

# ZEMĚDĚLSKÁ/VENKOVSKÁ BROWNFIELDS V KRAJI VYSOČINA

## AGRICULTURAL/RURAL BROWNFIELDS IN THE VYSOCINA REGION

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### **Abstract**

*After 1989 Czechoslovak economics was transformed into free market economy and brought many changes into agricultural sector. One of the changes was fall of volume of agricultural production which caused that many of objects used in agriculture lost their function and weren't needed any more. Here begins origin of agricultural/rural brownfields. There was no interest in this problem for a long period, bigger attention to brownfields started in context of the Czech Republic's entrance into EU and with possibility to draw finances for brownfields' regeneration from structural funds of EU. This article deals with the problematic of agricultural/rural brownfields in the Vysocina Region since there were located 44 brownfields of this type and it is important to set up a strategy to solve this problem.*

### **1 Introduction**

The origin and existence of brownfields is a manifestation of economic and social changes which are reflected in the development of urban and rural areas. The main reason for emergence of brownfields in the Czech Republic are changes which affected our economics in past seventeen years, in particular diversion from heavy industry, collapse of big enterprises, cancel of military domains, restructuring... Until this time the problem of brownfields in the CR hasn't exit while in western countries has been this problem taken in since late 70's.

Reasons of origination and existence of brownfields in the CR are simple: during the period 1949-1989 lacked interest in this problem, there wasn't any political willingness to address the problem, involved entities – public and private – were passive, there was insufficiency of resources and needed legislation. Bigger attention to brownfields started in context of the Czech Republic's entrance into EU and with possibility to draw finances for brownfields' regeneration from structural funds of EU (Sýkorová, 2007).

Brownfield is an English term which is used as terminus technicus. In anglo-saxon countries, brown colour was used to mark localities in plans of former industrial areas which lost their function. The definition of brownfield in the Czech Republic is not clear. According to Investment and Business Development Agency, Czechinvest, the term brownfield means real estate/property (plot, facility, area), which is not effectively used, is neglected or even contaminated; cannot be used effectively without prior regeneration process; arises as a remnant of industrial, agricultural, residential or other activities. Brownfields represent for us an economic source, business activity and opportunity that have to be used. Brownfields are also as historical traces, sources of the national memory, cultural and architectural heritage which should be preserved and reconstructed. Another definition could be like this: brownfields are underdeveloped or previously developed properties that may be contaminated. They are usually, but not exclusively, former industrial or commercial properties that may be underutilized, derelict or vacant (Ontario, Ministry of Finances, 2007).

Virtually, in each town and city in the Czech Republic, there is a number of localities that were or are built-upon, that were used in the past and are now abandoned, are dilapidating, occupy space and hinder development. Their appearance and presence often annoys the inhabitants living in their vicinity. Investors lose interest in such areas and the development is blocked for years ahead. On the other hand, some of these locations represent interesting or unique examples of industrial heritage.

### 1.1 Overview of literature

In present there is number of foreign literature which deals with the issue of economy and environment and is closely connected with the topic of brownfields, e.g. M. Singer (2000). There are also some works which applies to legal aspects of development of brownfields, M. A. Wolf (1999) or T. Beatley a K. Manning (1997), which is about relation of economy and ecology. Problems of brownfields are also connected with sustainability – D. A. Brown (1996).

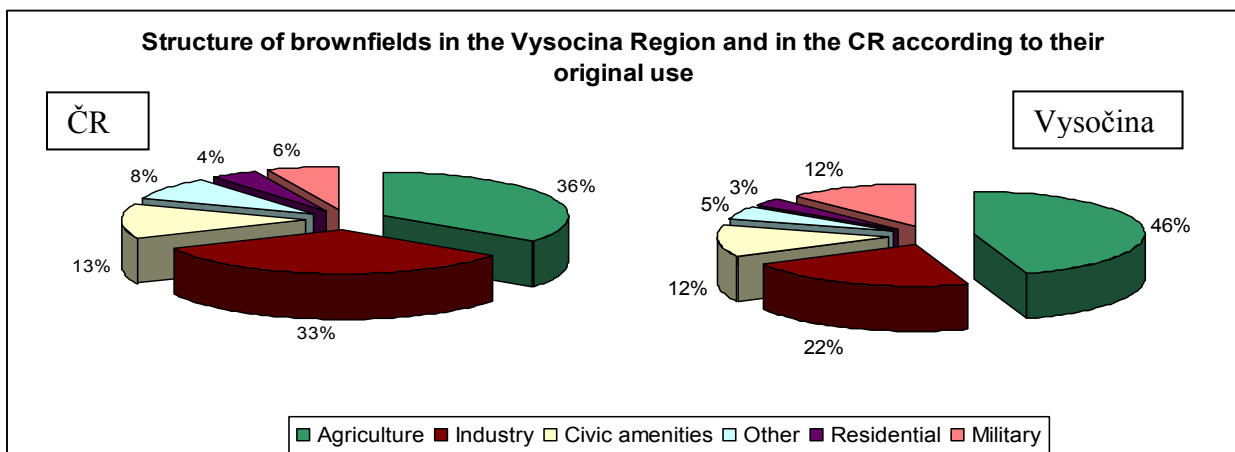
On the Czech research field there are also some articles dealing with brownfields. The most of them are about opportunities and threats of brownfields for development of a city – I. Sýkorová (2007). Perspectives of further use of brownfields are solved by A. Nový (2004). Preparation of regeneration projects are outlined in J. Horáková, B. Vojvodíková, J. Česelský (2004). Next author of studies about brownfields in the ČR is J. B. Jackson from Institute of Sustainable Development of Seats (IURS). Investment and Business Development Agency, Czechinvest, engages in problems of brownfields too, Search Study for Localization of Brownfields in the Territory of the Czech Republic (2006) located almost all brownfields in the CR and created conditions for revitalisation of brownfields. There are also high-quality diploma theses concerning the brownfields topic – J. Holeček (2006) or M. Hlušková (2006).

To just a matter of rural/agricultural brownfields there is devoted inadequate attention even if it is a big theme. In literature they are mentioned only marginally, e.g. P. Dvořáková, P. Dlouhý (2006), J. B. Jackson (2003) etc.

## 2 Brownfields in the Czech Republic and in the Vysocina Region

Brownfields are usually located in industrial zones in cities or along railroad lines in suburbs or rural communities. According to Czechinvest’s Study for Localization of Brownfields in the Territory of the Czech Republic (2006) totally 3 096 localities have been found in the Czech Republic, with a total area of 11 060 ha and built-upon area covering 2 261 ha. Although sooner were brownfields perceived mainly as a result of transition of Czech economy in industrial sector, the Study has indicated that the most brownfields (35 %) were formerly used in agricultural sector. Industrial localities make 33 % of total number of brownfields in the CR. Other brownfields in the CR may be classified as civic amenities (13 %), military (6 %), residential (4 %) and other (8 %).

When we study area of brownfields, according to previous use, the largest area in the CR is covered by industrial brownfields (42 % of total brownfields’ area), then military (23 %) and agricultural brownfields (17 %).



**Fig. 1** Structure of brownfields in the CR and the Vysocina Region according to their original use (Source: Regional Agency for Development of the Vysocina Region, [www.rrav.cz](http://www.rrav.cz) + own calculations)

In the Vysocina Region there have been located 98 brownfields with total built-upon area covering 36,9 ha (some objects were not exactly measured and so the real area is a bit larger). The biggest number of brownfields in the Vysocina Region as well as in the whole CR were used in agriculture (46 %), 22 % is made by industrial brownfields, the other types makes smaller part – civic amenities 12 %, military 12 %, residential 3 % and other 5 % (Fig. 1)

### **2.1 Agricultural/rural brownfields in the Vysocina Region**

After 1989 Czechoslovak economics was transformed into free market economy and brought many changes into agricultural sector. One of the changes was fall of volume of agricultural production. This caused that many of objects used in agriculture lost their function and weren't needed any more.

Agricultural/rural brownfields are large-scale areas formerly used agriculture (e.g. barns, granaries, storehouses, mill houses, cowsheds, calf houses, piggeries, ...) which are underutilized or abandoned and are typical for rural and peripheral regions. They also have very low investment potential, are mostly contaminated and are not immediately exploitable. According to Cabernet classification (in Jackson, 2003), it is possible to differentiate three types of brownfields – A, B and C. Criterion of categorization is amount of finances which are required for possible revitalisation of the object. Absolute majority of agricultural brownfields belong to the C category – these brownfields are quite without chance to revitalisation. They are often out of contemporary commercial, social, industrial or cultural development trends and are located in localities without adequate demand so it is unreasonable to cover the costs gap. Also brownfields with serious ecological burden belong to this category because the revitalisation would be very expensive.

In the Vysocina Region there has been located 44 objects which could be considered as agricultural/rural brownfield. This number could not be taken as final because it is not possible to decide what is or is not a brownfields without clear definition.

**Tab. 1** Number of agricultural/rural brownfields in the Vysocina Region and their area (*Regional Agency for Development of the Vysočina Region, www.rrav.cz + own calculations*)

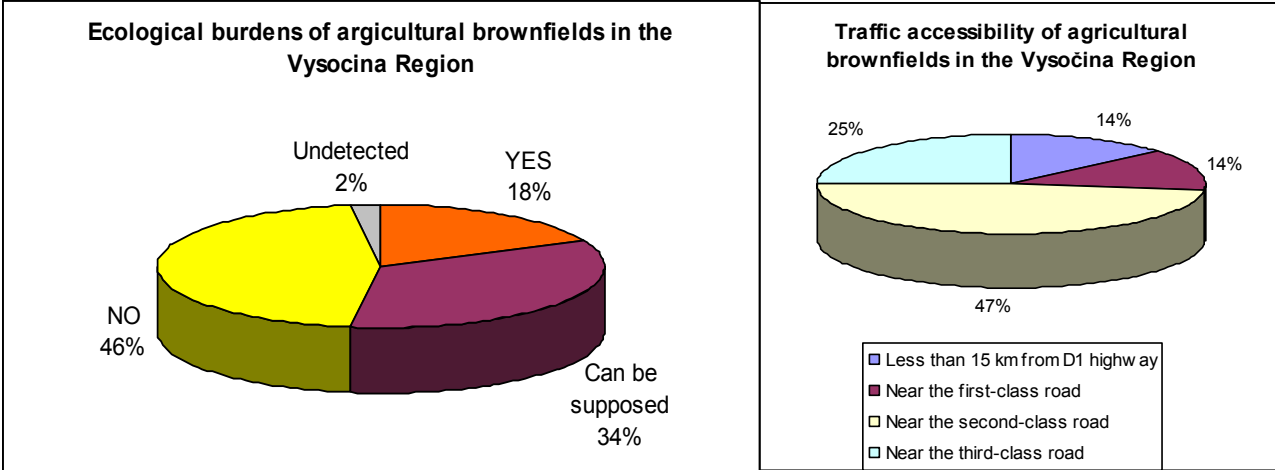
Area in sq. m	Number of objects		Total area in sq. m	
	Abs.	Rel. in %	Abs.	Rel. in %
1-499	3	6,8	752	0,8
500-999	14	31,8	10832	11,5
1 000-1 999	8	18,2	10598	11,3
2 000-4 999	9	20,5	23475	25,0
5 000-9 999	3	6,8	21514	22,9
> 10 000	2	4,5	26833	28,5
Undetected	5	11,4	---	---
Totally	44	100,0	94004	100,0

In the Vysocina Region, brownfields with total area of 500-900 sq. m have the main share (14 objects, 31,8 %), the lowest number of brownfields have area larger than 10 000 sq. m (only 2 objects, 6,8 %). Five objects were not exactly measured out because they were in demolition or there was no access to the private estate.

Agricultural/rural brownfields compared with brownfields in urban or core areas have some disadvantages: inconvenient location, poor condition of objects, unwillingness of investors to put their finances into not very perspective objects and unsuitable age structure of local inhabitants – potential employees as well as users of revitalised brownfields.

The extent of risk to the public posed by environmental contamination of agricultural/rural brownfields – in the Vysocina Region, 18 % of agro-brownfields carry any environmental

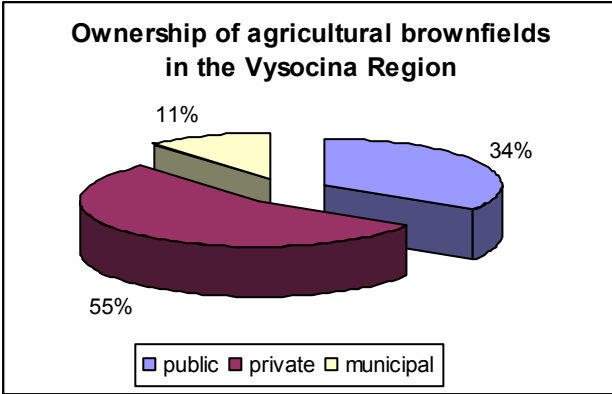
load and by 34 % is supposed to be so (Fig. 2). This ecological burden comes from the original function of the object – e.g. slurry, dung-water or other material was stored here. Depending upon the amount and type of contamination, soil may be removed, a concrete or other impermeable layer placed on top of the land, and restrictions placed on future use of the land. Costs for revitalisation and re-use of these objects would be many times higher than renovation of uncontaminated objects or building on the greenfields which are generally believed, sometimes incorrectly, not to be contaminated. Brownfields strongly contrast with greenfields, which are fields and lots that were never developed, or only lightly developed.



**Fig. 2** Barriers of development of the agricultural/rural brownfields in the Vysocina Region – ecological burdens and traffic accessibility  
 (Source: Regional Agency for Development of the Vysocina Region, www.rrav.cz)

Since transport is a factor which forms shape of urban and economic structures, poor traffic accessibility could be as well reason which makes revitalisation of brownfields difficult (Fig. 2, Fig. 6). In the Vysocina Region, on the whole 72 % of agricultural/rural brownfields are accessible only on the second- or third-class roads, often of very poor condition. Only 14 % of brownfields are less than 15 kilometres far from the D1 high-way, which could be a convenient factor to their revitalisation.

Solution of the brownfields’ problems is worsen by fragmented and mixed structure of brownfields’ land-owners. In the Vysocina Region, 55 % of these brownfields are owned privately (often several private owners), 34 % are owned public, that means Land Office of the Czech Republic, region or community, 11 % of objects are owned both by private and public owner.



**Fig. 3** Ownership of agro-brownfields in the Vysocina  
 (Source: RRAV + own calculations)

**2.2 Possibilities of revitalisation of agricultural/rural brownfields**

Revitalisation of agricultural/rural brownfields is a problematical issue and quantity of brownfields in cities and rural areas could grow. This problem hadn’t been solved in the Czech Republic until 1989; there was no political will and private subjects remained passive for a long time. According to Ministry of the Environment of the Czech Republic the main barriers of re-use of these brownfields are:

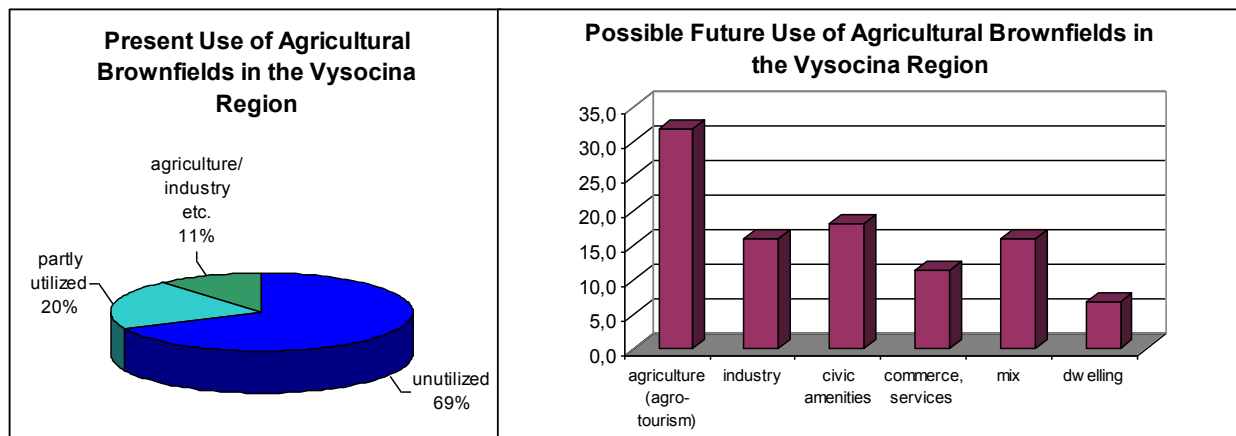
- non-transparent and complicated ownership of brownfields' estate
- strong competition with greenfields - building up here is easier, faster and cheaper
- risk of possible ecological burden and higher costs for revitalization
- lack of experience with brownfields' problematic and its solution
- public-private partnership used insufficiently
- lack of investment incentives for private investors
- absence of development conception and planning documentation

Even if there are several disadvantages for brownfields, Ministry of Environment of the CR also brings out some benefits of re-utilizing of brownfields:

- revitalization of landscape
- elimination of contamination
- elimination of aesthetical flaws
- protection of inhabitants' and environment's health
- business brisk up and growth of incomes

Nowadays there are 69 % of agricultural/rural brownfields in the Vysocina Region unutilized and 20 % of them utilized partially. Only 11 % of objects are used in agriculture or industry. However utilizing of these buildings could be dangerous because of the poor condition of objects or ecological burden.

According to Regional Agency for Development of the Vysocina Region (RRAV) the future use of agricultural/rural brownfields is possible. The main share of objects (over 31 %) should be re-used in agriculture or agro-tourism again. More than 18 % of objects should be use as civic amenities, the other brownfields should be re-utilized in industry (15 %), commerce and services (11 %) or dwelling (7 %); (Fig. 4).



**Fig. 4** Present and possible future use of agricultural/rural brownfields in the Vysocina Region  
(Source: Regional Agency for Development of the Vysocina Region (RRAV) + own calculations)

It is possible to resolve issues of agricultural/rural brownfields by using EU funds (through the State Agricultural Intervention Fund or Ministry of Agriculture of the Czech Republic). Let's recapitulate previous development phases (according to SZIF, 2006; adjusted):

**a) Pre-accession programme – SAPARD (Special Accession Programme for Agriculture and Rural Development)**

Period to draw: 2000-2006 (acceptance of applications 2002-2003)

SAPARD was aimed to contribute to the introduction of European Communities rights in the area of the Common agricultural policy (CAP) and to settle priorities and specific problems connected with permanently sustainable changes in the agricultural sector and in rural areas + the possibility to master demanding EU structural funds regulation and programming principles. Annual financial resources/EU support was 540 million CZK for the agricultural sector and 270 million CZK for the rural-development sector. As of November 24, 2005 there were 1,567 projects paid in the amount of CZK 3 592 166 384 (of which CZK 2 948 033 530 from EU resources).

For brownfields revitalisation there was mainly used measure called „Development and diversification of economic activities, ensuring diversity of activities and alternative sources of income“, which could mean structural conversion of former agricultural objects to another use, eg. business services, industry, thus creating new jobs.

In the Vysocina Region there were financed 152 projects from SAPARD (9 of them in competence of Ministry of Regional Development of the CR) until September 30, 2004. Total amount of finances spent for these projects was CZK 301 165 864. There were several projects concerning old buildings revitalisation, as an example: “Reconstruction and use of complex of historical buildings in Luka upon Jihlava” for CZK 22 039 540; “Reconstruction of Hoffmann house in Brtnice” for CZK 12 173 542 (more in Analýza změn..., 2005).

## **b) Operational Programme Rural Development and Multifunctional Agriculture**

Period, acceptance of applications: 2004-2006

The main aim was to ensure the permanent sustainability of rural development, support for agricultural basic production and processing of agricultural products. As opposed to the SAPARD programme, support for forest and water resources management is included here. This was financed from European Agricultural Guidance and Guarantee Fund (EAGGF – Guidance Section) and Financial Instrument for Fisheries Guidance (FIFG). Total allocation of financial resources was EUR 250,613,971. As of November 1, 2006 1,323 projects had been paid for in the amount of CZK 1,974,925,861 (of which CZK 1,350,642,695 from EU resources).

Sub-provisions suitable for resolution of brownfield issues:

- Investment in agricultural assets/agricultural enterprises
- Improved processing of agricultural products and their marketing
- Rural development (sub-measures of the LEADER+ type)
- Diversification of agricultural activities and activities related to agriculture

Support recipients were natural persons and legal entities or persons registered as self-employed in agriculture, whose income is derived from agricultural basic production.

For period 2007-2013 there is a new programme which will support agriculture, forestry and mainly development of rural areas:

## **c) Rural Development Programme**

Aim is development of rural areas in the CR on the basis of permanently sustainable development, improvement of the condition of the natural environment and reduction of the negative impacts of intensive farming; creation of conditions for the competitiveness of the CR in basic food commodities and support for expansion and diversification of economic activities in rural areas with the goal of developing business, creating new jobs, reducing the rural unemployment rate and strengthening the cohesiveness of the rural population. This will be financed from European Agricultural Fund for Rural Development (EAFRD), which has four axis:

- I. Improving the competitiveness of the agricultural and forestry sector
- II. Improving the environment and the countryside

### III. The quality of life in rural areas and diversification of the rural economy

#### IV. Leader

Financial resources (public support): CZK 3 billion/year (axis I), CZK 2.3 billion/year (axis III) and CZK 640 million/year (axis IV). It is necessary to precede emergence of brownfields in the rural regions by measures which are suitable for resolution of brownfield issues:

- I.1.1. Modernization of agricultural enterprises (\*)
- I.1.3. Adding value to agricultural and food products
- I.3.2. Commencement of activities of young farmers
- III.1.1. Diversification of activities of a non-agricultural character
- III.1.2. Support for establishment of enterprises and their development
- III.1.3. Support for the travel industry
- III.2.1. Basic services for the rural economy and population (\*\*)
- III.2.2. Protection and development of rural areas

\* I.1.1. – Aim is improved competitiveness of agriculture with focus on support for modernization of agricultural enterprises where there is not a sufficient level of investment.  
Supported areas: CR, with the exception of Prague

Eligible costs: e.g. investments in agricultural structures (renovation and construction of new building – use of brownfields given priority). Eligible costs for one project amount to CZK 100 000 up to CZK 30 million, the maximum of contributions amount is 40-60 %.

\*\* III.2.1.1 – Aim is management of basic infrastructure in small towns, use of renewable sources of fuel and energy, waste management, construction and refurbishment of local roads on a small scale, support for improved attractiveness of villages.

Supported areas: municipalities in the Czech Republic with up to 2 000 residents

Eligible costs: e.g. structural renewal (renovation, modernization, static security) of buildings, land tracts (brownfields up to 2 ha), possibly new construction

Form and amount of support: max. 50 % for entrepreneurs, 90 % for NGOs and companies with more than 50 % ownership of municipalities, 100 % for municipalities, state organizations and enterprises, water-resource administrators.

Except EAFRD, investors can use finances from other instruments of regional policy, such as operational programmes during the 2007-2013 period. Let's compare these instruments with the old ones:

**Tab. 2** Programmes applicable for brownfields revitalisation in the CR in 2007-13

<b>Former programme (2004-2006)</b>	<b>Present programme (2007-2013)</b>
OP Rural Development and Multi-functional Agriculture (E, MA)	<b>Rural Development Programme (E, MA)</b>
Programme of renewal of the country (N, MoRD)	<b>Rural Development Programme (E, MA)</b>
Leader+, Leader ČR (E, N, MA, MoRD)	<b>Rural Development Programme (E, MA)</b>
Regional programmes (N, MoRD)	<b>Regional programmes (N, MoRD)</b>
Joint Regional Operational Programme (E)	<b>Regional Operational Programmes for NUTS II (E, MoRD)</b>
OP Infrastructure (E)	<b>OP Environment (E, MoE)</b>
Removal of old ecological burdens (N)	<b>OP Environment (E, MoE)</b>
Various programmes (support for dwelling, tourism...) (N, MoRD)	<b>Integrated OP (N, MoRD)</b>

(Source: Ministry of Environment, [www.mzp.cz](http://www.mzp.cz))

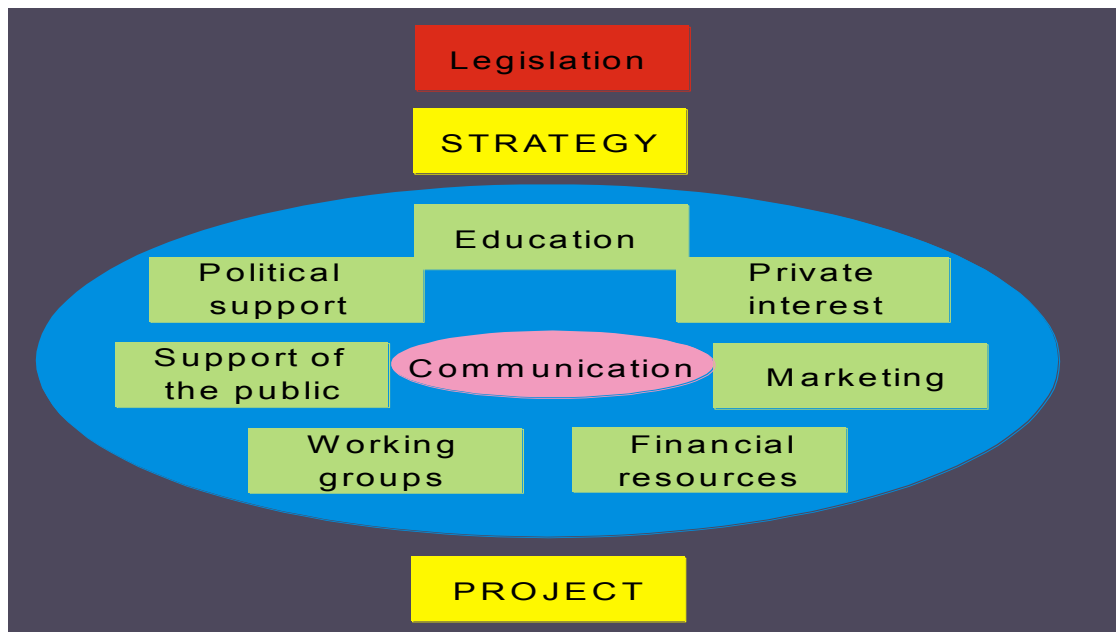
MoRD – Ministry of Regional Development of the CR

MA – Ministry of Agriculture of the CR

MoE – Ministry of Environment of the CR

N – national programme  
E – European programme

Regeneration often resolves many problems, such as removal of environmental loads. Cooperation of landlords, municipalities, region, developers and institutions is necessary (see. fig. 5). In order to successfully regenerate much more damaged areas, it is necessary to gather now all experience from the projects realised in the Czech Republic and abroad, to establish a functioning environment for the implementation of these projects and to ensure sufficient financial funds and their coordination. A general prerequisite of every strategy is the definition of the substance and timing of the problem and setting a plan for its solution.



**Fig. 5** Brownfields Regeneration Strategy  
(Source: adapted according to Czechinvest's Project BFs 3000)

Regeneration or re-use of brownfields complies with the requirements of permanently sustainable development. Recycling of soil increases the offer of development areas, which can become an attractive alternative of "greenfield" development. Regeneration contributes to an economical use of the territory and increases the attractiveness of cities and municipalities for their inhabitants, investors and visitors. In addition to manufacturing activities, brownfields can also be regenerated for housing purposes, civic amenities and can also be returned to their original natural purposes. The development potential of brownfields varies by their location and original use. A major part of regenerations projects cannot do without public aid. Such aid should have a clear nature, which would ensure easier and faster implementation of these projects. ([www.czechinvest.cz](http://www.czechinvest.cz))

### 3 Conclusion

Cultivated landscape is said to be „the mirror of society“. Aim is to prevent traditional cultivated landscape from devastation, mainly in economically poorer regions, which the Vysocina Region surely is.

Despite the high inflow of finances form EU funds to the Vysocina Region, the problem of brownfields is not actually solved due to many obstacles and absence of high-quality projects. Probability of revitalization is also lowered by not very good localization of the brownfields in the region. But it is evident that revitalisation of the brownfields can contribute to total

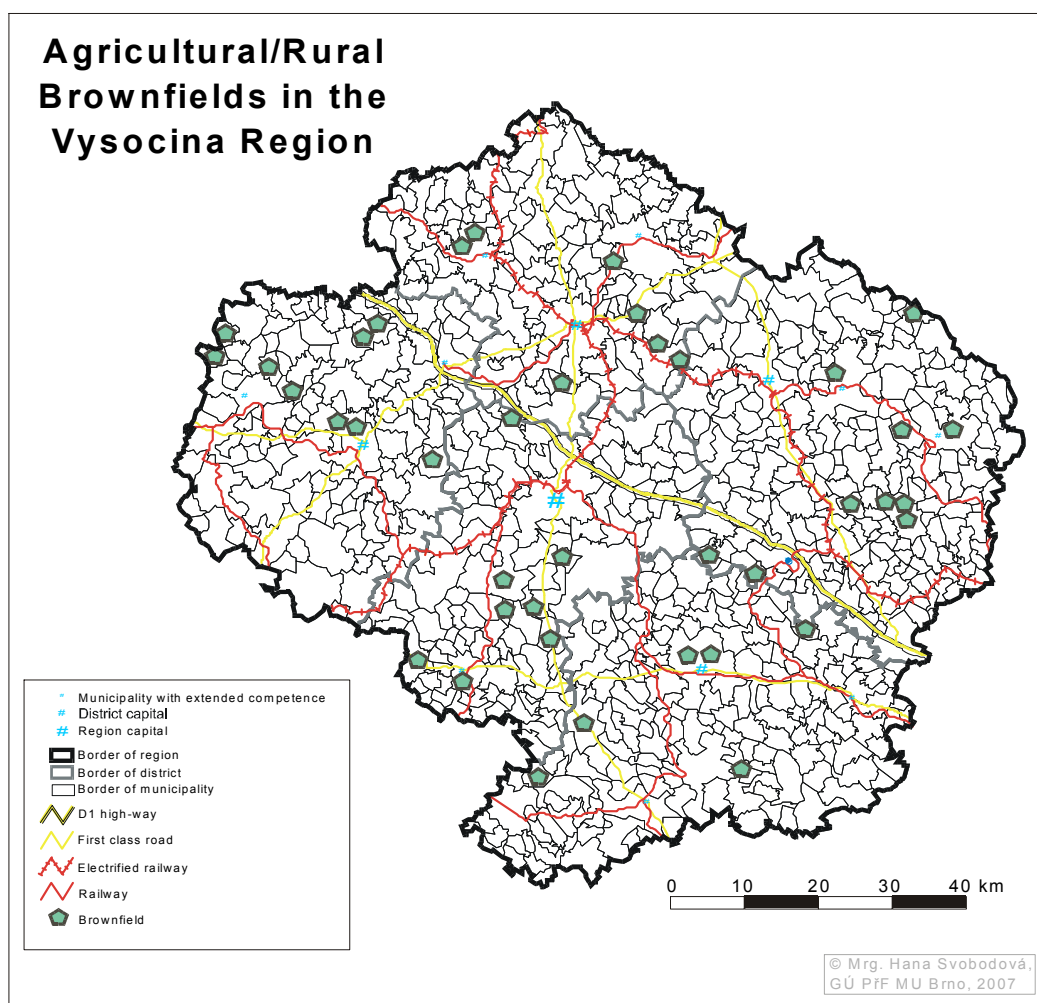


revitalisation of the selected region – removal of ecological burdens and increase aesthetic value of landscape.

**Tab. 3** The positives and the negatives of brownfields' regeneration

+	-
Revitalisation of landscape Removal of ecological and aesthetical defects Protection of inhabitants' health Protection of environment New opportunities for employment Activation of economics Rise of earnings	Ownership relations Strong competition with greenfields Possible ecological burden Lack of experience in revitalisation Bad cooperation of public and private sector Low investment incentives Territorial documentation

Renewal and with the development of economic activities in affected regions help overcome social and economic problems. Building up of a commercial object could help to activate economics in the region, which brings next advantages, such as employment, inflow of finances etc. Brownfield localities offer a significant potential for further development and, despite substantial funds and time required for their preparation, their regeneration has a positive social and economic impact on the relevant region. That's why we should not behold brownfields as a problem but as an opportunity.



**Fig. 6** Spatial distribution of agricultural/rural brownfields in the Vysocina Region, 2007

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