk of this information regards to pharmacology, medicinal properties and classical ethnobotanical research. However, information about distribution, biology, population dynamics modelling, resource assessments, sustainability thresholds, resource management, economics and trade is still scarce and scattered in Europe. Efforts in developing sustainable management of MAP had been done during the last 20 years, when international concerns about plant conservation issues relating to medicinal plants were rising. The need for improving the conservation status of plant species for which demands exceeds supply from wild populations was faced worldwide in the 90's. As a result, the MPSG-IUCN jointly with TRAFFIC, WWF and the German Federal Agency for Nature Conservation (BfN) developed between 2001-2006 the International Standard on Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP) (MPSG-IUCN, 2007), which defines guidelines and provides tools to collectors, producers and decision makers for the planning and implementation of a sustainable resource management system. Now the ISSC-MAP is part of the FairWild Standard version 2.0 (FairWild Foundation, 2010), the only one tool for certification of sustainable wild collection of plant products. Until 2011 FairWild standard had been issued in 7 companies, mainly from Eastern European countries, and for 30 different plant species (FairWild Foundation, 2011).

High densities of deer populations often have negative impacts on forests (damages on forest regeneration, debarking, damages to soil, etc.) and posing several problems to forest management and managers. Thus, forest management in such cases implies the control of deer populations. Therefore often from a forest management perspective research is mainly focusing on these forest management problems (e. g. Loudon, 1978) rather than on the potentials related to the commercialisation of the game activity and/or of the meat. The meat of wild deer species as well as of other animals (the name of this special type of NWFPs of animal origin is "venison"), can be a valuable non wood forest product, that can be commercialised together with the recreational activity (hunting is very important in many European countries).

Research on venison production and commercialisation in Europe is not developed as in other parts of the world where the value chain of this special type of product has been recently explored (e.g. Shadbolt et al., 2008). The potential for production and commercialisation of wild venison are proved by some initiatives, sometimes lead by public authorities (e.g. the UK Forestry Commission has developed "The Wild Venison Standard") where the key management practices to produce and marketing wild deer venison are defined. In the UK the possibility of marketing invasive species

e.g. Sika deer, feral goats and grey squirrels as a contribution to the cost of management is also being studied. The potential value of wild deer venison has been supported recently by means of forest certification (FSC certification in UK, for the wild deer managed in the Forestry Commission public forests). Nevertheless, no comprehensive and updated information on quantities, prices, value chains, forest management practices to support the production of this product are available throughout Europe.

The development and implementation of innovative products (or new uses for traditional products) strongly depends on social, institutional and political factors: Non-wood products are often dealt in forest laws and education as “by-products” or secondary forest products which is the reason that the innovation systems do not focus on this field (Weiss and Rametsteiner 2005; Weiss *et al.*, 2011). Furthermore, forest laws in many European countries allow free collection of those forest products for their personal needs (everybody’s right). All-in-all, non-wood forest products are typically not seen as a business field by forest owners and the development of these into market products is hardly supported by policies (Mavsar *et al.*, 2008).

Emphasis will be given in this Action to existing innovation on NWFPs. New uses for traditional NWFPs or new NWFPs will be highlighted. In addition, there will be focus on new forest management production systems for NWFPs as well as, when applicable, discussing impacts and benefits of NWFP domestication/cultivation processes. The Action aims at collecting innovative examples throughout Europe, but it will also reflect on the innovation processes behind and will derive recommendation on how to support innovations for NWFPs.

The Action’s innovativeness can also be seen from the fact that despite NWFPs are of recognised importance, in most European countries, focus is still mainly in timber production and a shift it is clearly advocated here towards a MSFM. The traditionalism in forestry sometimes leads to wrong conclusion that forests have no value, unless they are used for wood utilization. Still, NWFPs are one of the income sources, sometimes the most important one, for rural households and often promote the biodiversity protection. Therefore, the importance of improving existing knowledge on European NWFPs is clear.

B.3 Reasons for the Action

European forestry is seeking to evolve beyond forest management regimes focusing on traditional wood products. Alternatives go beyond new wood-based products as reactions to oversupply, important opportunities are on the production of “new” products (NWFPs) for answering the goals arising from shift to bioeconomies. Despite increasing country level research progress has been

stymied by the complexity of the problem and the scarcity of data, models and information on which to develop new decision support systems. However, in several countries, some NWFPs data and models are available but this knowledge has remained poorly utilized and disseminated and is not readily accessible across Europe. Joining efforts at European level to gather existing information, reviewing it, undertaking a gap analysis, identifying priorities for research and disseminating information will provide a framework to support the complex topic of sustainable management of NWFPs. Thus, the establishment of a multidisciplinary European network on NWFPs will be a great benefit from this Action.

At the UN conference, held 1992 in Rio de Janeiro, it was agreed to promote the efficient use of all products and services from forests. In a pan-European context, under The Ministerial Conference on the Protection of Forests in Europe, NWFPs importance is acknowledged in its resolutions, e.g. Helsinki (H1) and Lisbon (L1). The Helsinki resolution states that it is necessary to encourage use of NWFPs in accordance with the principles of sustainable forest management. It stresses the importance of socio-economic importance of NWFPs and services. The Lisbon resolution states that their contribution to society and sustainable rural development should be included in policies and development programs of forestry and other sectors.

NWFPs are indirectly mentioned in the Rio+20 outcome document “The future we want”. Here is, amongst other things, stated that small-scale forestry can have important influence on sustainable development, primarily through enhancing food security. As well, the document highlights the necessity to promote more sustainable forestry and maintenance natural ecological processes that support food production systems.

Sustainable use of biodiversity, whose essential parts are NWFPs, can support social well-being and sustainable livelihoods. In that sense, the importance of NWFPs for the development of rural areas and nature conservation is stressed as well.

As NWFPs collection is, in some countries, considered as a part of eco-tourism, for the development of this sector is important that Rio+20 document promotes the investments in sustainable tourism, in order to enhance establishment of small and medium enterprises and, on that way, positively influence the development of rural areas, enhance employment and income opportunities for all, especially for women and men living in poverty.

Those international agreements underline the importance of NWFPs and show how they are globally recognized. Taking into account that all national economies are, at the moment, looking for ways to increase economic benefits from natural resources, forests are exposed to increasing pressure. Considering that NWFPs should be an important aspect of silviculture and forest utilization, its sustainable management may affect forest sustainability. Also, NWFPs are one of the

income sources for rural households, which make forestry as one of the main factors of economic sustainability in rural development.

This Action addresses European economic and societal needs, as well as, scientific and technological advances. Indeed, sustainable management of NWFPs in Europe requires a framework where NWFPs ecology, modelling, management, economics, marketing and policies can be taken into account. The expected overall knowledge improvement about NWFPs will be a clear benefit for forest science in Europe. Furthermore, a clear positive social impact is expected on rural communities involved on NWFP management. Finally, the improvements to be obtained with better NWFP management will enhance the competitiveness of the European forestry sector as a whole.

B.4 Complementarity with other research programmes

Despite the importance and the need for further research on NWFPs, a multidisciplinary European-wide network on NWFPs is missing and only a recent call made by the 7th Framework Programme (FP7) is directly focussed on NWFPs (KBBE.2012.1.2-06). The STAR TREE project:

“Multipurpose trees and non-wood forest products for an innovative forestry in rural areas” was positively evaluated and shall be starting in November 2012. The present COST Action represents a strong opportunity for complementing and enlarging the scope of this project. STAR TREE is a research project which includes collecting field data, improving models or creating new ones, etc. focusing on a few selected case studies. This Action will achieve scientific progress by networking based on existing European-wide knowledge, therefore, having a broader European approach in terms of countries (right now already 25 COST countries and 10 non-COST Institutions but more are likely to join if this Action will be approved), experts and products. This Action has a strong synergy with STAR TREE: it will enlarge the STAR TREE audience and will provide STAR TREE with important feedbacks from a broader perspective as well as benefitting from the NWFPs research advances from STAR TREE. The participation of members of STAR TREE project in the COST Action will be a guarantee of synergy and complementarity, avoiding overlaps.

NWFPs have never had a dedicated COST Action although due to their importance they have been included within COST Actions with related topics. Therefore this Action complements, integrates and does not duplicate work already carried out in other existing COST Actions, in particular: E30 - Economic integration of urban consumers' demand and rural forestry production, E33 - Forests for Recreation and Nature Tourism (FORREC), E39 - Forests, Trees and Human Health and Wellbeing, E45 - European forest externalities, E51 – Innovation policies, FP0603 - Forest models for research and decision support in sustainable forest management. Current COST Actions such as FP0703 -

Expected Climate Change and Options for European Silviculture (ECHOES) and FP1201 - Forest Land Ownership Changes in Europe: Significance for Management And Policy (FACESMAP) shall bring advances which will be relevant to European NWFPs.

The work already developed on previous COST Actions regarding NWFPs although being partial is already very relevant, namely the one done by the Working Group 3 from COST E30 which was: Non-wood forest products and services (subgroups: definitions for NWFP, indicators, “Competence for change”, innovations, marketing). The aim of WG3 was to analyse the conditions under which the demand of especially urban population on non-wood forest products and services can be better integrated into rural supply. The focus was in the analysis of increased opportunities for demand-driven entrepreneurship in non-wood forest products and services (<http://www.joensuu.fi/coste30/WGs.html>). Such knowledge already developed will be incorporated in the work to be carried out in this COST Action.

The valuation, marketing, institutional and policy aspects in this Action will build on the Study on the Development and Marketing of Non-Market Forest Products and Services (FORVALUE) which was commissioned by DG AGRI (Mavsar *et al.*, 2008; Study Contract No. 30-CE-0162979/00-21). The Action benefits from the background work in the study and will give the possibility to broaden the empirical basis of the study.

Decision Support Systems (DSS) have proved to be suitable platforms for the integration of information, models and methods required to support the above outlined complex forest management problems. There is an on-going COST Action related to forest DSSs (FP0804, <http://fp0804.emu.ee/>), which directly relates to DSS development in this field and is working out a framework for the integration of growth models, methods for economic and socio-economic valuation taking into account a multifunctional forest management perspective. The Action benefits from the background work in this COST Action.

There are, and there have been in the past, a significant number of regional initiatives within the Leader and Leader+ programs aiming at promoting local development policies based on the promotion on NWFPs. Therefore there are numerous “roads”, “trails”, “ruote”, “strade” (of mushrooms, truffles, berries, nuts, ...) created at local level to connect different rural activities (B&B, agro-tourist farms, rural museums, school farms, artisan laboratories, restaurants, ...). This Action having a European scope will provide a framework to integrate the knowledge created by such programmes.

C. OBJECTIVES AND BENEFITS

C.1 Aim

The aim of the Action is to build a multidisciplinary European-wide network of NWFP researchers and managers, who will review current knowledge, highlight existing innovation, share information, identify research topics, seek research synergies and generally increase European knowledge about NWFP ecology, modelling, management and economics.

C.2 Objectives

Specific objectives of this Action are:

- i) to identify and describe existing NWFPs for the major types of forest ecosystems in Europe;
- ii) to review knowledge on NWFPs ecology and the potential threats or changes that might be expected for each group of NWFP in relation to climate change across Europe;
- iii) to compile existing data and models on NWFPs, identifying gaps in data and devising new protocols for NWFP data collection and modelling;
- iv) to conceptualise NWFPs production systems, discussing the management of NWFPs in relation to traditional forest management systems for timber production and advancing towards an integrated forest management considering the MSFM paradigm;
- v) to address the economics, social/cultural aspects, tenure rights and legal frameworks of NWFPs including valuation, marketing, and policies, as well as, their role for the Green Economy.
- vi) to highlight existing innovation on NWFPs and their production systems in Europe within the work to be carried out by the Action Working Groups and Task Forces.

C.3 How networking within the Action will yield the objectives?

This Action will have an European multidisciplinary approach for a sustainable management of NWFPs. As it is composed by NWFPs scientists and managers from many European countries this Action will be able to look at this important topic from an European level perspective. In addition, since knowledge on NWFPs ecology, modelling, economics, policy and management varies geographically, it will provide a way to ensure that there will be a knowledge transfer across Europe. Furthermore the participants of this Action have different fields of NWFPs expertise which makes possible to look at NWFPs in a multidisciplinary way. The objectives within this Action shall be achieved without new field data collected or new models developed. This only can be

considered to a limited extent through the STSMs to be carried out. Therefore, networking, and not research itself, will provide a framework where existing information will be compiled, reviewed and disseminated. Additionally, this approach offers a unique opportunity to identify at an European level the major knowledge gaps and research priorities which will need to be addressed to fully implement sustainable management of NWFPs in Europe. The exchange of the experiences of different approaches in ecosystem modelling (e.g. single tree and stand growth and yield models, patch and ecosystem models at different level of physiological detail) will help to define the needs in predicting the effect of different NWFP management strategies.

C.4 Potential impact of the Action

Although not every European country can produce each NWFP due to environmental constraints (e.g. cork oak will not grow in boreal climate), every country has the potential to produce some NWFPs. Therefore the potential positive impact of this Action is high for all European countries. This Action will be important to work towards common models and databases with pan-European influence and possibilities for further applications (scientific, management-oriented or commercial). Maximizing the impact of this Action will be done not just by ensuring the successful achievement of its deliverables but also through involvement in the Action of Small and Medium Enterprises (SMEs) and associations of NWFP collectors/producers.

This COST Action has already members from 25 European COST countries and more will be able, and encouraged, to join if this Action will be approved. The large participation of countries interested on NWFPs testifies not only its importance but also its European-wide impact.

C.5 Target groups/end users

Target groups and end users of this Action will be NWFP stakeholders including forest owners, managers, policy makers, researchers, collectors, traders, rural communities, non-governmental organizations (NGOs), Small and Medium Enterprises (SMEs), associations of NWFP collectors/producers, policy makers, authorities and statutory forest agencies. Some of these stakeholders have been actively involved on the preparation of the proposal for this Action. This Action will promote the involvement of more stakeholders ensuring a wide dissemination of results. Moreover, a database of NWFP stakeholders has been created in the Action's website to facilitate knowledge transfer among them.

The expected results from the Action will increase of information on NWFPs ecology, modelling,

policy, economics, marketing and management. Such knowledge will be important to support stakeholders and end users on decision-making towards a sustainable management for non-wood forest products (NWFPs) in Europe.

D. SCIENTIFIC PROGRAMME

D.1 Scientific focus

The objectives of this Action will be achieved through four research tasks and one dissemination task. Each task comprises several subtasks, intending to cover all the objectives established. Action tasks will be carried out as a set of well-defined activities within a scheduled time frame. This scientific programme intends to be flexible enough to permit the inclusion, at the implementation stage, of inter-disciplinary perspectives and activities not foreseen during the preparation of the Action. Therefore the framework of this Action is open and flexible.

Task 1: Identification and ecology of existing NWFPs in Europe

Subtask 1.1: Identifying and describing existing NWFPs

This subtask will identify and describe NWFPs in Europe. Taking into account that there are NWFPs experts within the Action from many European countries a list of commercial NWFPs existing in Europe will be created. This list will also categorise wild and cultivated NWFPs in different agro-ecological zones. Non-commercial NWFPs with identified potential to be marketed will be also included. Afterwards, all major information from the identified NWFPs will be gathered taking into account the database design proposed (subtask 1.3). Existence of innovative NWFPs uses will be investigated and highlighted.

Subtask 1.2: Reviewing NWFP ecology

This subtask will review what is known about the ecology of the identified NWFPs. Such work will be able to highlight knowledge gaps. Eco-physiological aspects of NWFPs productions should be the basis for future physiological based NWFP modelling. Another very important topic to be addressed is the potential threats or changes that might be expected for each NWFP in relation to climate change across Europe.

Subtask 1.3: Establishing a database of NWFPs produced in Europe

This subtask will design and populate a database of NWFPs produced in Europe which ultimately will be available to the public using the Action website. During the first year a protocol will be design to guide the collection of NWFP information. Each NWFP included in the database must be described according to the agreed design and the related literature should also be included in the database as well as links to existing websites with information about the respective NWFP. This

subtask will be coordinated with other international organizations with experience in this field (e. g. FAO and EFI) in order to avoid overlapping. A prototype of this database is already available in the Action's website.

Task 2: Modelling NWFPs in Europe:

Subtask 2.1: Reviewing NWFPs data and models

This subtask will compile and review existing data and models from European NWFPs. A smaller list of NWFPs is expected when compared with the one produced in Subtask 1.1, as there is known lack of data and models for many commercial European NWFPs. Such information shall be then organised in order to be easily searchable and available as well as integrated in the database of NWFPs produced in Subtask 1.3.

Subtask 2.2: Reviewing NWFP modelling methodology

Due to the high diversity within NWFPs it is challenging to choose appropriate modelling methodologies. In this subtask focus should be given on proposing: (i) protocols for data acquisition and surveying strategies, including extensions to incorporate NWFPs in National Forest Inventories (NFI); (ii) specific methodologies for modelling NWFP production.

Subtask 2.3: Identifying data and model needs

This subtask will identify data and model gaps for European NWFPs. This work will be not just a consequence from subtasks 2.1 and 2.2 but also will need to take into account current NWFP management (subtasks 3.1 and 3.2) and what is missing to achieve a sustainable management for non-wood forest products (NWFPs) in Europe. Present subtask will try to promote cooperation within the network members identifying innovative projects, pushing for a collaborative research projects.

Task 3: Identify management models used for NWFP production within Europe

Subtask 3.1: Reviewing current NWFPs management

This subtask will address how NWFPs are currently being managed in Europe. This work shall highlight what expertise or models are being used to support the management of such management decisions. In addition, it also will highlight which are the important NWFPs without a proper management in Europe.

Subtask 3.2: Towards a multifunctional management: managing NWFPs with other products

This subtask will address how the production of NWFPs can be combined with wood production and/or other productions. Ensuring a sustainable forest production implies a forest management to optimise the joint production of wood and/or other products and NWFP. Particular attention should be given to trade-offs from a combined production. Environmental conditions (including climate change and emerging biotic and abiotic threats) shall be taken into account having in mind this multi- production approach. The analysis will allow identifying successful combinations of NWFPs ecosystem services within a particular socio-economic situation. This is a step towards the realisation of the ecosystem services approach.

Subtask 3.3: Guidelines for NWFPs management

Based on the expected results of the task 2 and subtasks 3.1 and 3.2, this subtask will attempt to compile and develop standardized silvicultural and management instructions enhancing NWFP productions as well complementary yield of wood and non-wood forest products. Existing management concepts (e.g. single tree oriented planting systems, age class systems, close to nature management systems) will be screened for their applicability for a combined production of NWFP and wood. Such work will imply the existence of solid research information in terms of modelling and economics and therefore it is expected to create these guidelines only for a limited number of European NWFPs.

Task 4: Economics, marketing and governance of NWFPs

Subtask 4.1: Reviewing NWFPs economics and marketing

The NWFP **market** environment will be analysed in selected national and regional case studies with regard to the economic nature of the product (i.e., private, club, common or public goods; product's structural aspects of managing excludability and rivalry via product design), involved supply chain actors (special reference to forest managers), added value creation, employment effects and distribution; co-benefits and costs (market and non-market) associated to the NWFPs value chain, the general market structure (i.e. the level of concentration and horizontal and vertical integration), transaction costs, and the main elements of marketing strategies (e.g., market segmentation and consumer behaviour, product development, pricing and contracting, distribution and networks, product and enterprise communication).

Subtask 4.2: Reviewing NWFPs tenure and governance

The **governance structures** will be explored in different European countries by analysing the role

of public policies (regulations and support services, public procurement policies, innovation and rural development policies) and institutional actors (public administration, associations, and other formal and informal networks). A comparative analysis of the governance structures and its performance will be prepared for demand driven (e.g., cork, foliage, berries) and supply pushed products (specialized products sold locally and complementary products). Policy recommendations will be derived for different national backgrounds and on the European level.

Task 5: Dissemination

Dissemination is a crucial aspect to ensure that there will be knowledge transfer from this Action to European NWFP stakeholders and end users. Apart from the instruments that COST makes available that facilitate dissemination, which will be used in this Action, the short term scientific missions and the trainings schools, there are also other ways to disseminate, according with the following subtasks:

Subtask 5.1: Action website and social media

The dissemination of this Action will use its website, www.nwfps.eu, as the major platform to reach its participants, stakeholders and general public. Therefore, the website will be operational from the inception of the Action. All the elements produced within the Action – discussion papers, reports, databases – will be made available on the website. This website has a section with news which is a blog to announce all the events and activities to be organised within the Action. A twitter account and a Facebook page, already created and to be expanded when the Action will entry into force, will enlarge the European NWFPs stakeholders audience improving the dissemination to be carried out by the Action.

Subtask 5.2: Establishing a database of NWFPs stakeholders

This subtask will design and populate a database of NWFPs stakeholders which will be available to the public using the Action website. During the first year the content to be included and its format related to the NWFPs stakeholders will be decided. This database will be a way to facilitate the contact amongst stakeholders. A prototype of this database is already available in the current website which can be seen by following the beta view link already provided.

Subtask 5.3: Joint scientific papers

This Action intends to publish joint scientific papers which take the form of review papers on each of the NWFP research fields (ecology, modelling, economics and marketing, policy and

management) featured in the Action. Young scientists who will carry out STSMs under this Action will be strongly encouraged to publish their work as research papers.

Subtask 5.4: Final open international conference

Close to the end of the Action an open international scientific conference will be organized, providing a comprehensive state of the art, and presenting and disseminating the results of the Action. Efforts will be made, to increase the visibility of this Action, by contacting major International Forestry institutions such as IUFRO, FAO and EFI as well as major European associations dealing with NWFPs. This conference shall also be complemented by showcasing the results achieved by the STSMs. Proceedings of the final open international conference shall be published.

Subtask 5.5: Book on European NWFPs

A book on “Sustainable management of European non-wood forest products” summarising the main findings and conclusions of the Action will be written. This book intends to be a legacy from the knowledge compiled and reviewed during the Action.

D.2 Scientific work plan methods and means

As the sustainable management for NWFPs in Europe is a wide and complex topic, this Action will be organized using a matrix approach with four Working Groups (WGs) and four cross-cutting Task Forces (TFs). A Task Force (TF) will be a unit established to work on a single defined Action research task (Tasks 1 to 4). WGs are responsible for the Action’s work according to the NWFP types. TFs will ensure the integration of the work to be produced by the WGs according to the Action research tasks. The WGs to be created will be as follows:

Working Group 1: Mushrooms and truffles (WG1)

This group will work on the Action research Tasks 1 to 4 focusing on European mushrooms and truffles. Due to the high number of European mushrooms and truffles species this WG will select the ones where the work to be carried out by the WG will be based on, taking into account their importance in the European context. Special attention will be given to innovative non well-known species, including the added value from wild mushrooms, inoculation techniques and the potential for cultivation of several mushrooms and truffles species. Expected impacts and benefits should be considered in this process.

Deliverables: 1) a review of the state of the art and identification of knowledge gaps of European mushrooms and truffles which shall be either a book chapter, a report or published in a peer-reviewed scientific journal. Such publication shall highlight major findings on their ecology, modelling, management, economics, marketing and policies. Focus will be given to existing European innovative case studies.

Working Group 2: Tree products (WG2)

This group will work on the Action research Tasks 1 to 4 focusing on NWFPs from trees (e.g. bark, nuts, resin, etc.). WG2 will select which NWFPs of this type will be the focus of the work to be carried out, taking into account their importance in the European context. Focus should be given to potential new uses of existing tree NWFPs as well as new processes of production/extraction and new products.

Deliverables: 1) a review of the state of the art and identification of knowledge gaps of European NWFPs from trees which shall be either a book chapter, a report or published in a peer-reviewed scientific journal. Such publication shall highlight major findings on their ecology, modelling, management, economics, marketing and policies. Focus will be given to existing European innovative case studies.

Working Group 3: Understory plants (WG3)

This group will work on the Action research Tasks 1 to 4 focusing on NWFPs from understory plants (e.g. berries, medicinal plants, forage). WG3 will select which NWFPs of this type will be the focus of the work to be carried out, taking into account their importance in the European context. Emphasis will be put on innovative products and processes related with this type of NWFPs.

Deliverables: 1) a review of the state of the art and identification of knowledge gaps of European NWFPs from understory plants which shall be either a book chapter, a report or published in a peer-reviewed scientific journal. Such publication shall highlight major findings on their ecology, modelling, management, economics, marketing and policies. Focus will be given to existing European innovative case studies.

Working Group 4: Animal origin (WG4)

This group will work on the Action research Tasks 1 to 4 focusing on NWFPs from animal origin (e. g. game, honey). WG4 will select which NWFPs of this type will be the focus of the work to be carried out, taking into account their importance in the European context. The effect from the

management of forest areas for hunting in the production of other NWFPs will be considered.

Deliverables: 1) a review of the state of the art and identification of knowledge gaps of European NWFPs with animal origin which shall be either a book chapter, a report or published in a peer-reviewed scientific journal. Such publication shall highlight major findings on their ecology, modelling, management, economics, marketing and policies. Focus will be given to existing European innovative case studies.

WGs will therefore concentrate their work on research Tasks 1 to 4 in relation to a type of NWFP. To ensure that it will be possible to look at each of those Tasks as whole considering European NWFPs, cross-cutting Task Forces will be created. Such Task Forces will ensure that each WG will work in a comparable way and it will be possible later to integrate the work of each WG. In addition, it is expected that the work being carried out by Task Forces will help the liaison between Working Groups as it will be following up the simultaneous advances being produced on them. The TFs to be created will be as follows:

Task Force 1: Identification and ecology of NWFPs in Europe (TF1)

TF1 is going to be responsible to integrate the work from WGs in relation to Task 1: Identification and ecology of existing NWFPs in Europe and its 3 subtasks (section D.1).

Deliverables: 1) a review of the state of the art and identification of knowledge gaps in the ecology of European NWFPs which shall be either a book chapter, a report or published in a peer-reviewed scientific journal. Such publication shall include a discussion on similarities and differences amongst NWFPs ecology taking into account NWFP types and by doing this to better understand the biological grounds towards a MSFM.

Task Force 2: NWFP data and models: state of the art, needs and improvements (TF2)

TF2 is going to be responsible to integrate the work from WGs in relation to Task 2: Modelling NWFPs in Europe and its 3 subtasks (section D.1).

Deliverables: 1) a review of European NWFP data and models, including identified data needs, which shall be either a book chapter, a report or published in a peer-reviewed scientific journal. Such publication shall include a discussion on similarities and differences amongst NWFPs models taking into account NWFP types and the possibility to combine such models or their predictions towards a MSFM.

Task Force 3: Optimising co-production of NWFPs (TF3)

TF3 is going to be responsible to integrate the work from WGs in relation to Task 3: Identify different management models for optimizing NWFP production under different forest management conditions and its 3 subtasks (section D.1).

Deliverables: 1) a review of European NWFP management, which shall be either a book chapter, a report or published in a peer-reviewed scientific journal. Such publication shall include a discussion existing co-production of NWFPs or opportunities for co-production towards a MSFM within particular socio-economic and climatic conditions.

Task Force 4: Economics, marketing and policies for NWFPs (TF4)

TF4 is going to be responsible to integrate the work from WGs in relation to Task 4: Economics, marketing and governance of NWFPs and its 2 subtasks (section D.1). It will collect data on national level (institutional frameworks) as well as in empirical case studies.

Deliverables: 1) a review of European NWFP economics, marketing and policies, which shall be either a book chapter, a report or published in a peer-reviewed scientific journal. Such publication shall include a discussion on similarities and differences amongst NWFPs economics, marketing and policies promoting or preventing opportunities towards a MSFM, focusing on the identified innovative European cases. This Task Force will decide whether it will be better to look at economics, marketing and policies together or shall be handled in separate publications.

Common to all WGs there will be in this Action:

1) a database of European NWFPs. The European non-wood forest products (NWFPs) network intends to make available online a database of European NWFPs. A prototype of the database is already available to provide an idea of what this database might look like and by doing that to facilitate a decision on its final format to be made when the Action will entry into force. This database offers challenges both for the variety of products that are included within NWFP and by the heterogeneous information available amongst those products. NWFPs diversity might imply that, despite a common structure is aimed for each product across the database, specific fields might be required depending on NWFP type. Concerning the unbalanced distribution of knowledge amongst NWFPs it is expected that a minimum of information to be defined will be necessary so that a product might be listed in this database. In addition, some products have already too much information to be presented in a single NWFP database description. In such cases link will be provided for other pages within NWFP network or for external sources as well as a list of relevant publications about it shall be provided. When the first beta version of the database will be available

online more information will be provided to facilitate an easy access to its information contents.

2) a database of European NWFPs stakeholders. This database intends to provide an online platform for NWFPs stakeholders. People with a common interest on European non-wood forest products can use this database for networking. This database might not be used just for active Action members but also by NWFPs stakeholders that might not actively be involved in the research being carried out by this Action. Therefore, apart from database groups created for the Action research groups others might be created to facilitate networking amongst NWFP stakeholders.

3) proceedings of an international conference to be organised in the final year of the Action;

4) a book on “Sustainable management of European non-wood forest products” summarising the main findings and conclusions of the Action , which will be carried out with the support from all existing Action WGs and TFs. During the first year of the Action the contents of this book shall be agreed so it can be clearly defined on what shall be published in this book or in review papers or reports and who is taking responsibility for which kind of contribution in order to allow a sound collaboration between the Working Groups.

E. ORGANISATION

E.1 Coordination and organisation

The implementation of the Action will be supervised and coordinated by a Management Committee (MC). This MC will be established following the “Rules and Procedures for implementing COST Actions” and it will be responsible for planning, execution and delivery of this Action. The MC will appoint from the start a Chair, Vice-Chair, and coordinators for WGs and TFs.

Due to the great importance of STSMs for this Action, and the intention to have two calls per year, a Coordinator for STSMs will be appointed. This coordinator will monitor and supervise the STSMs to be carried out under this Action. WGs and TFs should contribute with topics for potential STSMs that the STSM coordinator is going to handle, so that the calls for STSMs will be in line with the work programme of the Action.

A Dissemination coordinator will also be appointed to ensure this important task is accomplished in good time.

The MC will also appoint a Steering Committee (SC) consisting of the Chair, Vice-Chair, WGs and TFs Coordinators. The Action will make efforts to achieve a good balance of gender, geography and ESRs in the SC.

It will be asked to the Action members who will be appointed MC members to be responsible for

the NWFPs network regarding their country. They shall coordinate the participation of active WGs members of their country, as much as the Action budget will allow it.

It will be discussed on the Action MC first meeting the eventual establishment of an advisory committee who would work as a liaison with the institutions involved in other NWFPs programmes/projects and in particular with the STARTREE Project of the FP7 call KBBE.2012.1.2-06.

This Action will work towards a series of milestones, identified in the Action timetable, to closely progress the major achievements that are crucial to the future direction of the Action, they are the following:

Milestone 1: Establishment of Action's organization structure (MS1)

In the inception meeting the MC should appoint Action participants to implement the Action's organization structure. Therefore, by the close of this meeting there should be a Chair, Vice-Chair, WG and TF coordinators, STSM coordinator, Dissemination coordinator and SC.

Milestone 2: Evaluation of available information adjustment of scientific programme if necessary (MS2)

The second Action meeting should comprise of an SC meeting, an MC meeting and WG and TF meetings. During these WG meetings there should be detailed presentations and discussion about the published information available on European NWFP by research area. Such information should have been collected between the first and second meetings. If this information lead to the need on adjusting the scientific programme this will be undertaken. The analysis of the collected information will be also useful to guide further information collection.

Milestone 3: Integration of information and reviewing work (MS3)

The third Action meeting will comprise an SC meeting, an MC meeting and WG and TF meetings. During these meetings the on-going work on integration of NWFPs information and reviewing will be presented and reviewed.

Milestone 4: Draft of review articles, databases and guidelines (MS4)

The fourth Action meeting should comprise of a SC, a MC and WG meetings. During these meetings a beta version from the NWFP and stakeholders databases and a draft of review papers and management guidelines will be presented and discussed.

Milestone 5: Final report, review articles, databases and book (MS5)

The final Action meeting should focus on disseminating the results produced during the Action. Equally, an emphasis should be given to the identified knowledge gaps and relevant future research topics on European NWFPs. It will be an International Conference where major European NWFP stakeholders will be invited to ensure a good knowledge transfer for the Action end-users. Review articles, databases and the book should be ready.

E.2 Working Groups

As described in Section D.2, this Action will be organized using a matrix approach with four Working Groups (WGs) and four cross-cutting Task Forces (TFs). Each Working Group has a clear plan with associated to the Action research Tasks (1 to 4) and expected deliverables around specific types of NWFP. Each WG will have a coordinator to ensure the implementation of the work plan. TFs shall ensure that knowledge to be produced will be also integrated, organized and presented considering NWFPs as whole and which are the opportunities and threats towards a MSFM. Each TF will also have a coordinator. Since this Action will be organized using a matrix approach with four Working Groups (WGs) and four cross-cutting Task Forces (TFs) there will be 4 vice-coordinators for each WG, who will be helping on the coordination of the WG work in relation to the respective Action research task (1 to 4). All the vice-coordinators working with the Task 1 will be part of Task Force 1. Similarly the vice-coordinators for Task 2, 3 and 4 will be part of Task Forces 2, 3 and 4 respectively. Every member of the Action will ultimately belong to a Working Group but not necessarily to a Task Force.

E.3 Liaison and interaction with other research programmes

Participants from this Action are actively involved (or were involved in case of programmes that have already finished) in other research programmes related with the sustainable management for NWFPs in Europe which are mentioned in section B.4. Such fact will certainly facilitate the liaison of this Action with other research programmes on NWFPs. In addition, it will be discussed on the first meeting from the Action MC the eventual establishment of an advisory committee to facilitate the liaison with the institutions involved in other NWFPs programmes/projects.

As it is stated in section B.4, this Action has a strong synergy with STAR TREE Project (KBBE.2012.1.2-06). The participation of members of STAR TREE project in the Action will be a guarantee of synergy and complementarity, avoiding overlaps. To follow up closely and share

achievements from this COST Action and STAR TREE will be studied and discussed the possibility to do joint seminars and invite STAR TREE speakers to the meetings of this COST Action. This approach shall be also considered in regard to other COST Actions which have relevant topics for NWFPs, namely: FP0703 (ECHOES); FP1201 (FACESMAP) and FP0804 (FORSYS).

E.4 Gender balance and involvement of Early Stage Researchers

Gender balance and involvement of Early Stage Researchers (ESRs) will be promoted straight from the beginning of the Action in the establishment of its organisation structure, by ensuring there will be a gender balance and ESRs at the Action management namely: Steering Committee (SC) consisting of the Chair, Vice-Chair, coordinators for Working Groups and Task Forces. Moreover, the coordinator for STSMs and the coordinator for Dissemination shall be preferably ESRs.

Additionally, when the Action Working Groups and Task Forces will be created attention will be drawn to gender balance and involvement of Early Stage Researchers.

Early Stage Researchers will have priority for STSMs to be carried out under this COST Action. A call will be open every six months for the duration of the Action to encourage the exchange of scientists. It is foreseen that an average of 8 people per year will benefit from STSMs. This will allow the training of a significant number of ESRs over the period of the Action. STSMs will be widely advertised to attract ESRs. Gender balance will be promoted for the STSMs to be undertaken under this COST Action.

ESRs will also have priority on the training schools to be organised under this Action. At least one training school will be organised under this Action and more if the Management Committee will consider it appropriate.

F. TIMETABLE

The timetable takes into account that the research work in this Action is ambitious and implying to start working from the beginning. As in any other schedule with a time span of 4 years, it is possible that adjustments might be necessary during the course of the Action. Nevertheless efforts will be made so that the scheduled dates will be followed.

European non-wood forest products (NWFPs) network - TIMETABLE

Tasks, subtasks and activities	Year 1				Year 2				Year 3				Year 4					
	Year	Quarter	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1. Identification and ecology	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1.1. identification	x	x	x	x	x	x	x											
1.2. review ecology			x	x	x	x	x	x	x	x								
1.3. database of NWFPs	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2. Modelling	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2.1. review data and models	x	x	x	x	x	x	x											
2.2. modelling methodology			x	x	x	x	x	x	x	x								
2.3. data and model needs								x	x	x	x	x	x	x	x	x	x	x
3. Management	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3.1. review management	x	x	x	x	x	x	x											
3.2. multifunctional management			x	x	x	x	x	x	x	x								
3.3. guidelines for management								x	x	x	x	x	x	x	x	x	x	x
4. Economics	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4.1. review economics	x	x	x	x	x	x	x	x	x									
4.2. review tenure and governance			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5. Dissemination	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5.1. website and social media	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5.2. database of stakeholders	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5.3. Joint scientific papers									x				x					x
5.4. Final open conference																		x
5.5. Book on European NWFPs																		x
SC meetings	x		x					x				x						
MC meetings	x		x					x				x						
WG / TF meetings			x					x				x						
STSM's calls		x		x	x			x		x		x		x		x		
Training schools														x				
Milestones		1		2				3				4						5

G. ECONOMIC DIMENSION

The following COST countries have actively participated in the preparation of the Action or otherwise indicated their interest: AT, BG, CH, CZ, DE, DK, EE, EL, ES, FI, FR, HR, IT, LT, MK, NL, PL, PT, RO, RS, SE, SI, SK, TR, UK. On the basis of national estimates, the economic dimension of the activities to be carried out under the Action has been estimated at 100 Million € for the total duration of the Action. This estimate is valid under the assumption that all the countries mentioned above but no other countries will participate in the Action. Any departure from this will change the total cost accordingly.

H. DISSEMINATION PLAN

H.1 Who?

This Action will target key NWFPs stakeholders as targets for the dissemination of the results of the Action. They will include existing specific NWFPs networks (e. g. Castanea, the European Chestnut Network, which serves the Chestnut Farmers Associations as a lobbying organization on the economic, cultural and tourist development of the activities connected with the Chestnut Tree), environmental NGOs, associations of forest landowners, forest managers, policy makers and other forest researchers covering related topics to NWFPs.

H.2 What?

A website has been developed for the Action (www.nwfps.eu) which will be launched to the public as soon as the Action entry into force. This website will be regularly updated, to facilitate the public access to the information to be produced by Action members, announcements, news, proceedings from workshops, minutes from MC meetings and publications to be produced. In addition, the website will have a password protected area where working documents will be shared within Action participants. Mailing lists will be created for SC, MC, WGs and a global list including NWFPs stakeholders interested in the activities and results from the Action. This website will have NWFPs and stakeholders databases. At the stakeholders database members will have their information available and will be able to be organised in groups discussing within them.

The European non-wood forest products (NWFPs) network website will be complemented by a twitter account and a Facebook page, already created and still to be expanded, which will enlarge the audience to be reached by the website. These social media websites will be updated with news

related with the network activities.

Participants will be encouraged to write joint papers, especially, review papers to be submitted to international scientific journals. There shall be a book published at the end of the Action under the title “Sustainable management of European non-wood forest products”. STSMs will allow the training of a significant number of Early Stage Researchers (ESRs) over the period of the Action. The Action will encourage the publication of work under the STSMs will result, whenever practical in peer-reviewed scientific and technical Journals. In the final year of the Action an International Conference shall be organised and proceedings published. There will be at least one training school on the objectives of the Action to provide young scientists with a concentrated and multidisciplinary interface to pan-European expertise on NWFPs.

H.3 How?

Special attention is given to dissemination and there is a specific task for it (see section D.1, Task 5, for details). A Dissemination coordinator will be appointed to be responsible for the website which is one of the main channels to disseminate the Action. This will facilitate the knowledge transfer widely including to the NWFPs stakeholders in Europe. The Action will address stakeholder groups in regions and at the SME level where selected case studies are implemented; at the national and European level the web portal will be used as a reference knowledge and data source. Participants of this Action will be encouraged to promote the Action in their countries of origin in particular increasing the awareness of the Action website where the information will be centralised.