



MASARYK UNIVERSITY  
DEBLIN PRIMARY SCHOOL



THESSALONIKI  
2010

# SUSTAINABILITY IN PRACTICE: educational project, Czech Republic

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Name of the Project

Sustainability in practice

Category

Multi-stakeholder involvement

Theme

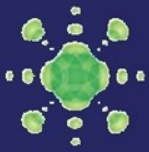
Rural development, environment  
education, project training,  
sustainability and security

Target Group

School children, university students,  
rural community, general public, policy-  
makers, administrators, researchers

Area of Implementation

Rural area in Moravia/Czech Republic  
Deblin primary school



# Project aims

- **The main goal** is empowering the local community

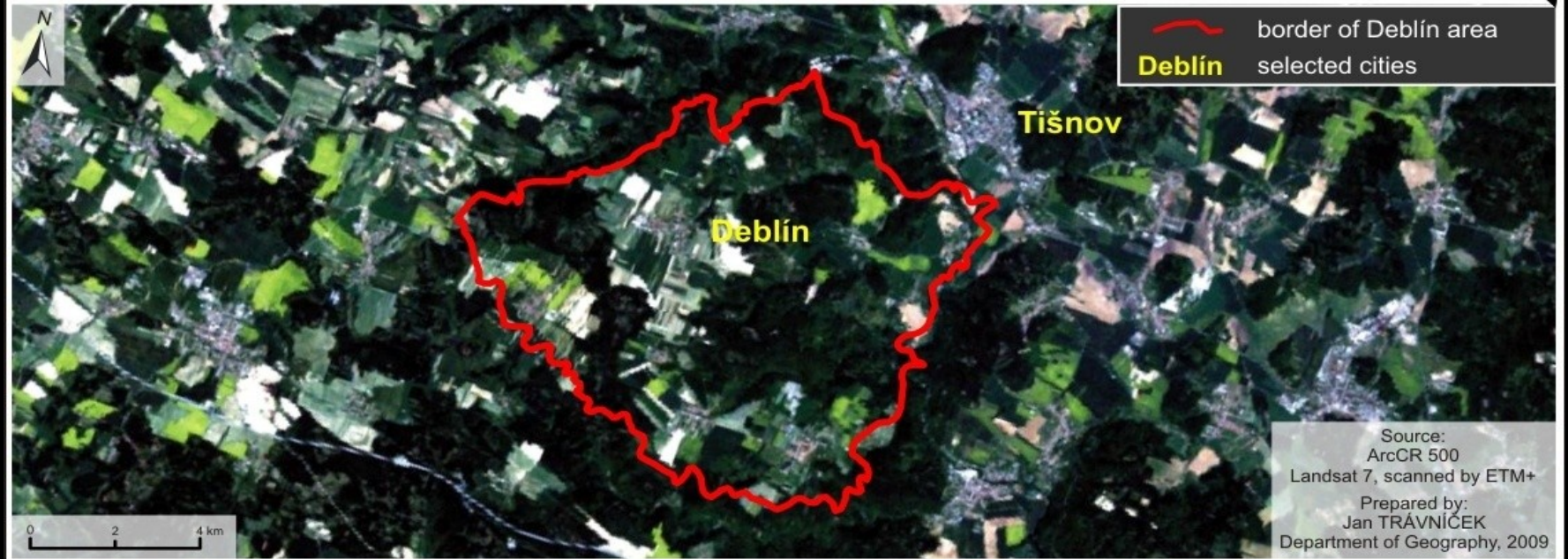
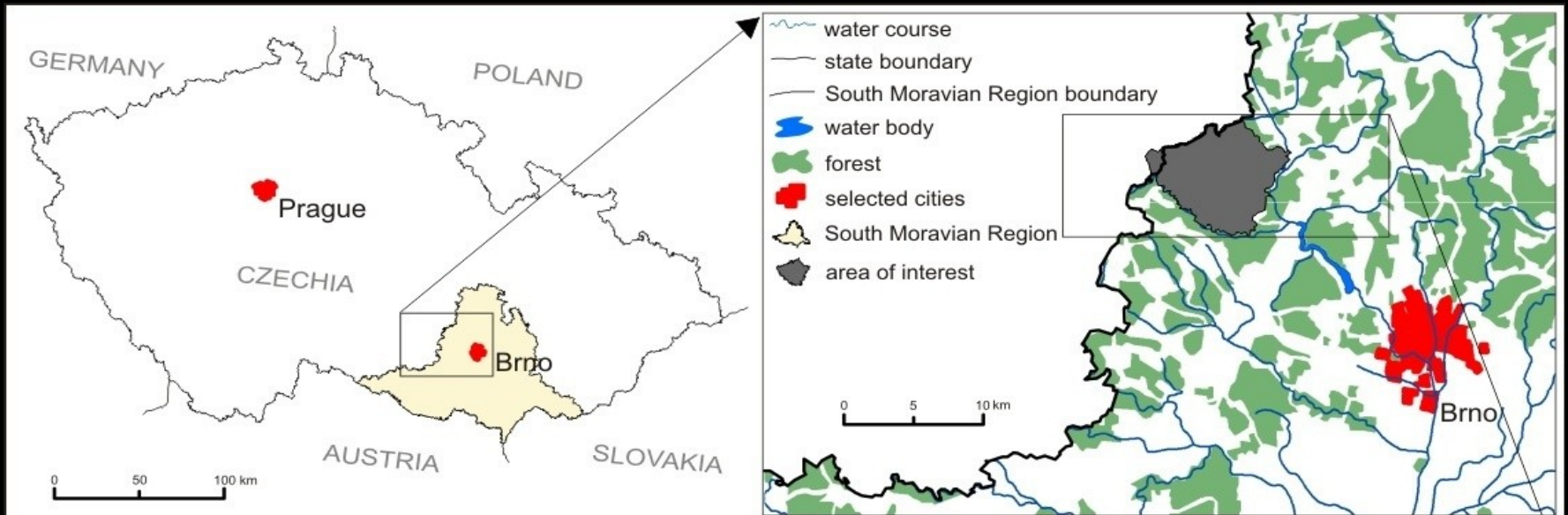
**„pupils/students and schools as mediators“**

- **Other goals:**

- social study of the town (talking to people, observing, participating, ethnography)
- identification of community actors/actants, processes and desires
- knowledge of social actions
- problem solving issues (see further)

**the politics of practising sustainability**

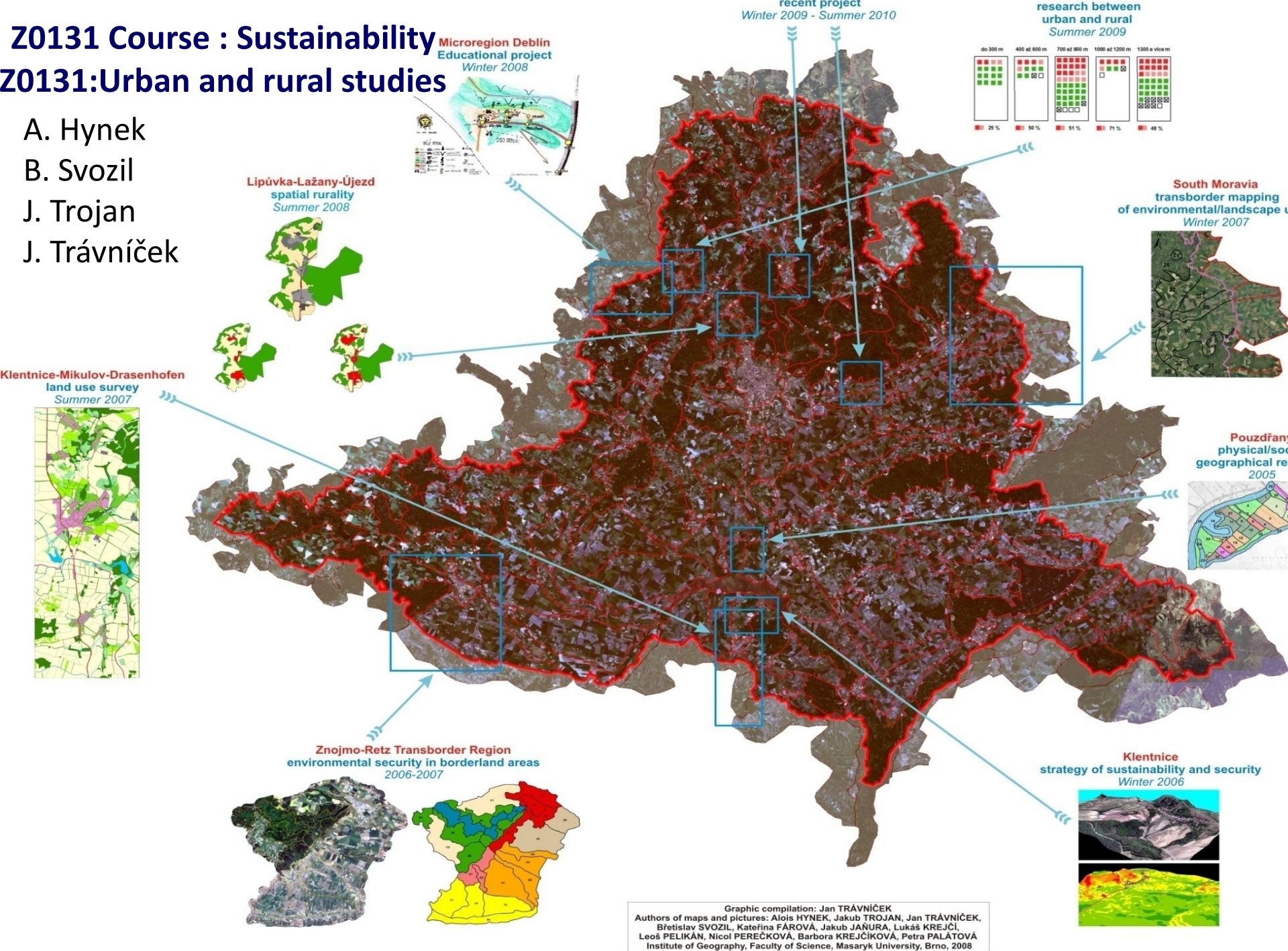
# Location the area



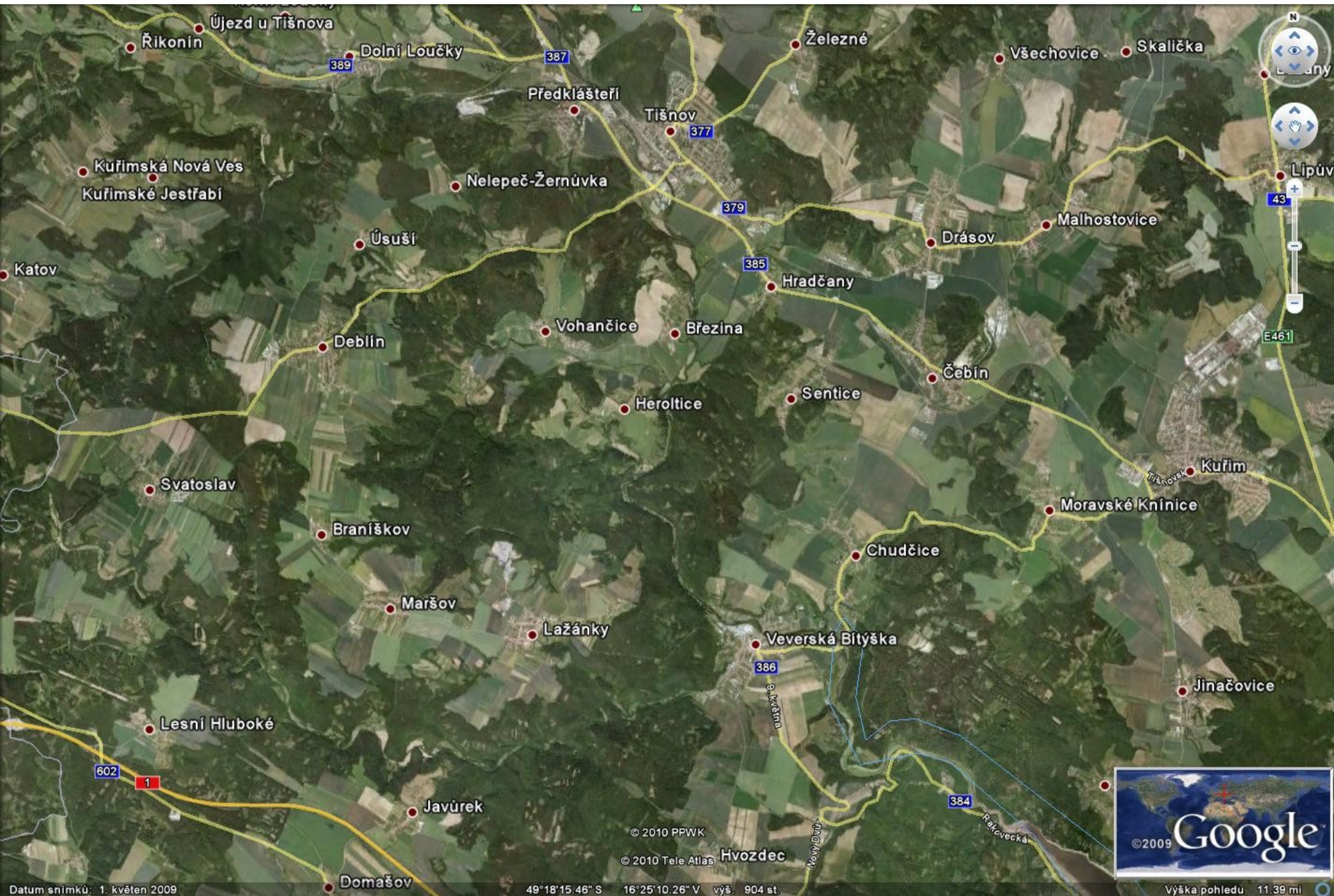
# 20131 Course : Sustainability

## 20131:Urban and rural studies

A. Hynek  
B. Svozil  
J. Trojan  
J. Trávníček







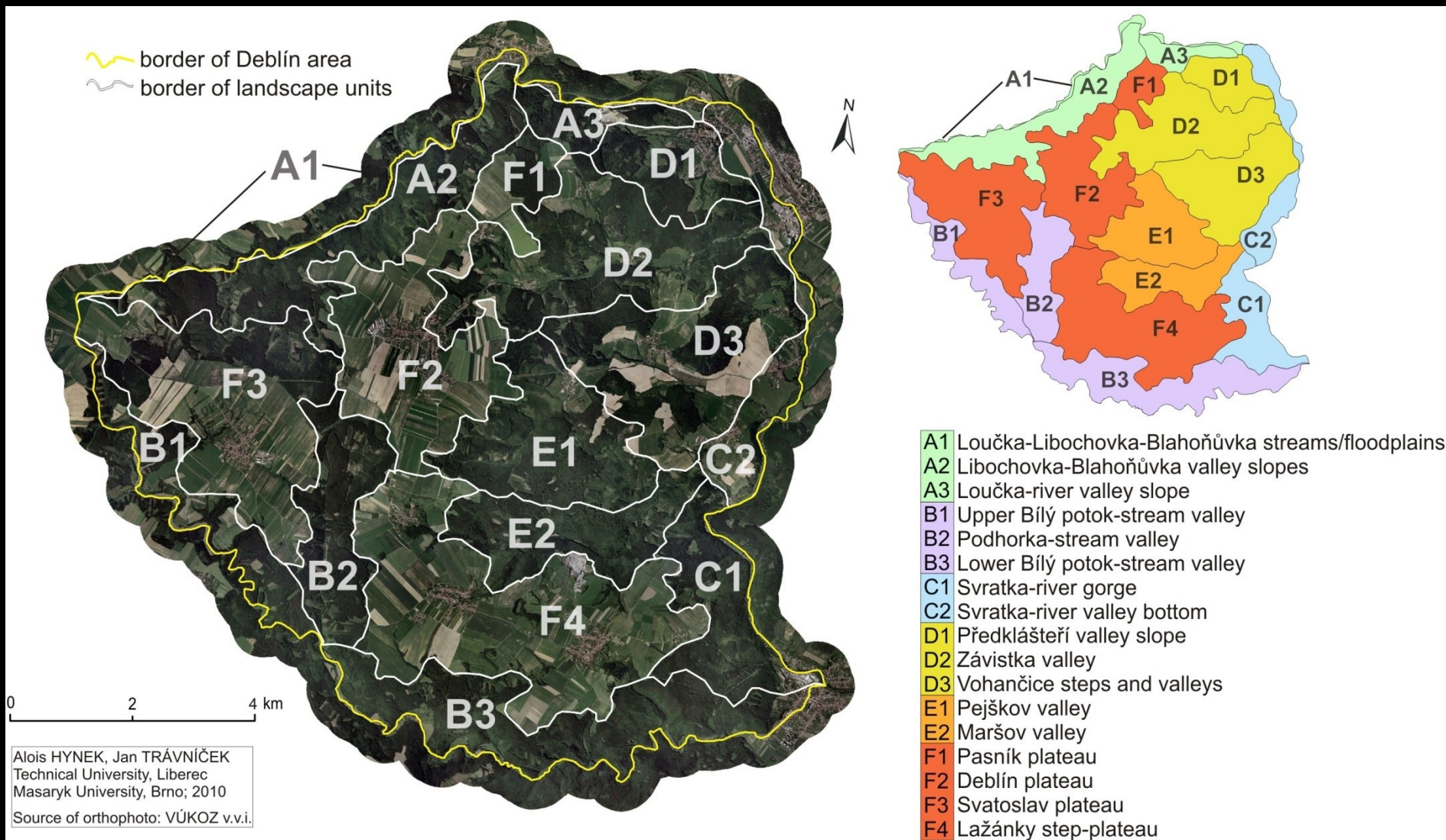
Datum snímku: 1. květen 2009

49°18'15.46" S 16°25'10.26" V výš. 904 st.

Výška pohledu 11.39 mi

# Composite landscape units of Deblín area (part 1)

version for local atlas for pupils in primary school





# Composite landscape units of Deblín area (part 2)

|    | LF | RE                     | TC      | HC              | SC | SC          | PV                          | AV                          | LU image | LU                      |
|----|----|------------------------|---------|-----------------|----|-------------|-----------------------------|-----------------------------|----------|-------------------------|
| A1 |    | f<br>LSG               | ☾<br>*  | D<br>0.3<br>2.1 |    | F<br>G      | Ufc                         | meadows<br>woods<br>ruderal |          | forestry<br>recreation  |
| A2 |    | d<br>GnGrPh            | ☾<br>*  | SR<br>3-5       |    | L<br>C<br>M | Ft-bsakd                    | forests                     |          | forestry<br>recreation  |
| A3 |    | d<br>GnGr              | ☾<br>*  | D<br>1.52       |    | L<br>C<br>M | QF-js<br>FQ-b               | forests<br>ruderal          |          | forestry<br>quarry      |
| B1 |    | d<br>GnPh              | ☾<br>*  | D<br>0.15       |    | L<br>C<br>F | QF-sk<br>FQ-kas             | forests<br>ruderal          |          | forestry<br>agriculture |
| B2 |    | d<br>GnGrPh            | ☾<br>*  | D<br>0.05       |    | L<br>C<br>F | Ft-ikmo<br>FQ-ask           | forests                     |          | forestry                |
| B3 |    | d<br>GnGrPh<br>CoSa    | ☾<br>*  | D<br>0.29       |    | L<br>C<br>F | QF-sbd<br>FQ-ak<br>CQ-cjz   | forests<br>ruderal          |          | forestry<br>recreation  |
| C1 |    | d<br>GnGrCoSa<br>MLo   | ☾<br>*  | D<br>6.63       |    | L<br>C<br>F | QF-skjb                     | forests                     |          | forestry<br>recreation  |
| C2 |    | vf<br>LSG              | £<br>↓  | D<br>7.96       |    | F<br>V<br>G | FQ-s<br>CQ-x<br>QF-j        | agri-segetal<br>ruderal     |          | settlement<br>transport |
| D1 |    | s<br>GnArCoLo          | ↗<br>∅  | SR<br>2-3       |    | M<br>V<br>L | QF-sb<br>Ft-b               | forests<br>ruderal          |          | forestry<br>settlement  |
| D2 |    | dr<br>GnArCo<br>GnMeLo | ☾<br>*  | D<br>0.05       |    | M<br>L<br>E | FQ-skb<br>QF-sa<br>Ft-d     | forests<br>ruderal          |          | rural                   |
| D3 |    | dr<br>GnLiLo<br>MaArCo | ↗<br>∅  | D<br>0.05       |    | M<br>L<br>F | QF-sh<br>FQ-kcb<br>CQ-ca    | forests<br>ruderal          |          | rural                   |
| E1 |    | dr<br>GnApArCo         | ☾<br>*  | D<br>0.05       |    | M<br>L<br>F | QF-ksb<br>Ft-bsd<br>FQ-zcsk | forests<br>ruderal          |          | rural                   |
| E2 |    | dr<br>GnLi             | ☾<br>*  | D<br>0.05       |    | M<br>L<br>F | QF-skabjd<br>Ft-wbd         | forests<br>ruderal          |          | rural<br>quarry         |
| F1 |    | p<br>GrGnPh            | ↕<br>↑↑ | SR<br>2-3       |    | M<br>P<br>L | QF-skb                      | forests<br>agri             |          | rural                   |
| F2 |    | p<br>PhGnDLS           | ↕<br>↑↑ | SR<br>2-3       |    | V<br>P<br>M | FQ-m<br>QF-s<br>Ft-s        | agri<br>ruderal             |          | rural<br>centre         |
| F3 |    | p<br>GnPhQu            | ↕<br>↑↑ | SR<br>2-3       |    | V<br>P<br>M | Ft-hmksio<br>QF-ks          | agri<br>ruderal             |          | rural                   |
| F4 |    | †<br>GnMaDLS<br>CoSa   | ↕<br>↑↑ | SR<br>2-3       |    | V<br>P<br>M | QF-ksdzb<br>Ft-d            | agri<br>ruderal             |          | rural                   |

| Edaphic rows |                | Rocks, earths |              |
|--------------|----------------|---------------|--------------|
| a            | stony          | Ap            | aplite       |
| b            | nutrient       | Ar            | arkose       |
| c            | drying         | Co            | conglomerate |
| d            | colluvial      | D             | deluvium     |
| e            | eubasic        | G             | gravels      |
| h            | loamy          | Gn            | gneiss       |
| i            | compaq         | Gr            | granite      |
| j            | scree          | L             | loams        |
| k            | acid           | Li            | limestone    |
| l            | alluvial       | Lo            | loess        |
| m            | oligobasic     | Mb            | marble       |
| o            | pseudogleyed   | Me            | metabasalt   |
| s            | fresh          | Ml            | marl         |
| t            | tepid          | Ph            | phyllite     |
| w            | fresh calcaric | Qu            | quartzite    |
| x            | erotherm       | S             | sands        |
| z            | stunt          | Sa            | sandstones   |

| Potential forest vegetation tiers |                        | Soils in soil cover |             |
|-----------------------------------|------------------------|---------------------|-------------|
| CQ                                | Carpini querceta       | C                   | colluvisols |
| FQ                                | Fagi querceta          | E                   | rendzinas   |
| QF                                | Querci fageta          | F                   | fluvisols   |
| Ft                                | Fageta typica          | G                   | gleys       |
| Ufc                               | Ulmi fraxineta carpini | L                   | leptosols   |
|                                   |                        | M                   | cambisols   |
|                                   |                        | P                   | pseudogleys |
|                                   |                        | V                   | luvisols    |

| Columns in table |                                    |
|------------------|------------------------------------|
| LF               | landforms                          |
| TC               | topoclimate                        |
| HC               | hydrocycle                         |
| LU               | land use                           |
| SC               | soil dominated                     |
| PV               | potential/reconstructed vegetation |
| AV               | actual vegetation                  |
| RE               | rocks, earths                      |

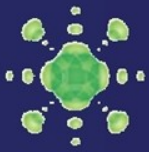
| Landforms |                                       |
|-----------|---------------------------------------|
| f         | floodplains, valley floor             |
| v         | open wide valleys                     |
| s         | steep step-like valley slopes         |
| t         | step-like rolling plateau             |
| d         | deep narrow valleys with steep slopes |
| r         | ravines                               |
| p         | rolling plateau                       |

| Topoclimate (Quitt E., 1987) |   |
|------------------------------|---|
| ↕↑↑                          | high thermal amplitude, airing, vapouring |
| ↗∅                           | moderate sunny slopes, catabatic          |
| ☾*                           | moist, longer snow cover                  |
| £↓                           | inversions in depressions                 |

| Hydrocycle |                  |  |
|------------|------------------|--|
| D          | discharge        | in: m <sup>3</sup> .s <sup>-1</sup>  |
| SR         | specific run-off | in: l.s <sup>-1</sup> .km <sup>-2</sup> (litres per a second and 1 sq. Km) |

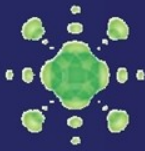


# Introduction: local primary school as an equal partner for University?

- For universities involved in research
  - Primary school as a key clue into local community and source of specific local knowledge
- For municipalities and public administration
  - Primary schools as valid partner for governance and decision making
- For local community
  - Primary schools as important endogeneous actor and actant of local community life and development







## B. Bloom (1956), revised 2001

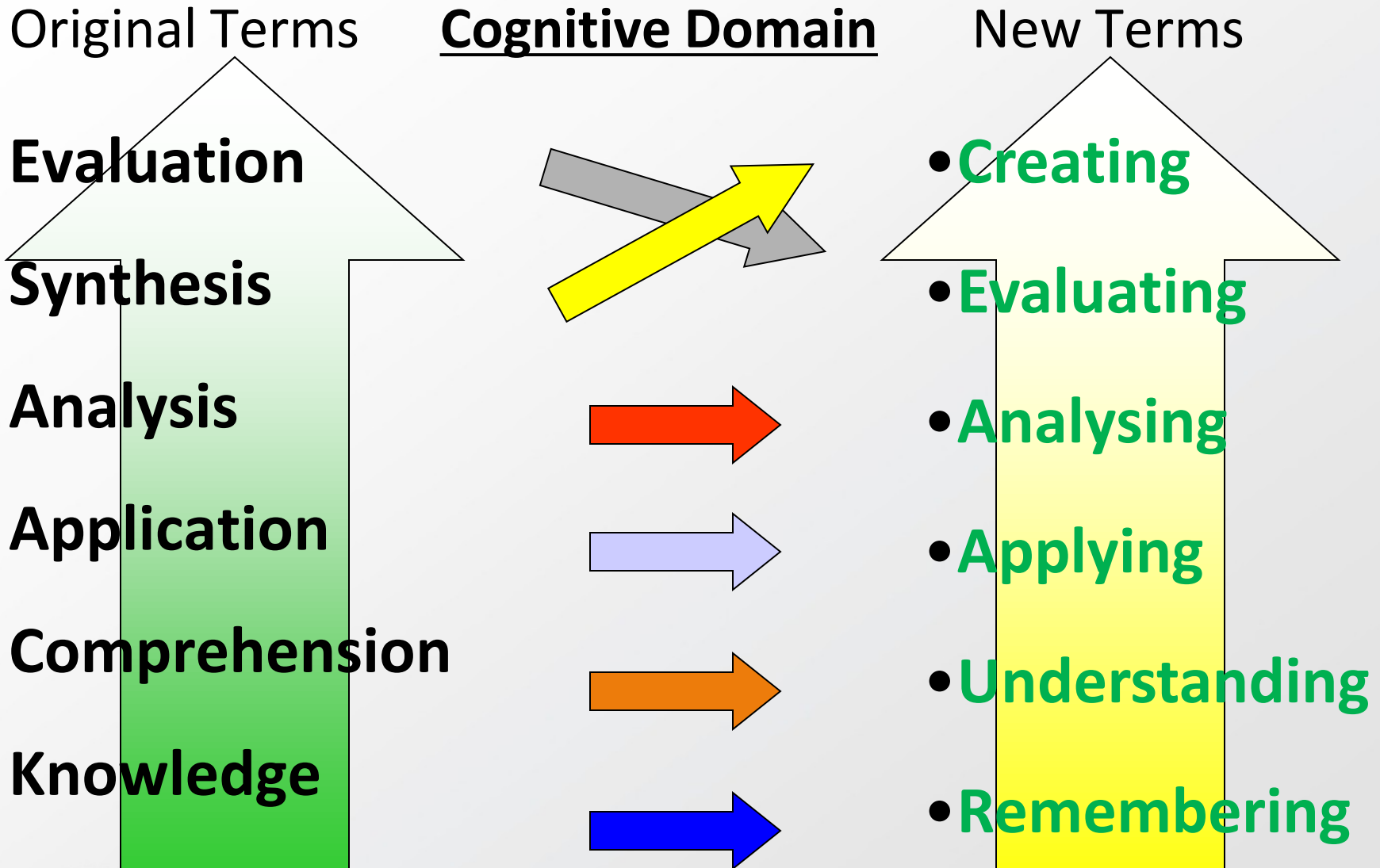
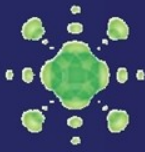
Levels of intellectual behaviour in learning –  
a taxonomy with overlapping domains:

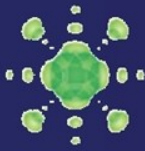
 Cognitive

 Psychomotor

 Affective

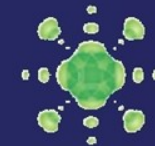






# Project educational objectives

- Connected with key “sustainability” UN agenda + Millennium Ecosystem Assessment documents
- Improvement and reorientation of educational curricula documents towards sustainable development
- Cooperation of primary, tertiary education institutions with local community and government/authority
- Analysis of environment, knowledge-power relations and various spatialities of the cultural landscape of the Deblin area
- Evaluation the living conditions/livelihood in the Deblin area
- Empowerment of local communities in good governance and opening debate on the state of the environment is a starting point in searching for sustainable development

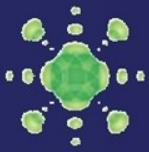


# **INOVACE VYSOKOŠKOLSKÉ VÝUKY V ENVIRONMENTÁLNÍCH OBORECH**



K udržitelnému rozvoji  
České republiky:  
vytváření podmínek





# Methodology

- inter/transdisciplinary cooperation of geographical and non-geographical approaches
- using both surface and deep data (Cloke, P. et al. 2004)
- using triangulation (Denzin, N. 1994), multiple methods
- Key-quality oriented ethnographical fieldwork/participatory approach:  
in the sense of „thick description“ (Geertz, C. 2000) ....do not study in villages, study villages

## 1) Roles change

- foreigner/true observer x true participant (participation in the community life)

## 2) Insight into the role of power – permeating power/resistance

## 3) Revealing the internal networks – actors in networking

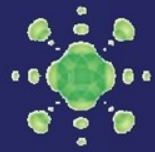
- formal and informal powers over a particular site





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3iensus





# Constructing data

superficial and deep data/extensive-intensive/thin-thick  
description

*(Cloke, P., Cook, I., Crang, P., Goodwin, M., Painter, J., Philo, C., 2004 )*

field survey  
participant observation

multiple method

Field survey

Understanding interview

Mental maps

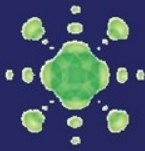
Focus groups

Personal archives

Talking to people/actors

Official/non-official sources

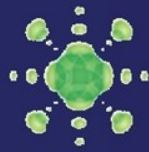
Imaginative sources



# Interpreting data

*(Cloke, P., Cook, I., Crang, P., Goodwin, M., Painter, J., Philo, C., 2004 )*

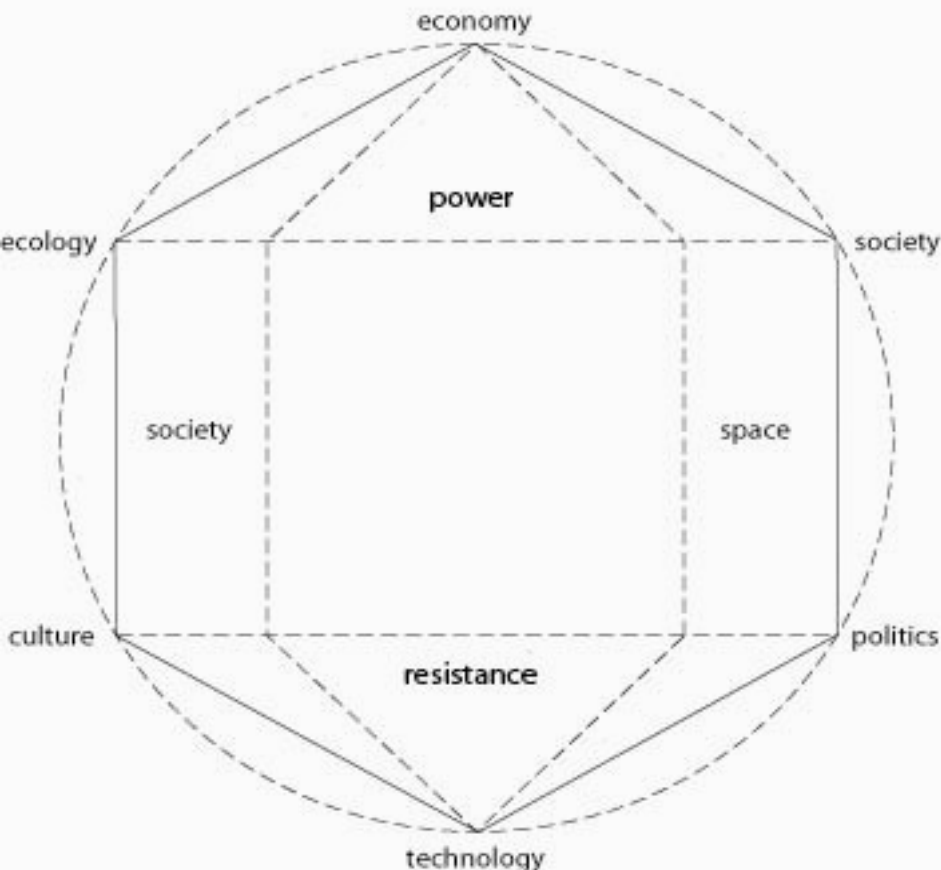
- ➔ **sifting and sorting**
- ➔ **enumerating**
- ➔ **explaining**
- ➔ **understanding**
  - ➔ **the critic/artisan/ethnographer/  
iconographer/conversationalist/therapist/  
deconstructionist**
- ➔ **representing**



# Methodological approaches to sustainability

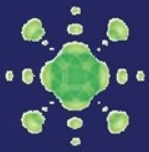
(Hynek A., Hynek N. 2007, MA 2002-2009)

ESPECT & SDOS



## Millennium Ecosystem Assessment (MA)

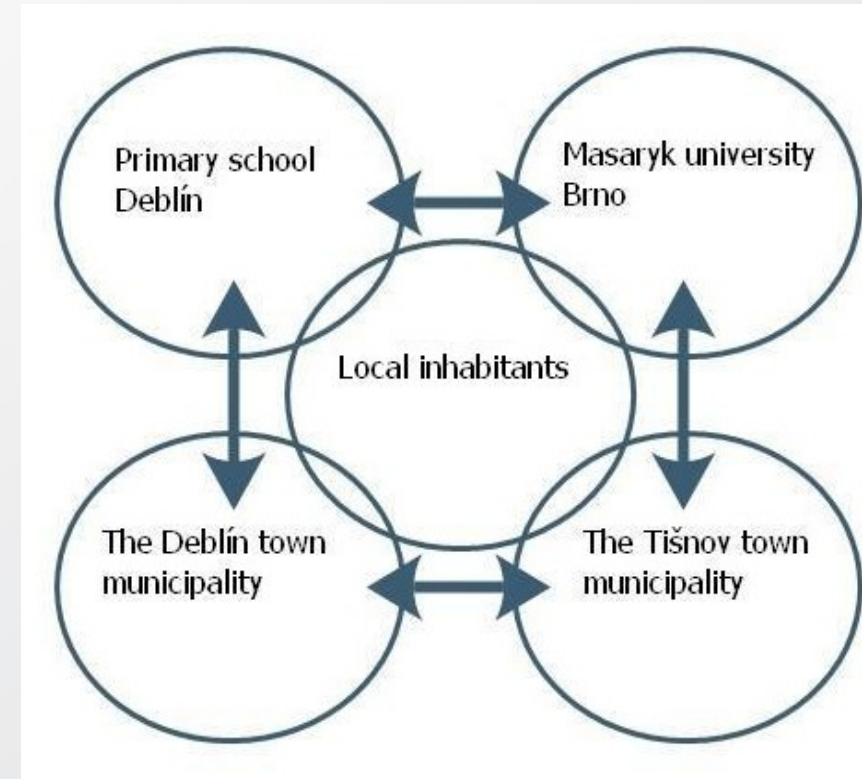
- Ecosystem as capital
- Knowledge synthesis
- Impacts of ecosystems changes
- Field+lab technologies (GIS)
- Global/national/local
- Endogenous / exogenous powers
- asset, stock, yield, income



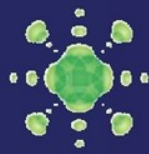
# Actors in contemporary cooperation

## Interdisciplinary cooperation

- Masaryk university, Brno
- Technical university, Liberec
- Palacký university, Olomouc
- Primary school Deblín
- The Deblín town municipality
- The Tišnov town municipality
- Local inhabitants



**Central position of local people**



# Analysis of actors and actants

## Shareholders

Local government, MÚ Tišnov, SDH Deblín, farmers, TJ Sokol Deblín, chronicler, director of primary school, private entrepreneurs, hunters

## Stakeholders

local residents, firemen, football players, students, schools, farmers, tourists, hunters

## Decision-makers

Local government, Microregion of Deblín, MÚ Tišnov (Especially the Department of Environment and Planning and Building Authority), Regional Office of JMK, representatives of the South Moravia Region, Director of Forests of the City of Brno, Head of School

## Experts outside

Ass. Prof. Lacina

## Experts inside

Witnesses / locals, Mr. Neshyba, Mrs. Antlová, Mr. Štěrbá, Mr. Habart

## Actants objects

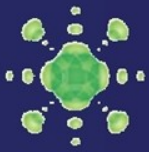
collective farm granary, an amplifier (transmitter), bus stops, Municipal House, a supermarket, building schools, lake, church, cemetery, kindergarten, cycling ways

## Communities

SDH Deblín, TJ Sokol Deblín, Sokol Deblín – football and tennis, section, farmers, the Christian community, association of Deblín Hunters, fishing club

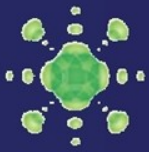






# Development of project activities

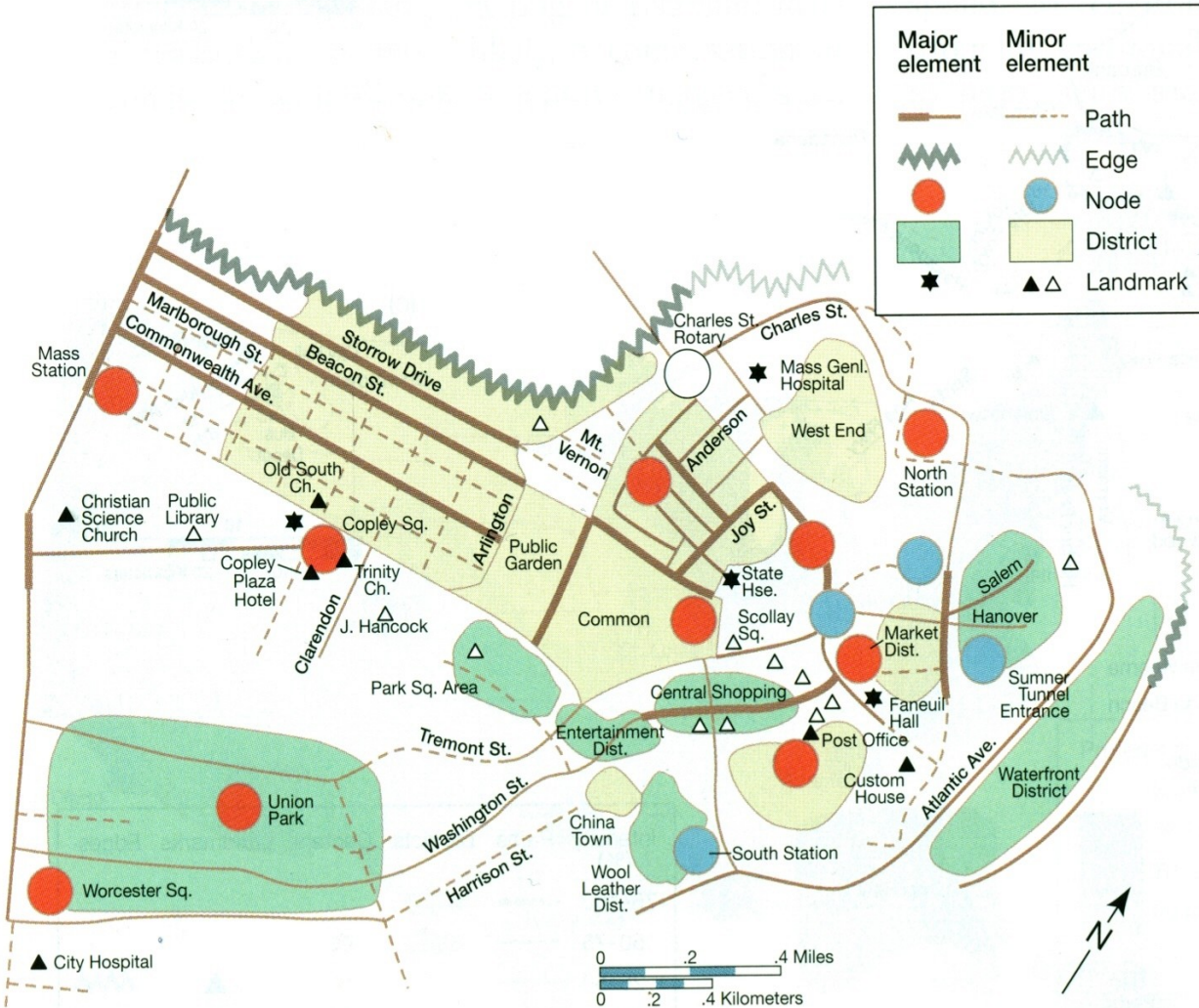
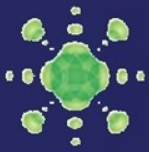
- Mental mapping as unique personal interpretation/presentation of the reality, used on a daily basis for spatial mobility and orientation, evaluated and improved continually
- Definition of the area linked to the results of mental mapping
- Collecting available data and participative/understanding interviews with major actors
- The profile of the Deblín area
- List of major problem issues connected to SLE (significant landscape elements)
- Students' and pupils' public meetings in the Deblín primary school premises and joint field work, empowering the people
- Creating outputs and public presentation of the results
- Joint field excursions/expeditions and identification of themes expected by the public/local community or government /authority – governance



# Community learning as significant part of the case study project

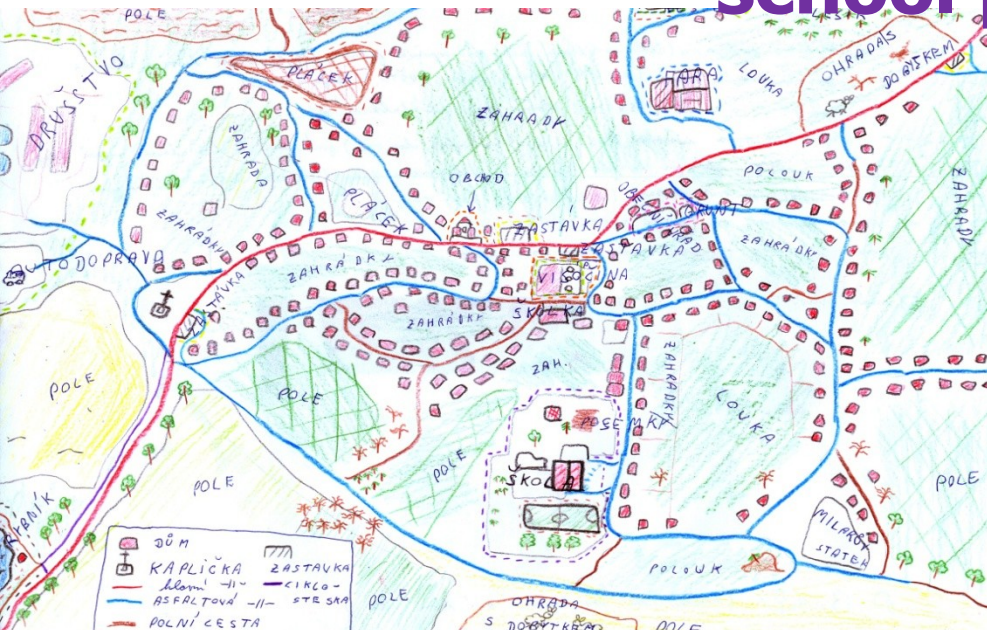
- identification of key actors/actants in community
- community networks
- power inside and outside of community
  - land use
    - owners, users, labourers, visitors.....percepts and affects
- sustainability/security x priority for the community
- debate with representatives of the local community and local authorities
- main development problem areas and proposed solutions
  - analysis, interpretation, synthesis, evaluation, proposition (LANDEP)





**Figure 6.6 Cognitive image of Boston** This map was compiled by Kevin Lynch, one of the pioneer researchers into cognitive images, from interviews with a sample of Boston residents. Lynch found that the residents of Boston tended to structure their cognitive images of the city with the same elements. He produced ingenious maps, such as this one, to demonstrate the collective “mental map” of the city, using symbols of different boldness or color to indicate the proportion of respondents who had mentioned each element. (After K. Lynch, *The Image of the City*. Cambridge, MA: M.I.T. Press, 1960, p. 146.)

# Mental mapping – perspective from primary school pupils



- - main roads
- - de for
- - trees
- - vegetation



- |               |                   |
|---------------|-------------------|
| 1. HOŘINKOVI  | 10. MAŠKOVI       |
| 2. KOTRŇCOVI  | 11. ŠEAINHAUSROVÁ |
| 3. TEJKALI    | 12. ŠABLÍKOVÍ     |
| 4. HOŘÁKOVÍ   | 13. Soukupovi     |
| 5. ŠKOLNÍKOVÍ | 14. Sojkovi       |
| 6. STANĀKOVÍ  | 15. Sojkovi       |
| 7. ZAVŘELOVI  | 16. Sojkovi       |
| 8. SOJKOVÍ    | 17. ŠPAČKOVÍ      |
| 9. ŠTOČKOVÍ   | 18. MAŠKOVI       |

D. Barbál (ještě se málokdy o ní říká)

# Mental mapping – perspective from university students



**Primary school pupils Deblín** x university students MU Brno  
**detailed maps** x using generalization  
**real** x mediated reality  
**stereotypes** x „objective“ perception  
**not linked with greater area** x patterns and connections

# Deblin community

„Deblin area becomes a popular location ...“



**rodinné domy Deblín**

Are there enough water for citizens?..“

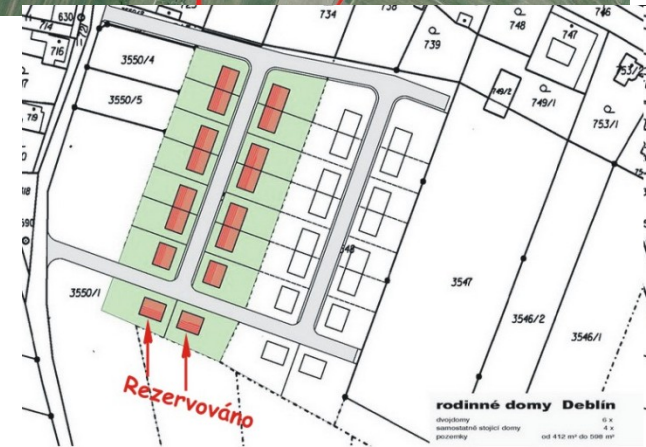
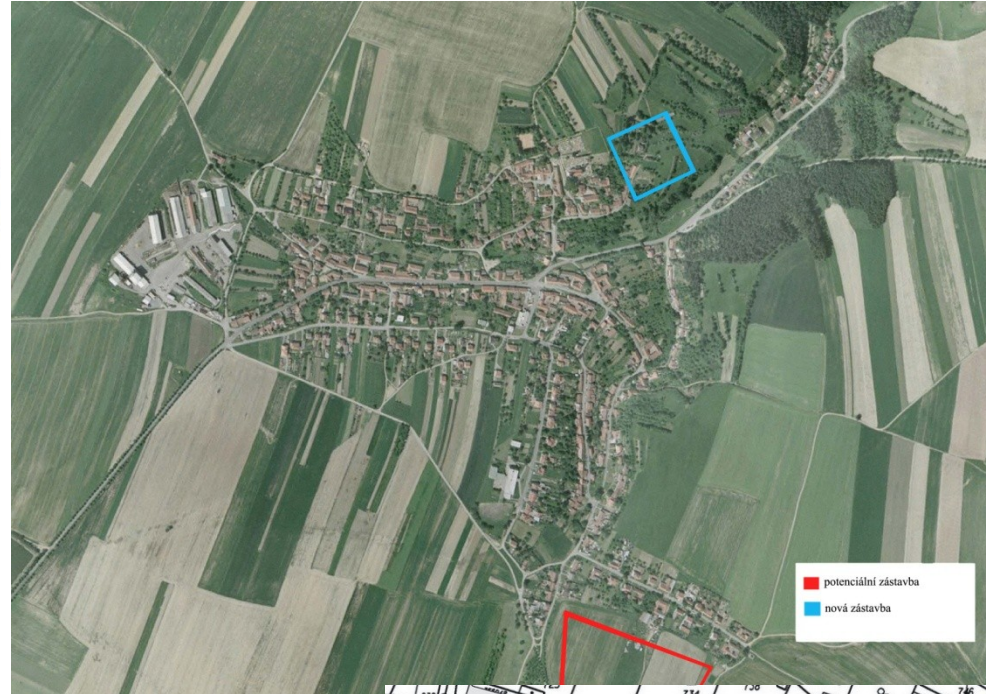
## View of new residents

- Clean environment,
- Good location,
- Basic services,
- Good land parcel prices.

## Conservatives

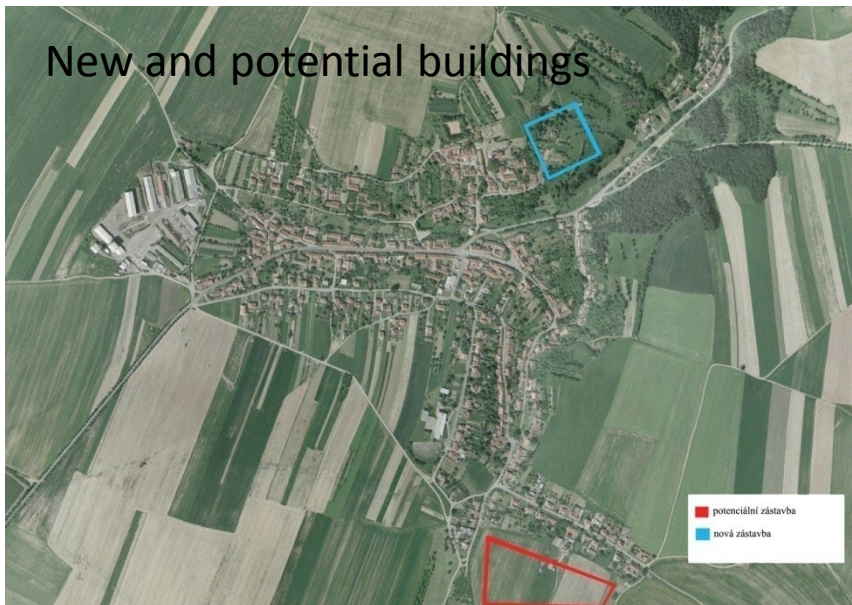
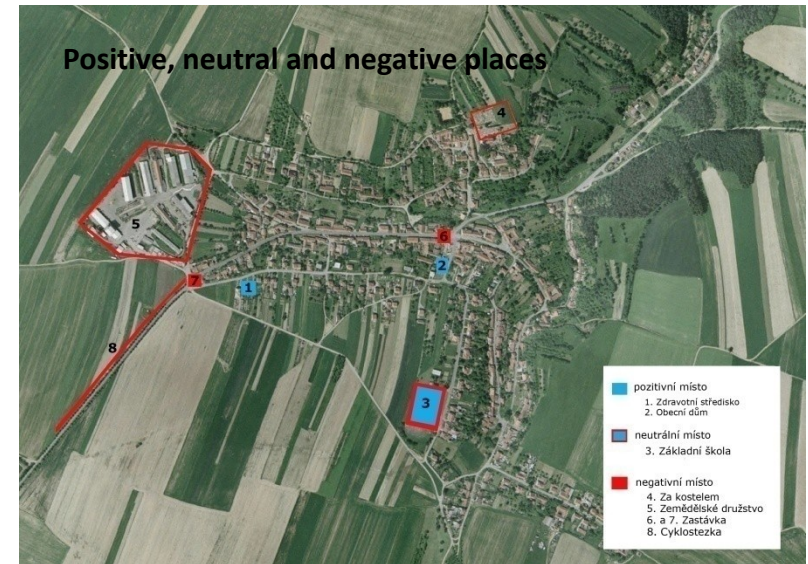
- 'new peasants', strong identity
- X - city services,
- building new houses in the family,
- obsolete building

Obr. 3: Nová a potenciální zástavba



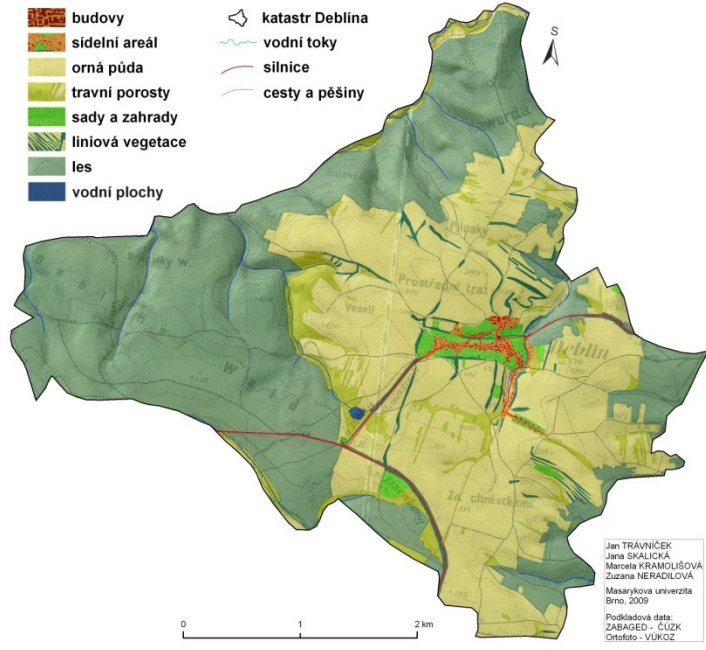
# Examples of primary school pupils work

| GENERACE                   | SEKTORY NÁRODNÍHO HOSPODÁŘSTVÍ |          |         |         | NEJČASTĚJŠÍ POVOLÁNÍ |
|----------------------------|--------------------------------|----------|---------|---------|----------------------|
|                            | PRIMÉR                         | SEKUNDÉR | TERCIÉR | KVARTÉR |                      |
| 1. generace                | 70%                            | 17%      | 10%     | 3%      | JZD                  |
| 2. generace                | 45%                            | 35%      | 20%     | 0%      | JZD                  |
| 3. generace                | 6%                             | 45%      | 39%     | 10%     | svářeč               |
| naše generace<br>(žáci ZŠ) | 7%                             | 40%      | 46%     | 7%      | obráběč kovu         |

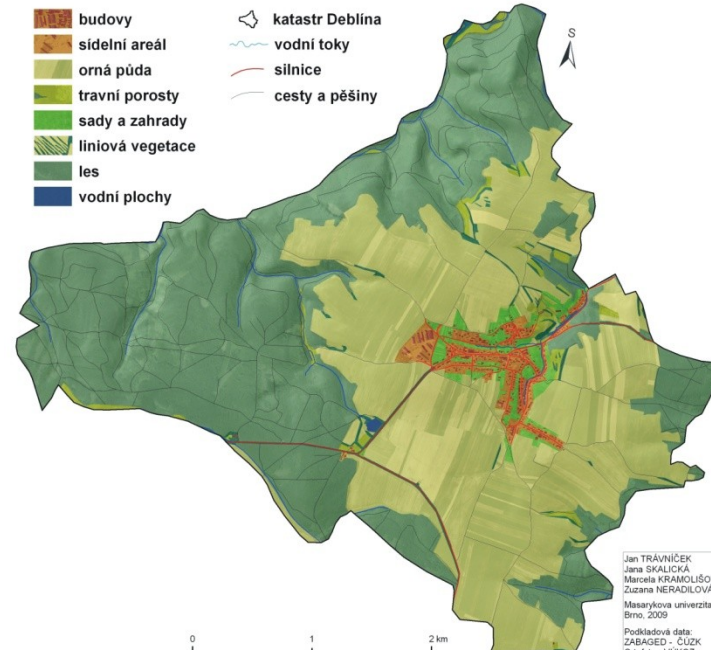




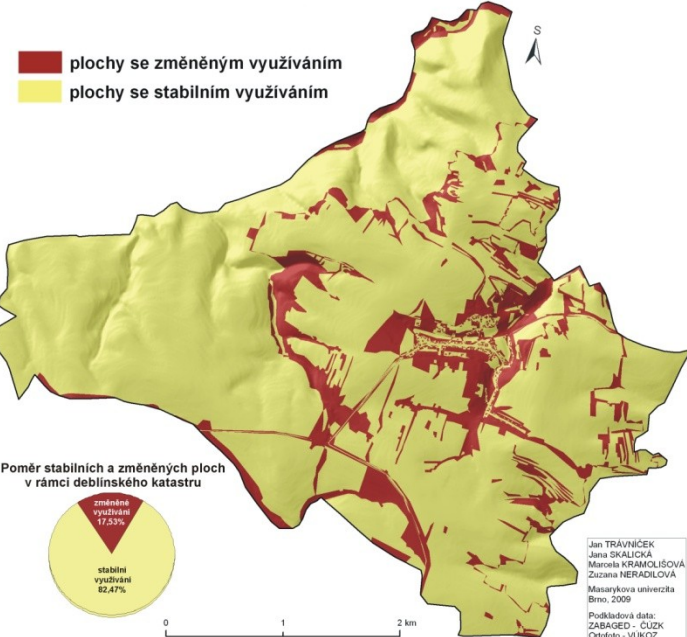
## LAND USE V KATASTRU DEBLÍNA V ROCE 1876



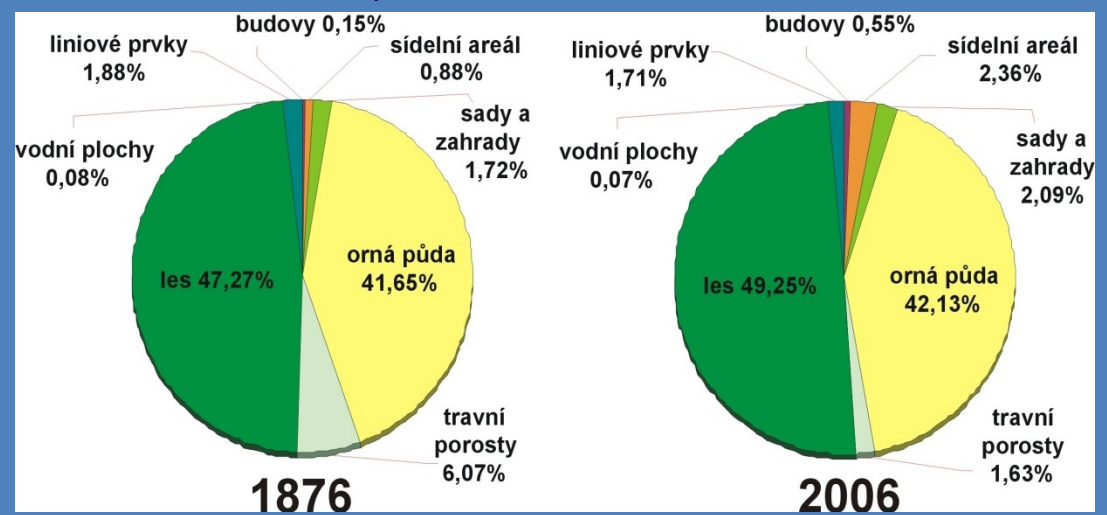
## LAND USE V KATASTRU DEBLÍNA V ROCE 2008



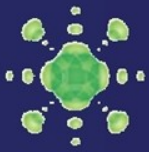
## PLOCHY SE STABILNÍM A ZMĚNĚNÝM VYUŽÍVÁNÍM V KATASTRU DEBLÍNA



## Land use parcels in Deblín cadastre



A.Hynek, Svozil, B., Trávníček, J., Trojan, J.: Trvalá udržitelnost 'Deblínska', 2009

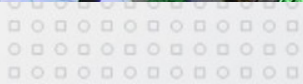


# Significant landscape elements (SLE)

in the frame of territorial system of ecological stability (Buček, Lacina)

- „Ecological, geomorphological or aesthetic value of landscape shaping its appearance and / or contributing to its stability“ (Act 114/1992)
- Decision maker of SLE is legislatively ambivalent
  - Which gives the chance for creativity and participation
- Potential/capital of SLE as actant (in the sense of Latour, 2005)
  - ecological stability, biodiversity, aesthetic value (**the "biological" function**)
  - reducing water and wind erosion (**the "protective" function**)
  - relicts of historical landscape structures (**the "historical" function**)
- Creating the relationship between pupils and the town landscape
  - examination of the SLE (cognitive level)
  - management of the SLE (landscape and community actors/actants)
  - SLE usage (eg for sustainable tourism)





# CURRENT RISKS IN RELATION TO SUSTAINABLE PERSPECTIVE ON WATER

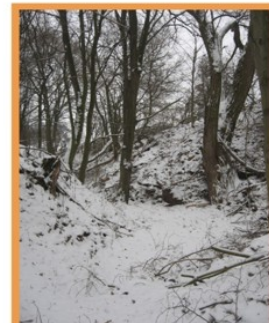
## POTENCIÁLNÍ RIZIKOVOST DEBLÍNSKA VE VZTAHU K TRVALE UDRŽITELNÉMU POHLEDU NA VODU K ROKU 2008

Nevhodné zapojení vodního toku do intravilánu a stav jeho koryta má nejen nízké estetické kvality, ale nese s sebou problémy rychlého odtoku vody z území a nedostatečné přirozené filtrace vody.

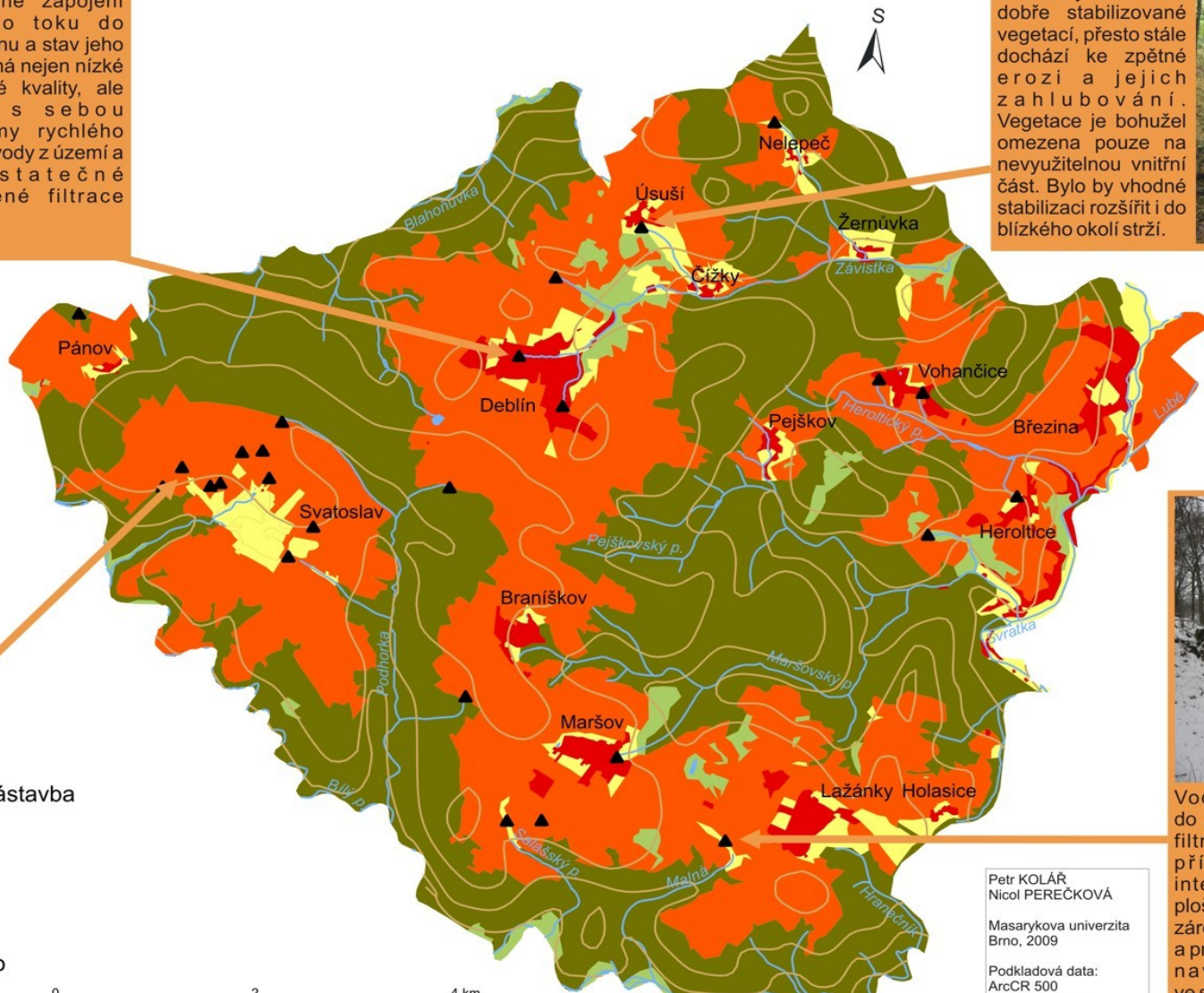
Ačkoli jsou strže dobře stabilizované vegetací, přesto stále dochází ke zpětné erozi a jejich zahlubování. Vegetace je bohužel omezena pouze na nevyužitelnou vnitřní část. Bylo by vhodné stabilizaci rozšířit i do blízkého okolí strží.



Intenzivně obdělávané plošiny jsou významným zdrojem znečištění vodních toků. Půdní pokrýv nese znaky eroze, jež silně napomáhá zrychlenému přenosu znečišťujících látek do vodního oběhu.



Voda dostávající se do strží nemá možnost filtrace, jelikož strže přímo navazují na intenzivně využívané plošiny. Stržovou erozí je zároveň odtok urychlen a problematické jsou také navážky a skládky ve stržích vznikající.






- ▲ riziková místa
- vysoké riziko - zástavba
- vysoké riziko
- střední riziko
- nízké riziko
- velmi nízké riziko

0 2 4 km

Petr KOLÁŘ  
Nicol PEREČKOVÁ  
Masarykova univerzita  
Brno, 2009  
Podkladová data:  
ArcCR 500  
Ortofoto - CENIA

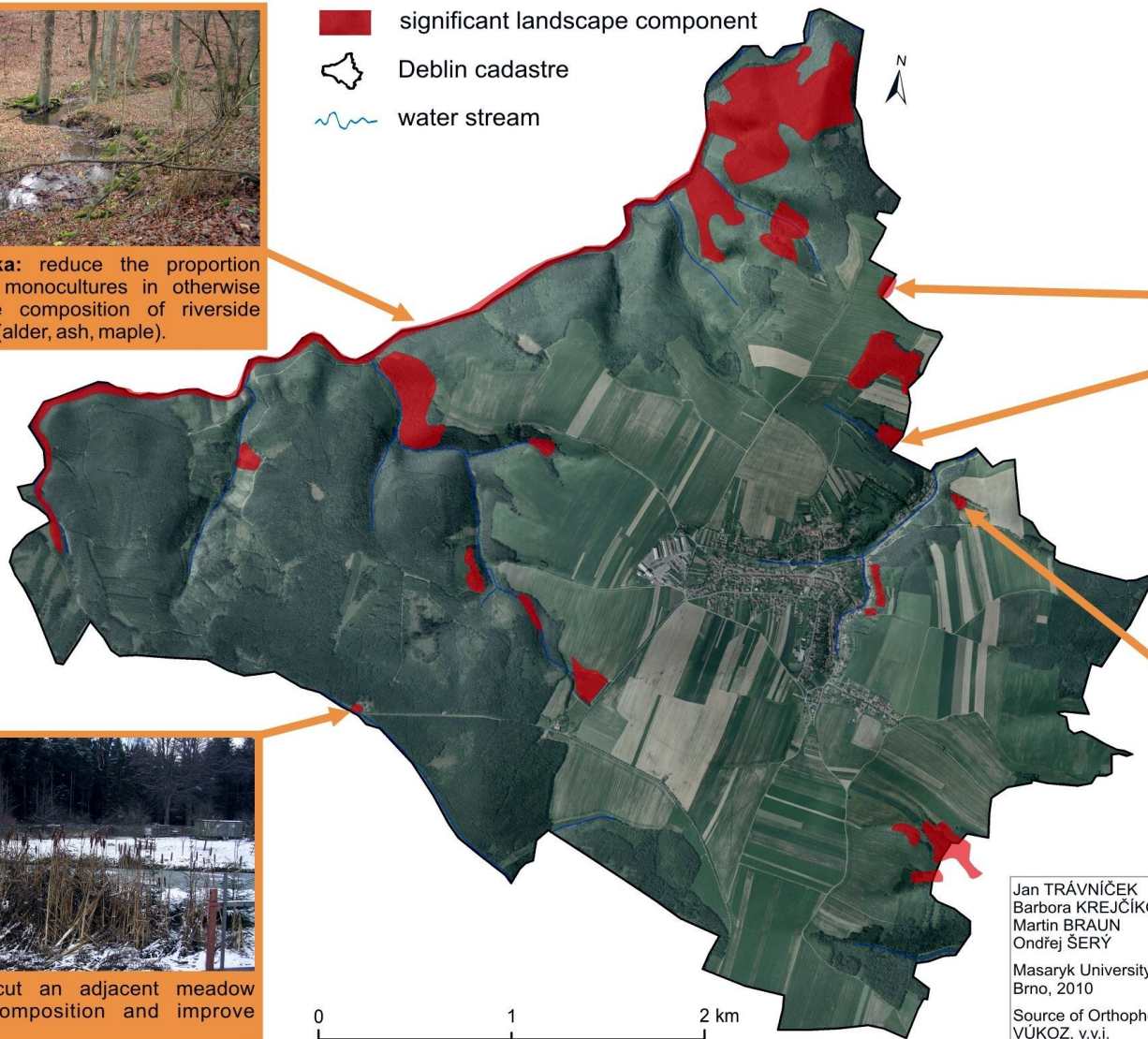


**Blahoňůvka:** reduce the proportion of spruce monocultures in otherwise appropriate composition of riverside vegetation (alder, ash, maple).

-  significant landscape component
-  Deblín cadastre
-  water stream



**Úsušský remízek:** general clean up, remove the brambles.



**Strejčkov:** strengthen the dam pond bottom, remove the remnants of wire fence and increase the proportion of oak and fir.



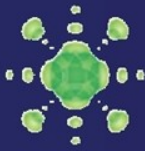
**Mokřad:** cut an adjacent meadow species composition and improve wetland.



**Suchá loučka:** cut a meadow, improve the condition of the bush line vegetation, extend SLC.

Jan TRÁVNÍČEK  
 Barbora KREJČÍKOVÁ  
 Martin BRAUN  
 Ondřej ŠERÝ  
 Masaryk University  
 Brno, 2010  
 Source of Orthophoto:  
 VÚKOZ, v.v.i.

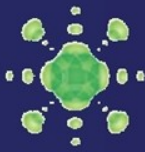
SLE deployment in the land of Deblín, graphical solution suitable for popularization through lectures and instructional signs



# Financing the future

- Activities supported through projects financed by structural funds (EU – Operational Programme Education for Competitiveness)
- 2 key projects
  - Sustainability as part of school educational programme
    - Atlas and local geographical textbooks
    - Supports for students (ICT, e-learning)
  - Empowering language skills through environmental education
- Other projects where Primary school Deblin plays the „partner role“





# SUMMARY of current results

The activity helped pupils to interest local residents about their neighborhood resident and encourages them to actively engage in the project.

## PUBLIC PRESENTATION OF RESULTS

Results discussed with representatives of public administration and local authorities to take account of them in practice.

### Cooperation still continues...

- **Vohančice** (water management issues)
- **SLE excursion**
- **Grants and funds support**
- **Informational boards in woods**
- **SLE management in cooperation with Municipality of Tišnov**
- **Implementation into curricular documents at Primary school Deblín**
- **Best practice preparation with participation of Ch. Schrefel - 17&4 Organisationsberatung GmbH**

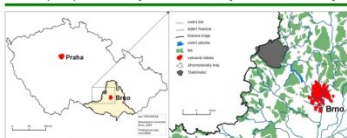
**2010: Actors meeting – local Agenda creation?**

# OUTPUTS PRESENTATION

- Evaluation and feedback
- High participation

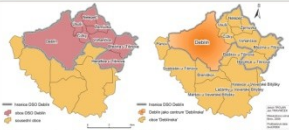
# COOPERATION CONTINUES...

- Operational Programme
- Vohančice
- Excursion for pupils
- Atlas of Deblín region
- Actors meeting
- Information tables
- SLE management

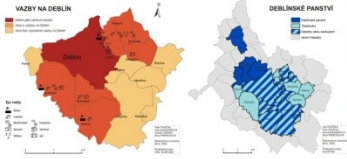


Zákon č. 171/99 Sb. o životním prostředí České republiky uvádí: „Udržitelný rozvoj společnosti je takový rozvoj, který současným i budoucím generacím zachovává možnost uspokojovat jejich základní životní potřeby a přitom neshazuje rozmanitost přírody a zachovává přirozené funkce ekosystémů.“

Z této definice vychází projektová spolupráce mezi Základní školou Deblín a Geografickým ústavem Přírodovědecké fakulty Masarykovy univerzity v Brně. Usiluje o aktivaci a participaci všech subjektů, které žijí a nebo nějakým způsobem ovlivňují 'Deblínsko' a mají snahu se svými podnětnými návrhy podílet na budoucí podobě rozvoje území.



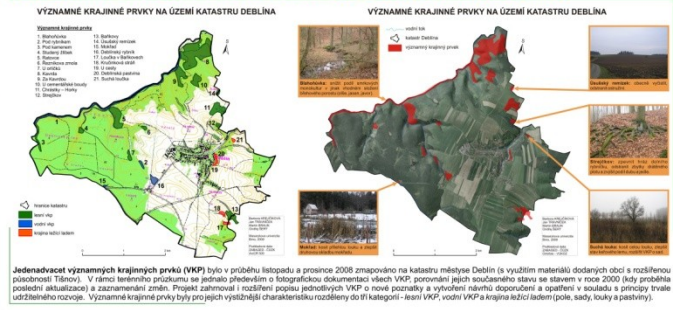
## VAZBY NA DEBLÍN



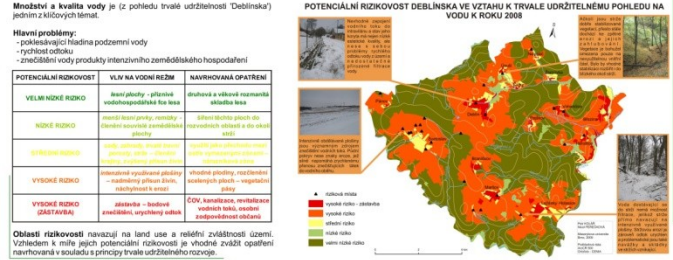
## PRÁCE STUDENTŮ ZŠ DEBLÍN



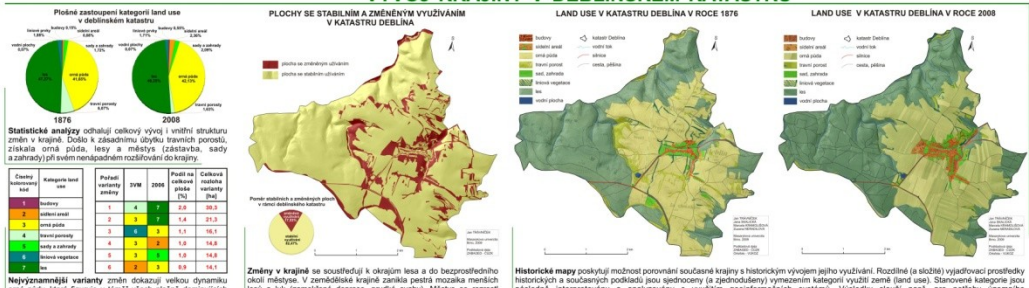
## VÝZNAMNÉ KRAJINNÉ PRVKY V DEBLÍNSKÉM KATASTRU



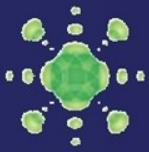
## VODA NA DEBLÍNSKU



## VÝVOJ KRAJINY V DEBLÍNSKÉM KATASTRU







**Thank you for attention**

