

CONSERVATION OF EASTERN EUROPEAN MEDICINAL PLANTS: *ARNICA MONTANA* IN ROMANIA

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PROJECT BACKGROUND

Southeast Europe is one of Europe's most important and richest biodiversity hot-spots.

Large and relatively unspoilt natural or semi-natural ecosystems contribute to this remarkable level of biodiversity as do traditionally managed cultural landscapes.

Following a long tradition, the local rural population in most Southeast European countries has collected and used a variety of wild plant and mushroom species for medicinal, cosmetic and nutritional purposes, be it on subsistence level or for trade.

Today, Southeast Europe is by far the most important European source region of medicinal plants collected from the wild.

Bulgaria, Albania, Croatia and Romania in particular provide the European market with considerable amounts of raw material: On average, over 36,000 tonnes of pharmaceutical plants are exported from East and Southeast Europe every year (Lange, 2003).

As elsewhere in Europe, however, the destruction or conversion of habitats and an increasing demand for raw material, have piled on the pressure on medicinal plant resources in the Balkans. WWF has expressed concern over this development, which is likely to be further aggravated in countries preparing for accession to the European Union.

The World Wide Fund for Nature (WWF), the University of Agriculture and Veterinary Medicine (USAMV) and Babes-Bolyai University (UBB) in Cluj have initiated the project "Conservation of Eastern European Medicinal Plants: *Arnica montana* in Romania" to make this problem more widely known and develop a model for the sustainable use of medicinal plants from the wild.

The project is scheduled for a three years' period (April 2004 – March 2007) and funded by the Darwin Initiative, UK.

The project is being carried out at field level with the community of Gârda-de-Sus in the Apuseni Mountains (Transylvania).

VISION

Sustainable use of our natural resources is one of the big challenges of our time and will become increasingly important. This challenge is inextricably linked to local livelihoods and to economic viability, without which the use of natural resources and ultimately nature conservation cannot be managed in a sustainable way. We hope that the project 'Conservation of Southeast European Medicinal Plants: *Arnica montana* in Romania' will be a model project for the entire region and beyond. Close co-operation of all people and groups directly and indirectly linked to the project will, however, be required to make full use of its great.

GOALS OF THE PROJECT

The main goal of the project is to develop a model for the sustainable production of and trade in *Arnica montana* in Gârda-de-Sus resulting in benefits to both biodiversity and livelihoods.

The project will seek to extract principles and lessons from its work, that can be applied to the conservation of *Arnica* at other sites, as well as other species of medicinal plants and their habitats.

To achieve these goals, the project team will work with the community of Gârda-de-Sus in developing and establishing a community-based *Arnica* management including all local stakeholders. As one of the key elements of the project, a Resource Management and Trade Association (RMTA) will be established at Gârda-de-Sus. The mechanisms and procedures to set up the RMTA will be developed by the local stakeholders, in particular farmers, collectors and people with key functions in the village, in co-operation with the project team from Cluj and WWF-DCP, Romania Office. Before any research is carried out, the suggested topics of research will be discussed with the local stakeholders and modified, if need be. Ultimately, the project aims at developing an effective management system for *Arnica*, that promotes sustainable sourcing and trade and results in higher revenues for both farmers and collectors and at establishing a profitable community-based resource management, which continues working effectively after the end of the project. The *Arnica* management will have to be included in the management system of the Apuseni Mountains Nature Park administration.

First contacts with the park authorities have already been established.

PROJECT COMPONENTS

The development of fair and considerate ecological and social management systems is equally challenging and essential for the success of the project. Based on experiences from a previous project and preliminary scientific data on Arnica distribution, growth and reproduction in the area, key components for successful project implementation have been identified:

- Training and capacity building
- Development of a local Resource Management and Trade Association (RMTA)
- Development and construction of Arnica drying facilities
- Research on Arnica ecology, trade chain, socio-economic context and drying methods

All project components will be implemented in parallel as they are interdependent. Regular evaluation of successes, threats, challenges and lessons learnt will enhance targeted and effective project development and implementation.

TRAINING AND CAPACITY BUILDING

Training is a process of mutual learning and teaching. The members of the project team will closely work together with farmers (land-owners) and collectors (mostly children and elderly women) and train them in basic scientific and technical knowledge of Arnica ecology, postharvest treatment of Arnica flowers and possibilities of sustainable resource management; the local farmers and collectors will teach the project team their traditional knowledge with regard to Arnica growth, flowering patterns and meadow management. Together, project team and farmers / collectors will then be able to work out monitoring methods and a local management plan for the sustainable use of Arnica meadows. In a second step, the people who work in the RMTA will be trained in order to train others (capacity building). In addition, the capacity of young scientists from USAMV and UBB will be built in communitybased and interdisciplinary approaches to conservation and in technical and scientific skills.

DEVELOPMENT OF A LOCAL RESOURCE MANAGEMENT AND TRADE ASSOCIATION (RMTA)

Successfully establishing a local RMTA will be a key milestone of the project. Plans include the development of such an association together with interested local farmers / families, who express interest in the sustainable use of Arnica on the meadows of their village. Important tasks of the RMTA will be the development and implementation of a local Arnica management plan,

the setting of annual harvest quotas and developing a detailed concept for value-added products (e.g. local drying facility/ies of Arnica flowers), negotiate with traders

and, if need be, between farmers and collectors. The RMTA will also have to agree on mandatory rules with regard to membership. It is important that the RMTA be developed and set up through a fully participatory process and that the administration of the regional nature park takes part in this process. Eventually, company partnerships may be developed between the association and traders and / or herbal companies.

DEVELOPMENT AND CONSTRUCTION OF ARNICA DRYING FACILITIES

Local drying facilities for Arnica flowers are an important component of the concept, as quality dried Arnica flower is a processed and refined product that can be sold at considerably higher prices as compared to fresh Arnica. The project seeks to add value to Arnica by building adequate drying facilities close to collection sites. Methods and scale of drying are matters of discussion.

Experimental drying in a demonstration drying facility is planned for the first field season for to convince collectors / farmers of the usefulness of the method and ease setting up more solid drying facilities during the second year.

RESEARCH ON ARNICA ECOLOGY, TRADE CHAIN, SOCIO-ECONOMIC CONTEXT AND DRYING METHOD

Research is, together with traditional knowledge, an important cornerstone in the development of a resource sustainability concept. Several research items have been suggested:

- Ecological sustainability of Arnica and link to farm management and tenure rights
- Socio-economic context and community attitudes at Gârda-de-Sus
- Analysis of the trade-chain for Arnica flowers from Gârda-de-Sus
- Analysis and development of adequate drying and storage methods for Arnica flowers.

These research items will be suggested by the project team to local stakeholders and interested people; these items may be modified and adjusted according to the current actual needs. It is planned that, within the research topics, two masters thesis be written by students from Cluj. The topics will be conceptually developed together with all project partners and the students' local academic supervisors.

ABSTRACT

The purpose of the project is to develop a model for the sustainable production and trade of Arnica montana, in Gârda de Sus commune, Apuseni

Mountains (Romania), resulting in benefits for biodiversity and livelihoods.

The principles of which can be used to inform the development of conservation approaches and methodologies for other endangered medicinal and aromatic plants and their habitats. This model can be tested on other species and will have conservation benefits for habitats, extending beyond benefits for the targeted species.

Ecological management and human management are equally challenging and essential for the success of the project. Based on experiences from a previous project and preliminary scientific data on arnica distribution, growth and reproduction in the area, key components for successful project implementation have been identified: research on arnica ecology, trade chain, socio-economic context and drying methods; training and capacity building; development of a local resource management and trade association; development and construction of arnica drying facilities.

REFERENCES

1. LANGE D., 2003 - The Role of East and Southeast Europe in the Medicinal and Aromatic Plant Trade.- In: Kathe, W., Honnef, S., & Heym, A.: Medicinal and Aromatic Plants in Albania, Bosnia-Herzegovina, Bulgaria, Croatia and Romania, *BfN-Skripten*, 91: 64-77; Bonn and Vilm.

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