# Strategy of the management of natural resources in the Czech rural areas in the concept of sustainable development

## *Strategie hospodaření s přírodními zdroji na českém venkově v rámci trvale udržitelného rozvoje*

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**Abstract:** Management of natural resources in the context of sustainable development can be defined as the economic management of natural resources to allow their perpetual and undiminished supply. At the same time, use of the local natural resources should contribute to the economic and social development of the local community. It is vitally important to emphasize the role of local participation and knowledge. Experience, understanding, and expertise need to be assessed to help to determine the most effective roles for local individuals within the sustainable natural resource project. This assessment and its implications for the economy, community and protection of natural resources at the state, regional and local levels are a subject for case study.

**Key words**: management of natural resources, participants, knowledge, natural resources, local and regional development

**Abstrakt:** Management trvale udržitelných zdrojů je možné definovat jako řízení ekonomického využití přírodních zdrojů tak, aby v tomto procesu nebyly redukovány a vyčerpány. Zároveň jejich využití by mělo přispět k rozvoji občanské společnosti a lokální a regionální schopnosti rozvoje. K splnění těchto předpokladů se stále častěji zdůrazňuje význam aktérů a jejich znalostí. Identifikace rolí aktérů v konkrétním projektu je velmi důležitá pro určení jejich kompetencí v procesu využití přírodních zdrojů v trvale udržitelném rozvoji. Stanovení dynamik různých forem znalostí a jejich funkcí ve vztahu k ekonomice a společnosti je součástí případové studie.

**Klíčová slova:** management trvale udržitelných zdrojů, aktéři, znalosti, přírodní zdroje, lokální a regionální rozvoj

The project CORASON (A cognitive approach to rural sustainable development – the dynamics of expert and lay knowledge) has been brought to completion in the context of the Sixth Framework Program of the EU by prof. Věra Majerová and her colleagues from the Department of Humanities at the Czech University of Life Sciences in Prague. Under the leadership of its Irish coordinator, 14 research teams from 11 European countries were involved (Sweden, Hungary, Spain, Poland, Italy, Greece, Portugal, Great Britain, Norway, Germany, Czech Republic). The main emphasis of the project was to analyze sustainable rural development by focusing on three main themes: economic, social and environmental. Because these three areas are impacted by human factors, the research subjects were analyzed for their knowledge of sustainable rural development at different levels: state, regional and local. Each of the 12 countries reported on the issues from their own point of view and these national reports were finally combined into 9 comparative reports.

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Shorter version of this article was published in the Collection of Papers of the international scientific conference Agrarian Prospectives XV; ISBN 80-213-1531-8.

Supported by the Sixth Framework Program of EU, contract No. CIT-CT-2004-506049; more information: www.corason.hu

## POLICY OF MANAGEMENT OF NATURAL RESOURCES IN CR

The European Union's 5th Plan of Action for Environment and Sustainable Development and the Agenda 21 comprise the framework for the environmental policy of the Czech Republic. They state the principles of sustainable development based on balancing economic, environmental and social aspects of development.

As a part of the local Agenda 21, the Strategic Plan interconnects economic and social aspects with environmental issues and is being created in cooperation with the public. The first attempts to implement the Agenda 21 date to the years 1997 and 1998, when it was adopted by some non-governmental non-profit organizations and local authorities. At the same time, the Ministry of Environment started to systematically support the Agenda 21, for the most part through the Czech Institute of Ecology. In 1999, the main concepts of the Agenda were included in the official governmental measures. Currently, the local Agenda 21 is one of the goals of the State Environmental Policy (for 2004–2010). Support of the local Agenda 21 is also anchored in the State Program of Environmental Education and from December 2004, it is a part of the Strategy of Sustainable Development of the Czech Republic.

The Strategy of Sustainable Development should be an important reference for strategic decision making and is also intended to be a long-term framework for political decisions connected with international commitments, which the CR has made or will make in connection with its membership in the United Nations (UN), the Organization for Economic Cooperation and Development (OECD) and in the European Union (EU), while respecting specific conditions and the needs of the Czech Republic.

Strategic sub-goals and instruments of the Strategy of Sustainable Development of the CR are designed to limit the imbalance in the reciprocal relations of economic, environmental and social pillars of sustainability. They should ensure the highest possible quality of life for the contemporary generation and create prerequisites for quality life of future generations (with an awareness of the fact that the idea of what a quality life is can differ substantially in the future).

Draft of the Strategy of Sustainable Development of the CR was created as a result of a wide discussion. Not only the government but also all partners and interest groups in public and private sphere are concerned with the implementation of the Strategy and the realization of sustainable development. The goal of the creators of the Strategy was to prepare a document acceptable for the whole society, respecting of which would increase the quality of life of the Czech citizens and strengthen the democratic political system in the CR.

In its policy statement for the years 2002 to 2006, the government states the principles of sustainable development and environmental protection as its priorities and pledges to advocate the policy of sustainable development as a whole. The involvement of citizens in administration of public matters is emphasized and is regarded as both motivation and inspiration, which helps to increase work productivity by enabling the people to take part in innovations, and becomes a factor increasing their self-confidence (Hudečková, Lošťák 2002).

Active engagement of all key groups and the general public is one of the basic principles of sustainable development. Engagement of the public on a national level is ensured by legislative measures as well as by the so-called "soft instruments" such as referendum, local referendum, the institution of ombudsman, and comments from the public on new economic legislative measures, systems of grants, etc.

Public engagement on creation of concepts and plants and on decision making in the CR in general is currently ensured only insufficiently through some provisions in the building law, some environmental and landscape protection regulations and the laws of access to information. Only the new building law and the amendment of the law of assessment of environmental impacts will change these processes so that they will be in concordance with the EU guidelines and will enable the public not only to criticize the local, regional and national concepts but also to take part in their creation. The following measures have been suggested:

– to strengthen the role of non-governmental non-profit organizations – the partners for sustainable development;
– to ensure technical, organizational and economic conditions for public access to information about the living environment (public information centers, informational system of the department, issuing yearbooks, environmental reports, publications, seminars, references on the internet) and for its active use for participation on the activities and decision making of the public administration;
– to ensure the engagement of municipalities and public in decisions about the use of mineral resources in their area.

### National policy context analysis

Regional planning in the Czech Republic is carried out on the local, regional and national levels. The strategy and policy statements are anchored in the Strategy

of Regional Development and can be divided into strategy and policy statements on state and regional levels and those required by the European Union as a prerequisite for the use of pre-accession resources for new members and the EU Structural Funds.

The creators of strategic and programme documents bore in mind that if the documents are to ensure the balanced development of all areas of life in the region, the principles of sustainable development have to be followed. Full implementation of the concept of sustainable development is understood as harmonization of economic and social development with environment protection. In practice, this means that particularly in those sectors which have the most negative impact on living environment, the criterion of environmental acceptability must be fully respected from the very beginning.

Before these strategic and programme documents were created (before 2000), the concept of sustainable development was a phenomenon unknown to the public as well as to the main social groups in the CR. A signal from the political representation was missing that would

Table 1. System of strategy and policy documents

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|---|---|---|
| *Local level* | **Development Strategy of Micro-regions** | States common developmental priorities for a group of municipalities. Helps to concentrate resources and efforts for joint activities. |
| *Regional level* | **Development Strategy of Regions** | Basic strategic document stating the focus of development of the region for a certain period. |
| | **Development Programme of Region** | Tactical document, which specifies strategic goals and developmental activities in the form of particular measures and projects, determines their bearers and the way of financing and implementation. |
| *National level* | **Long-term Concepts** | Basic long-term concepts, which establish the orientation of development of different spheres of national economy. |
| | **Strategic Programme of Social and Economic Development of the CR** | Basic strategic document on economic development for a particular period of time. |
| | **Strategy of Regional Development of the CR** | Basic strategic document on regional development support for a particular period of time. |
| | **Regional Development Plan** | Mid-term document postulating the attitude of the state toward support of regional development and determining the focus of support in one or several regions. |
| | **Sectional Policies** | Mid-term documents, which specify the attitude of the state, toward development of individual sectors and their branches. |
| | **Sector developmental policy** | Tactical document determining developmental goals and developmental activities of a particular sector in the form of measures and projects. This document has not been constituted yet. |
| *European Union* | **National Development Plan** | The principle document for negotiations for support from the EU Structural Funds. |
| | **Community Support Framework** | Based on the Regional Development Policy, it is the principal document defining conditions for rendering support from the EU Structural Funds. |
| | **Operation Programmes** | Tactical documents created on the ministry level working with problems of national character, which will be financed or co-financed from the EU resources. The Czech Republic has four Operation Programs ready: Industry and Enterprise, Human Resources Development, Infrastructure, Rural Development and Multifunctional Agriculture. |
| | **Joint Regional Operation Programme** | The Joint Regional Operation Programme (JROP) contains the development priorities of seven cohesion regions eligible for support under Objective 1. The JROP is based on a joint development strategy with the regional differences being reflected by different financial weights to priorities and measures in the individual regions. |

Source: www.mmr.cz

make it clear that sustainable development should be a priority and a political goal. The public was used to seeing the effective protection of the environment rather as a contrast to economic development and even now understands these two interests as conflicting ones. Lack of information was and still is a great problem on all levels of sustainable development.

The strategy of Sustainable Development of the CR was adopted in November 2004 (www.mmr.cz) and it is a crucial document. It should become a consensual framework for further concepts and should be an important basis for strategic decision making within individual departments as well as for inter-departmental cooperation and for cooperation with different interest groups. Its basic role is to alert to existing and potential problems which could jeopardize the transition of the CR to sustainable development, and initiate measures which would help to prevent these problems, or at least soften their impact and to as effectively as possible cope with the consequences.

As well as Goodland (1995) defines social, economic and environmental sustainability, the Strategy defines three reciprocally interconnected goals as the basis of sustainability:

1. **Social development respecting everyone's needs – social pillar.** Problems of the social pillar are fully dependent not only on the development of economy but in the long-time horizon also on the state of the environment (state of health of the inhabitants, space to rest and spend free time in, tourism, employment).
2. **Effective protection of living environment and environmentally friendly use of natural resources – environmental pillar.** The principal chal-

**System of strategic and policy documents for suport of regional development**

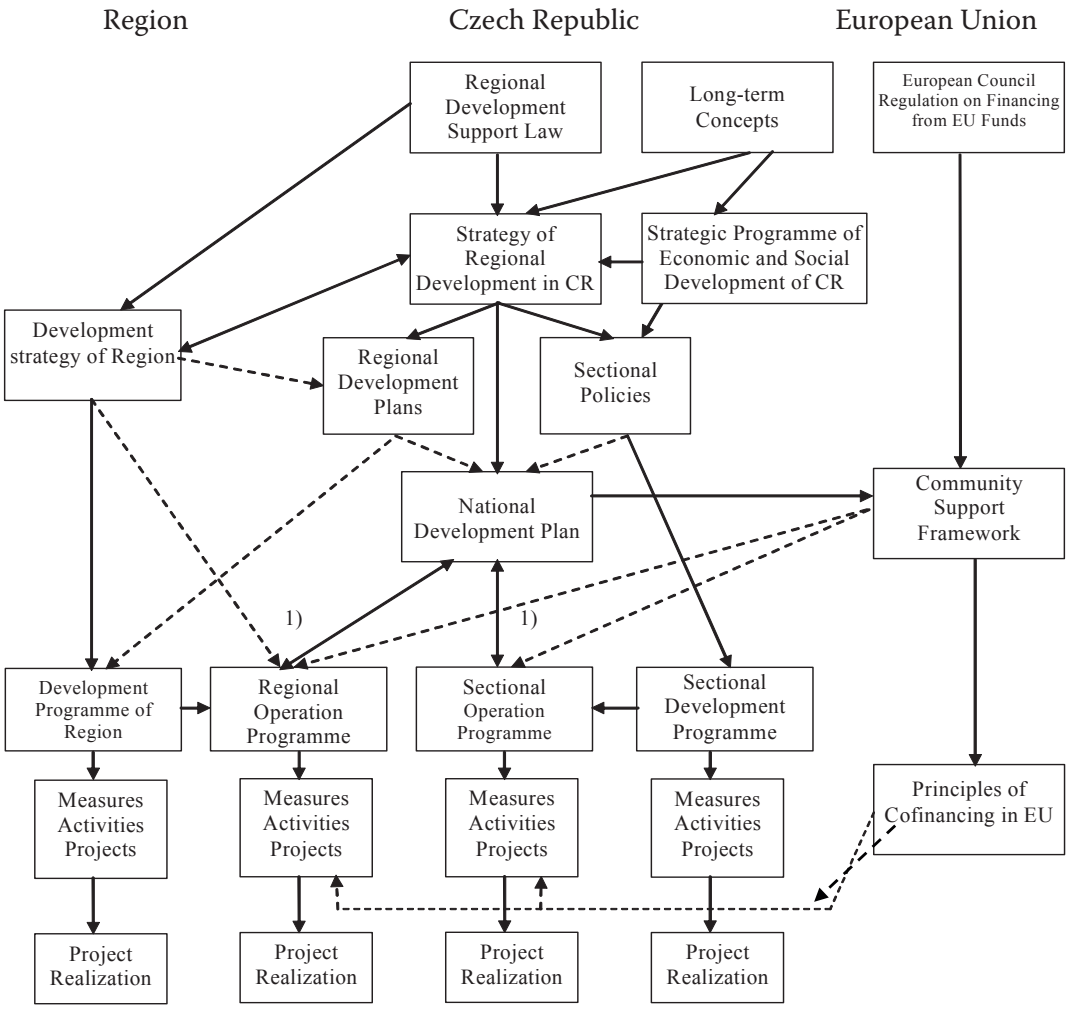


Figure 1. Individual strategic and program documents are interconnected with each other

1) Branch financially supported by the EU

Source: Strategy of Regional Development (Ministry of Regional Development)

lenges of the environmental pillar are to consider requirements of the current population as well as those of future generations and their impacts on the whole ecosystem, to provide sufficient quality of all components of the environment, ecosystems, and of their mutual relationships, to minimize conflict of interest between environmental protection and economic development, to contribute to resolution of global environmental problems (protection of the climate and protection of biodiversity) and social problems (employment, health care). Development of ***management of natural resources*** and gradual increase of ecologic stability of the landscape and of its ecologic functions in the CR can be considered as activities positively leading to sustainable development of the environment.

3. **Maintenance of high and stable level of economic growth and of employment – economic pillar.** The emphasis laid on quantitative aspects of growth regardless of its social and environmental quality is a negative factor from the view of sustainable development.

Concerning the use of renewable resources, the Strategy states the following: Within the bounds of possibility, it is necessary to minimize the material and energetic requirements in production and services, to minimize the inputs of non-renewable resources and to use renewable resources as much as possible. Another goal is to minimize the conflict of interest between economic activities and environmental protection, and gradually to reach the division of economic growth from the growth of negative impacts on the environment. Along with this goal, the government will ensure (to the extent given by the available instruments) fulfilling of the following sub-goals:

– In the area of **production and use of energies,** to systematically increase effectiveness, to use effective forms of energy saving, and to guarantee a suitable ratio of use of primary energy resources with the emphasis on the renewable ones.
– In the area of **industrial production,** everywhere where it is economically feasible, to systematically decrease consumption of primary raw materials and to replace it with the use of secondary raw materials and sorted waste materials instead. To support closed production and consumption cycles, development and application of low-emission, low-waste and less energy demanding technologies and all economic activities with low material input and high added value with the objective to systematically increase their share of economic production. To support production of environmentally friendly products and recyclable wastes.
– In the area of **handling of wastes**, to fulfill the quantity demands, especially to limit the amount of new wastes, their dangerous properties, and to guarantee maximal material and energetic use of wastes. By 2010, 50% of municipal wastes should be re-processed.

The principal goal in the area of environmental protection is to improve the quality of life of the citizens, to ensure environmentally friendly handling of natural resources and energies, to preserve and to renew diversity of species and ecologic stability, to make decisions with regard to nature and landscape, and to take on part of the global responsibility for the state of the living environment on our planet.

## Description of the natural regional resources

Economic, social, and environmental factors are all significant considerations in the efficient utilization of natural resources within the close proximity to their place of origin (www.kraj-jihocesky.cz).

The area chosen for the case study – the South Bohemian Region – is not rich with raw materials and has almost no sources of energetic raw materials. Stone, graphite, gravel sand, sand, glass sand and brick clay are quarried. Peat and, in some localities, limestone are other important natural resources. South from České Budějovice, raw material used for ceramics is quarried. Although this region does not have many mineral sources, its natural wealth consists of the following resource base:

**1. Great percentage of woods**

Huge tracts of coniferous woods constitute an important part of the natural wealth, located predominantly in the Šumava and in the Novohradské Mountains. Spruce growth makes up 55% and pine 31%. In this context, the use of biomass as a sustainable source of energy is considered to be very significant. Specific emissions of main pollutants from the stationary sources are the lowest in the Czech Republic. In the framework of sustainable use of natural resources, it is necessary to strengthen the ecological stability of woods and of its extra-production functions.

**2. Beautiful landscape with high natural diversity**

Numerous places of natural interest including caves, nature trails and cycle paths, and the greatest percentage of protected area in the CR are there. One of three national parks in the Czech Republic is in this locality: the National Park Šumava, Biospheric Reserves Třeboňsko and Šumava, ranked within the world natural

heritage of the UNESCO, the Boubín and Žofín prime forest – the oldest natural reserve in Europe.

**3. Wealth of surface and subterranean waters**

Attention is focused on water quality protection and abundance of subterranean and surface waters. Thanks to mineral water springs, there are several spas in the region. More than 220 small water plants (19.7 MW) function in the region. In the past, over 7 000 fish ponds had been built, their total area today covers over 30 000 ha. There are several great water reservoirs – the dam Lipno (the largest water surface in the CR with the area of 4 877 ha), the Orlík, (the dam itself is located in the Central Bohemia region), the dam Husinec on the river Blanice, the dam Římov on the river Malše. Recently the water reservoir Hněvkovice was built for the needs of the nuclear power plant Temelín. The water reservoir Římov on the river Malše is the main source of drinking water in the area.

There are brown soils with low nutrient abundance and many wet and peat areas. On comparatively large areas, there are undeveloped soils with high percentages of stones and granite. Therefore, this region is not very suitable for intensive farming. There is approximately the same amount of agricultural land as of non-agricultural, which greatly influences the character of the landscape. 37% of the area is covered by forests, which is quite a high number compared to other regions. The proportion of forest covered area increases toward the border with Austria on the south.

## CASE STUDY

### Svatý Ján nad Malší

The municipality Svatý Ján na Malší (http://svatyjan.elsanet.cz) has been chosen as the subject of the case study. This municipality lays south-west from the regional center České Budějovice and 30 km east from the important cultural center Český Krumlov. The municipality has 300 inhabitants and is comprised of 4 parts: Chlum nad Malší, Sedlec, Hrachovy Hory, Pod Horou. 50 private entrepreneurs are registered here.

In 1997, the municipality began to be interested in the use of an alternative energy source – the biomass. This renewable source of energy is used for heating. Here, waste from woodworking (sawdust, wood shavings, bark) as well as special solid fuels (splinters, wood pellets, wood briquettes) are defined by the term biomass. In this municipality, wood splinters are used.

The idea of heating by biomass was introduced to the mayor of the municipality by the ecological organization ROSA. This organization then intermediated cooperation between the municipality and the association Růže (www.sdruzeniruze.cz), which invited the municipality to enter a pilot project: the ecological reconstruction of heating. The project managers needed a village where heating of several small isolated buildings from one source could be tested. The boilers used for heating in the school, the town hall and the pub in Svatý Ján were in a critical state. There is no gas supply in the village and the village owns 174 ha woods, so this situation was a perfect solution for the problem. After consulting experts and considering the experience of the partner municipality Eschenau, the municipal council decided to enter the project.

In October 1997, the first boiler with 190 kW capacity was installed in the local elementary school. At the same time the school, the town hall and the pub were interconnected by insulated piping. The municipality bought a tractor and a splinter-making machine for fuel making. In 2002, a second 490 kWboiler was installed and other buildings were connected to it. A fuel storage facility was built in the municipality.

The goal was to connect all the houses in the municipality to this kind of heating. This intention was gradually put into practice with the use of grant funds because the municipality did not possess enough sufficient financial resources for the whole project. In the next stage, more houses would be connected to the source and the existing piping would be interconnected. In case one of the boilers was out of order, it would be possible to supply all the buildings from the other one.

With the growing number of bio-boiler rooms, there soon will not be enough wood-waste. From the report of the Czech association for biomass CZ BIOM[1] from 2003, it is clear that almost half of the

[1] **Czech Association for Biomass – CZ BIOM** engages in development of the biomass-energy industry in the Czech Republic. It is a non-governmental non-profit organization uniting most professionals, entrepreneurs and activists focused on the use of biomass as energy source. CZ BIOM is connected in its activities to the European association AEBIOM. CZ BIOM publishes (for its members) the magazine BIOM, organizes seminars and educational events, puts great effort in introducing the ideas of sustainable development into everyday life and into Czech legislature and in making background for new and forgotten technologies in biomass-energy industry. CZ BIOM strives to provide unbiased information about the possibilities of biomass-energy industry to the agricultural and lay public. At the moment, however, most of the public knows very little about this area of energy industry, therefore, further advertising campaigns are needed.

amount of biomass needed for fueling of the existing bio-boilers to 2010 will have to be acquired by growing it. Therefore, the municipality plans to invest in a field of fast-growing woody plants, which would be used for producing biomass.

The advantages of using biomass do not only lie in the fact that it is a new energy source. The growing of biomass has broader consequences such as contributing to the reduction of the greenhouse effect, saving of fossil fuels, improving the green landscape, enabling effective use of the land, and, last but not least, the creation of new jobs (www.env.cz).

The program is also very favorable because it enables the agricultural production of products other than food. Plants used for energy production can be grown on agricultural land which is not used for food or fodder production. This land covers almost 1 million ha in the CR.

The biomass used for energy production at the moment is for the most part waste or by-products of other production processes. Therefore, if biomass is used instead of classical fuels, the negative impacts on the environment are decreased. Biomass is also easier to access, especially in the areas with a less developed infrastructure, and it is cheaper than classical fuels.

Renewable resources in South Bohemia, as well as in the whole CR, are underutilized (only 1.5 to 2% of all energy used). Burning of biomass, especially of wood waste, is the most common way of using renewable resources. Only a few municipalities use biomass for central heating of buildings. Examples of those which use it are: Trhové Sviny, Kardašova Řečice, Nová Pec, Deštné, Staré Město pod Landštejnem.

The Czech Republic produces relatively high amounts of $CO_2$ every year (Petříková 2005). The goal of the CR is to keep the production of greenhouse gases 8% lower than in 1990 till 2008–2012. A more extensive use of renewable energy sources as well as energy conservation should lead to a lower production of greenhouse gasses. Heating by biomass saves 55 000 tons of brown coal yearly.

**The Czech-Austrian School of Rural Renewal** with the seat in Svatý Ján nad Malší has contributed extensively to spreading information about the use of alternative energy sources (http://skolaobnovy.elsanet.cz). The director of the School is the deputy mayor of Ján nad Malší, Antonín Michal. The School was founded as a center for cooperation of self-governing Czech, Slovak and Austrian municipalities in the framework of the Programme of Countryside Renewal.[2] The goal of the school is to organize reciprocal exchanges of experience in the form of seminars and hosting professionals. The principal activities are seminars for the representatives of the self governing units and for the activists of the Countryside Renewal Programme from the Czech Republic, Austria and Germany. The School also organizes excursions to selected municipalities in Germany and Austria for Czech representatives and vice versa. They have also organized a workshop and a seminar about the use of alternative energy sources, and the culture and utilization of quick-growing woody plants. The objective of this seminar was to draw the interest of the municipal representatives to the use of renewable energy sources. The participants could see the reconstructed school in Svatý Ján nad Malší, where the wood chip boiler had been installed and the representatives of several municipalities became interested in following the example of Svatý Ján nad Malší, to build such a boiler room in their municipality for heating public buildings or apartment houses.

7 out of 18 municipalities in the micro-region Pomalší are supplied with gas and can use it for heating. Some buildings in Svatý Ján nad Malší are heated by biomass. In other municipalities classical fuels are used for heating – solid fuels, and to a smaller extent also electricity or other fuels. Due to the rising prices of gas and electricity, we can assume that they will become less popular as fuels for heating. As the non-traditional renewable energy sources (biomass, heat pumps, solar and wind energy) are still neglected today, this could mean a return to using coal as a fuel. This would not be a positive solution in view of its negative environmental impact.

As stated above, the idea of using biomass for heating was brought up by the members of the local ecological organization ROSA (www.zelenabrana.cz). ROSA – South-Bohemian Society for Environmental Protection is an organization of common benefit with a regional sphere of action. It was founded in 1991 as a regional information center and its principal function is to contribute to the protection of nature and the environment and to promote and support sustainable development. The organization is active in the preventive care for environment in rural and urban areas, as well as support and development of communication among local and

[2] **Countryside Renewal Program** is run by the Ministry for Regional Development as a part of regional policy. The program supports development of private entrepreneurship in rural regions, renovation of villages, and landscape maintenance. From 1994, realization of the goals of the Program in individual municipalities is covered from the state budget. The project of heating by biomass in Svatý Ján nad Malší was also financed through this program.

Table 2. Actors and used knowledge in the South Bohemia Region

| Actor | Knowledge form | Activity which prompts sustainable development |
|---|---|---|
| Regional administration and local government | Managerial, political, traditional/local | Strong cooperation with NGOs (national and local) |
| Renewal Countryside School | Traditional/local, expert | Transformation of useful information and experiences of other villages in sustainable development |
| Ecological association ROSA | Traditional/local, expert | Transformation of useful information |
| Růže – Association of villages | Expert, managerial | Association is a rich source of useful information |
| Society for Renewal Countryside | Expert, managerial | Association is a rich source of information and its Programme can be also a money source for projects |
| Universities (regional and non regional) | Scientific | There is close cooperation based on the gathering of empirical data and providing expert studies |

national administrations, the research sector, the public andentrepreneurial interests. It promotes development of local communities and supports them in solving problems. The experience of the organization clearly shows that the implementation of the principles of sustainable development is only effective if it is done on the local level in cooperation with local partners.

We have identified key actors – Table 2.

## CONCLUSIONS

Based on the Case Study, we can conclude that this case of heating by biomass as we have described it, has had a positive impact on local activities as well as on the maintenance of the natural resource base.

Considering local activities, the project, beside its main purpose, serves as a model for other actors in neighboring municipalities and regions which have a similar resource base and conditions for introduction of heating by biomass. The Austrian municipality Eschenau played the role of a model when the leaders of the municipality Svatý Ján nad Malší were deciding about the project. Now, Svatý Ján nad Malší itself has a similar function in the South Bohemia region. They spread information and share their experiences, and this function has been enhanced by the existence of the Czech-Austrian-German School of Countryside Renewal. The deputy mayor runs the School, and the mayor and members of the local council are involved in its activities.

At the beginning, it was supposed that the realization of the project would create at least one new job. At present, one worker is employed as an attendant of the heating appliance. The municipality is, however, thinking about installing an automat, and then no employee would be needed. Another possibility of creating new jobs was to cultivate quick growing woody plants that would be used for fuel. However, this is a seasonal work. Moreover, the municipality owns enough forests and therefore it is not necessary to cultivate more fuel. A trial area of 0.5 ha of quick growing poplar was planted, so the municipality keeps this possibility in mind for the future and the experience gained at the trial field will be used. To sum up, the project has had no impact on employment in the municipality but that aspect was not its main goal.

Although the project would probably be perceived even more positively by the inhabitants if it brought new jobs into the municipality, the inhabitants welcome heating by biomass because it is cheaper than heating by other fuels.

The project is significant for maintenance of the natural resource base in the sense that wood is a renewable resource and combustion does not produce air pollutants in comparison to fossil fuels. Utilization of this renewable heating fuel will reduce environmental disruption and prevent degradation of the "natural capital".

As mentioned above, the inhabitants primarily see the economic advantages of the project. Even the local leaders – the mayor, deputy mayor and the members of the local council primarily considered the financial aspects when making their decisions. The environmental impacts were not the most important factor. On the other hand, the interest in use of renewable resources and environmental protection were of principal importance for the members of the ecological organization ROSA, who first came up with the idea of heating by biomass. We can conclude that both these interests were considered in realization of the project and that the project fulfilled the expectations of both sides.

Indirectly, the project has a positive influence on rural civic society also in the sense that, thanks to the

Czech-Austrian-German School of Rural Renewal, people from outside come to the municipality for excursions and to get information about the project. At the same time, these people bring new information and experience into the village. New contacts are made, which can be used in the future for realization of further projects connected with sustainable management of rural resources.

From the existing project, the following demands can be identified, which should be considered when managing natural resources:

1. To enable the municipalities to manage and use the mineral resources in their territory
2. To strengthen the position of non-governmental non-profit organizations engaged in sustainable development
3. To provide technological, organizational and economic background for access of the public to information on the environment, and for its active use for participation in conceptual activities.

Keeping the public informed about the environment, about factors disrupting it, and about the possibilities of reducing these negative factors are considered to be very important preconditions for the correct management of rural resources. We presume that if the public has enough information about the given circumstances, it will not only see the economic aspects of its behavior, but also will gradually become interested in how to use natural resources without damaging nature.

In the future, the regional strategy of sustainable management of natural resources should provide:

– Help to assess natural resources in the region and to evaluate different alternatives of their sustainable use.
– Development plans and investment programs and should enable their adequate implementation, monitoring and evaluation.
– Decentralization of participants' approach, which is often more effective but is dependent on straightforwardness of local structures.

Decentralization and transfer of the authority to the lowest levels (in our case to the members of local council) are usually considered to be more effective methods of leadership. Based on this fact, we presume that the local leaders (representatives of municipalities or micro regions) should in the future take over the sustainable management of resources. These leaders have managerial skills and local political knowledge, however, they often lack the expert knowledge. Therefore, cooperation with organizations whose members have this knowledge will continue to be necessary.

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Arrived on 18th December 2006



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