ECONOMY VERSUS THE ENVIRONMENT – COMPETITIVENESS OR COMPLEMENTARITY

23 - 27 November 2015

Economic and social preconditions of development in the Czech rural areas: acceleration of global influence and local changes

Věra Majerová

ČZU
ČESKÁ ZEMĚDĚLSKÁ UNIVERZITA V PRAZE

ENVIRONMENT IS THE KEY TO BE UNDERSTOOD

- **Broader concept of environment** ➔ all natural space that surrounds us
- **In the narrower sense** ➔ the **closest environment** in which it takes place , our daily lives
- All elements of the environment are grouped in **expected** and **unexpected contexts**
- The environment of every rural village is a **complex** of unique **economic**, **social** and **environmental** elements
- The structural stability and development of villages depend on (to some extent) a **balanced relationship** all the elements
- The **environmental dimension** is a fundamental prerequisite for long-term sustainability of rural development

ISSUES OF CZECH AGRICULTURE

- **In the Czech Republic, in terms of the relationship of economics and environmental perspectives, aspects under discussion**:
  - Intensification of agriculture and its impact on the environment
  - The impact of factory farming on public health
  - Principles of organic farming
  - Expanding the range of organic food
  - Assessment of climate change
  - Renewable energy
  - And more...

History of Czech agriculture

- **Collectivisation after 1948 (the beginning of totalitarianism)**
  - Expropriation of land (the attack on the institution of property)
  - The formation of cooperatives
  - Interlining farmland
  - The emergence of intensive agriculture
  - Minimum soil conservation and protection of the environment
- **After 1989 (democratisation)**
  - Restitution
  - Legislative instability - continued farmland degradation; since 1990; an increase in organic farmers
- **After 2004 (membership of the EU)**
  - Implementation of CAP legislation - leads to an improvement in the quality of farmland; an increase of environmental protection; initiates changes in the socio-economic sphere of the country

Features of intensive agriculture

- Small species diversity (cultivation of a very limited number of crops)
- Dependence on external inputs
- Threats of diseases and pests
- Depletion of soil
- The industrialisation of agriculture (the use of heavy farm equipment)
- Destruction of soil structure
- Deterioration of soil permeability
- Lowering of groundwater
- And more...

IMPACTS OF INTENSIVE AGRICULTURE ON THE ENVIRONMENT

- Agriculture consumes large quantities of **water**, **energy** and **chemicals**
- **Irrigation systems** draw water from the tank faster than just complementary watering
- **Herbicides** and **insecticides** accumulate in the soil and surface waters
- **Chemical fertilisers** are flushed from fields into streams, where there is increased eutrophication caused by an overgrowth of harmful cyanobacteria.
- The consequence of **collectivisation environmental loss** is ecologically stabilising elements in the landscape (limits, hedgerows, moist floodplain meadows)
- **Land consolidation** into large land blocks, which often did not respect the topography
- Disturbed runoff conditions and the related risk of **flooding**, **floods** or **drought**

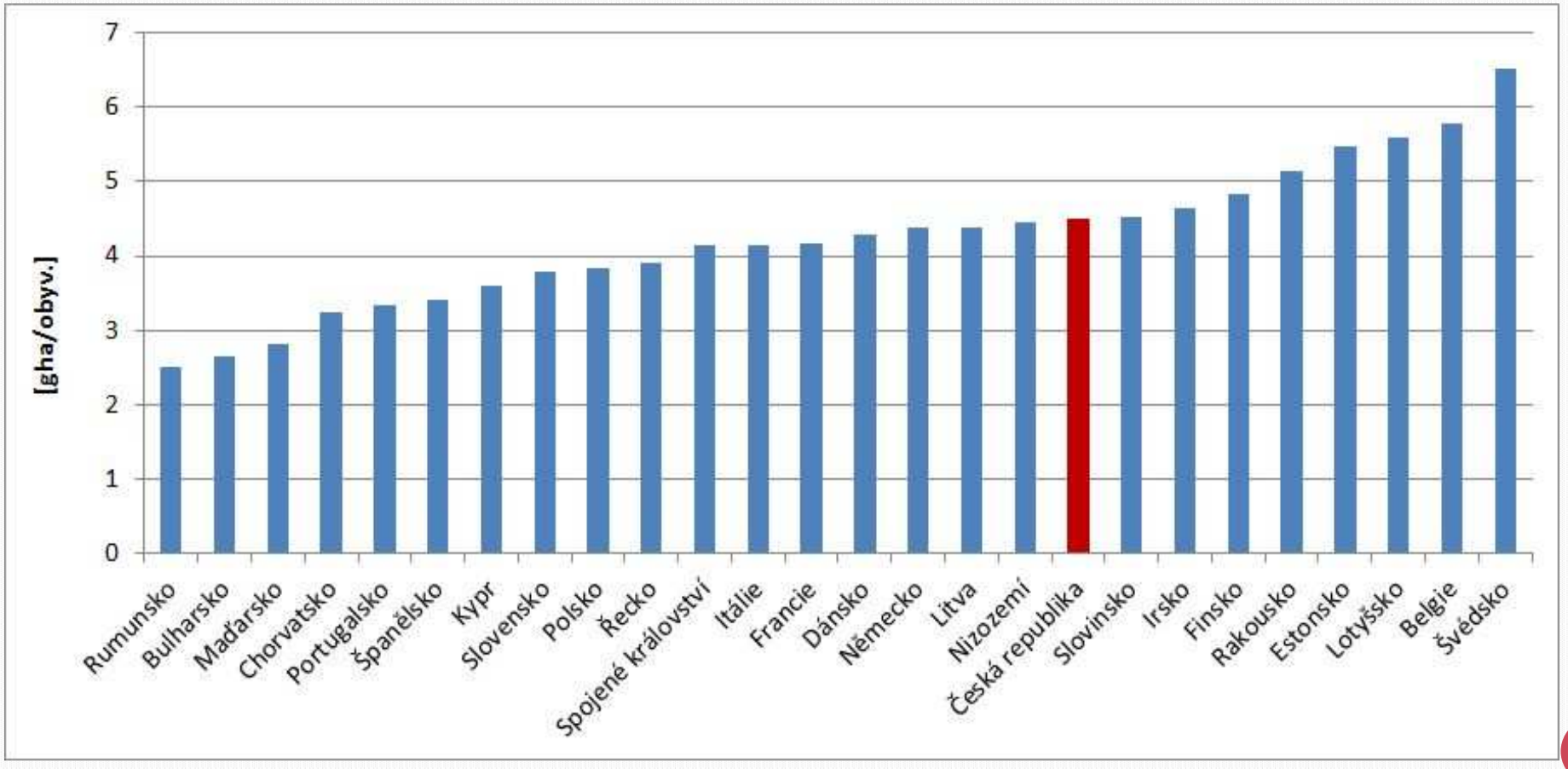
THE CONSEQUENCES OF INTENSIVE AGRICULTURE

- Decrease in the number of species of soil microorganisms
- Erosion
- Soil compaction by heavy machinery
- A reduction in the diversity of life in the countryside
- Water and soil contamination
- Formation of hazardous wastes
- Groundwater contamination
- Pollution caused by shipping
- Rural decline

ORGANIC AGRICULTURE

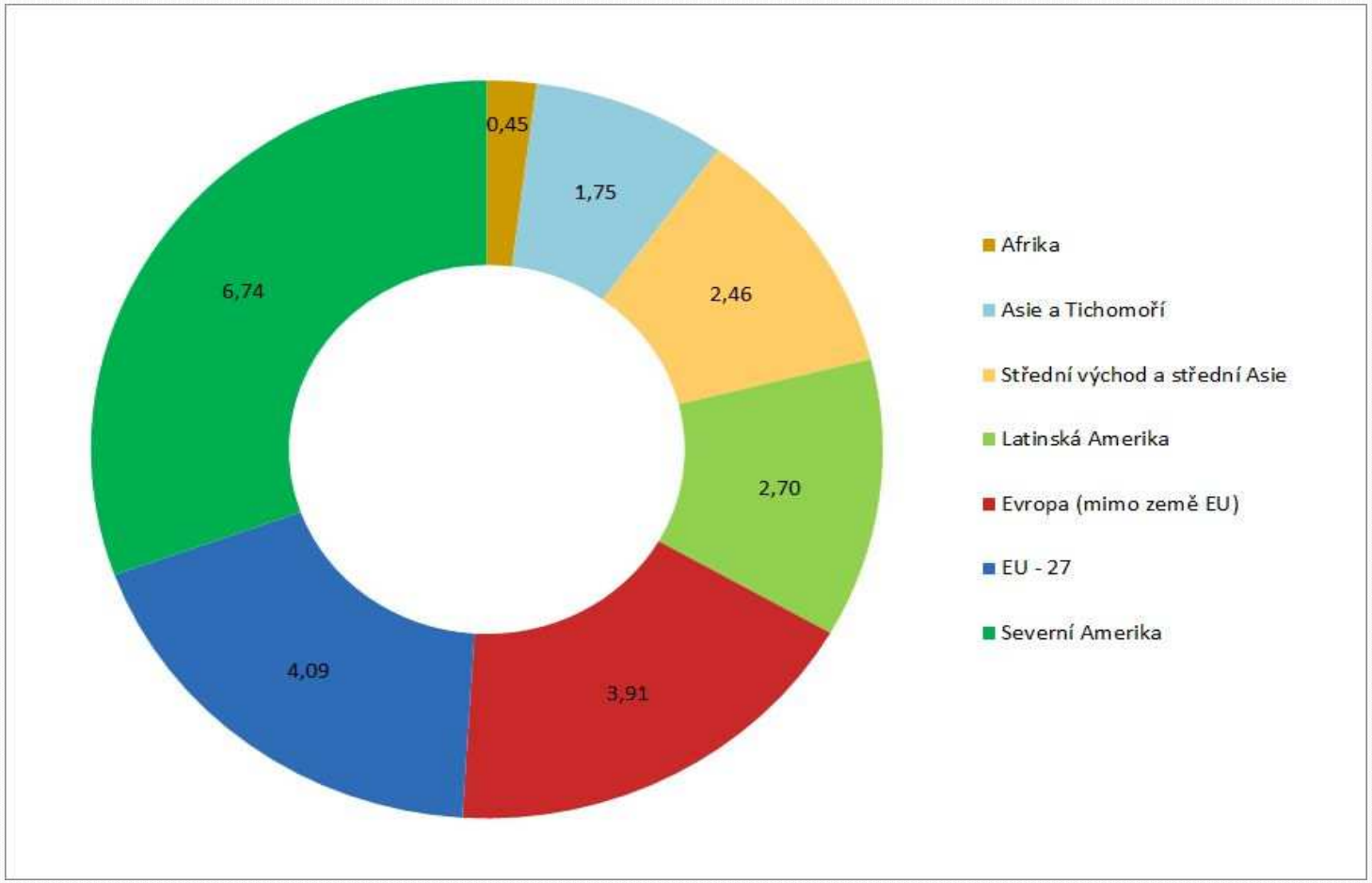
- A growing trend since 1990
- **Organic farms** ➔ 11.68 % (500 000 ha) in 2013
- When comparing the profitability of conventional and organic agriculture – organic agriculture achieves **greater profits**
- There are **positive externalities** in the form of greater environmental protection and the conservation of soil quality; higher rate of organic farmers' co-responsibility for the state of the landscape
- Higher **dependence on subsidies** has a negative impact on the market
- The management of inputs and outputs is reduced when compared with conventional agriculture

FIGURE 2: THE ECOLOGICAL FOOTPRINT OF THE POPULATION OF THE EU 27 IN 2011 [GHA / INHABITANT]



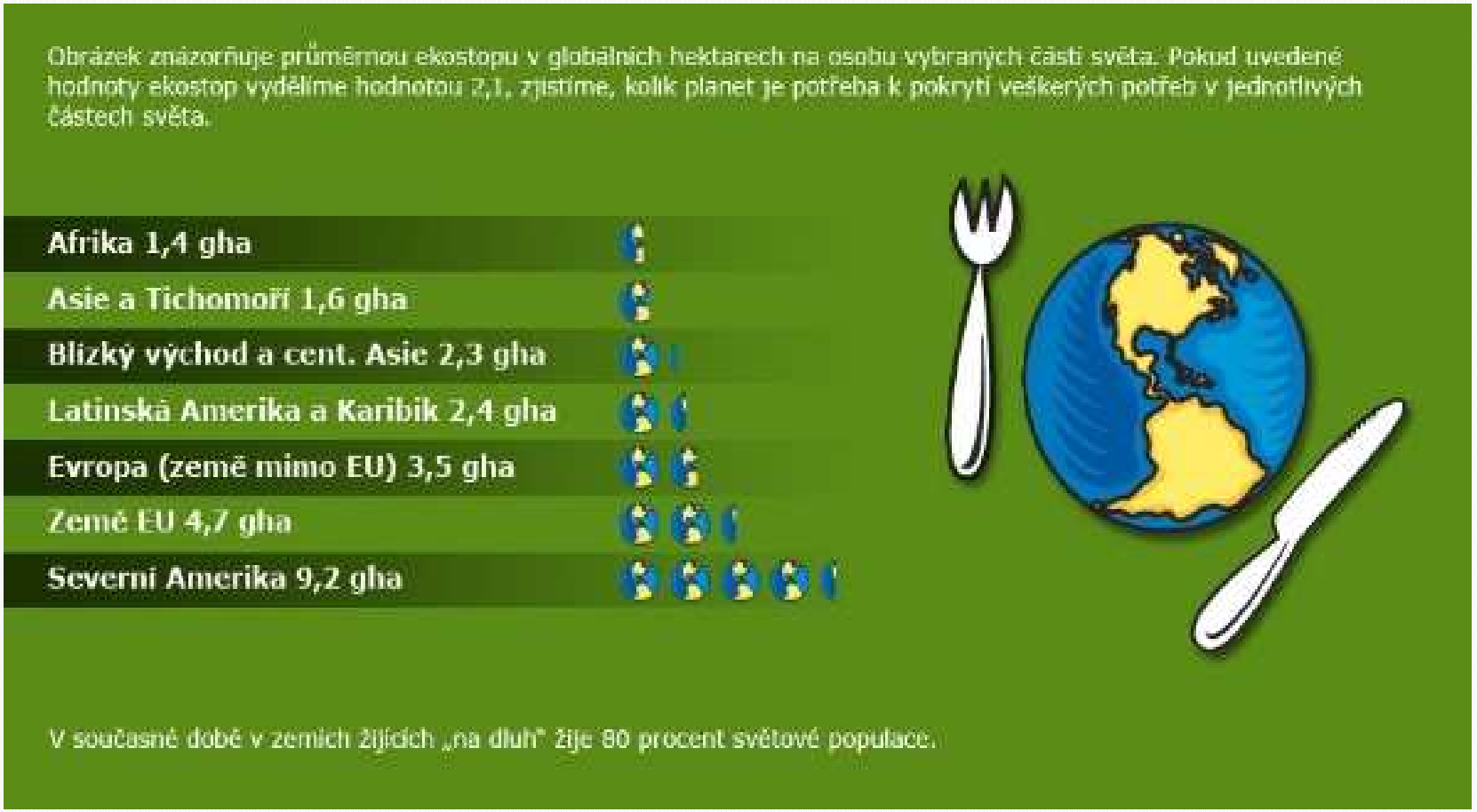
Source: http://www.vitejtenazemi.cz/cenia/index.php?p=environmentalni_pohled&site=spotreba

FIGURE 3: AVERAGE ECOLOGICAL FOOTPRINT OF CONTINENTS IN 2011 [GHA /INHABITANT]



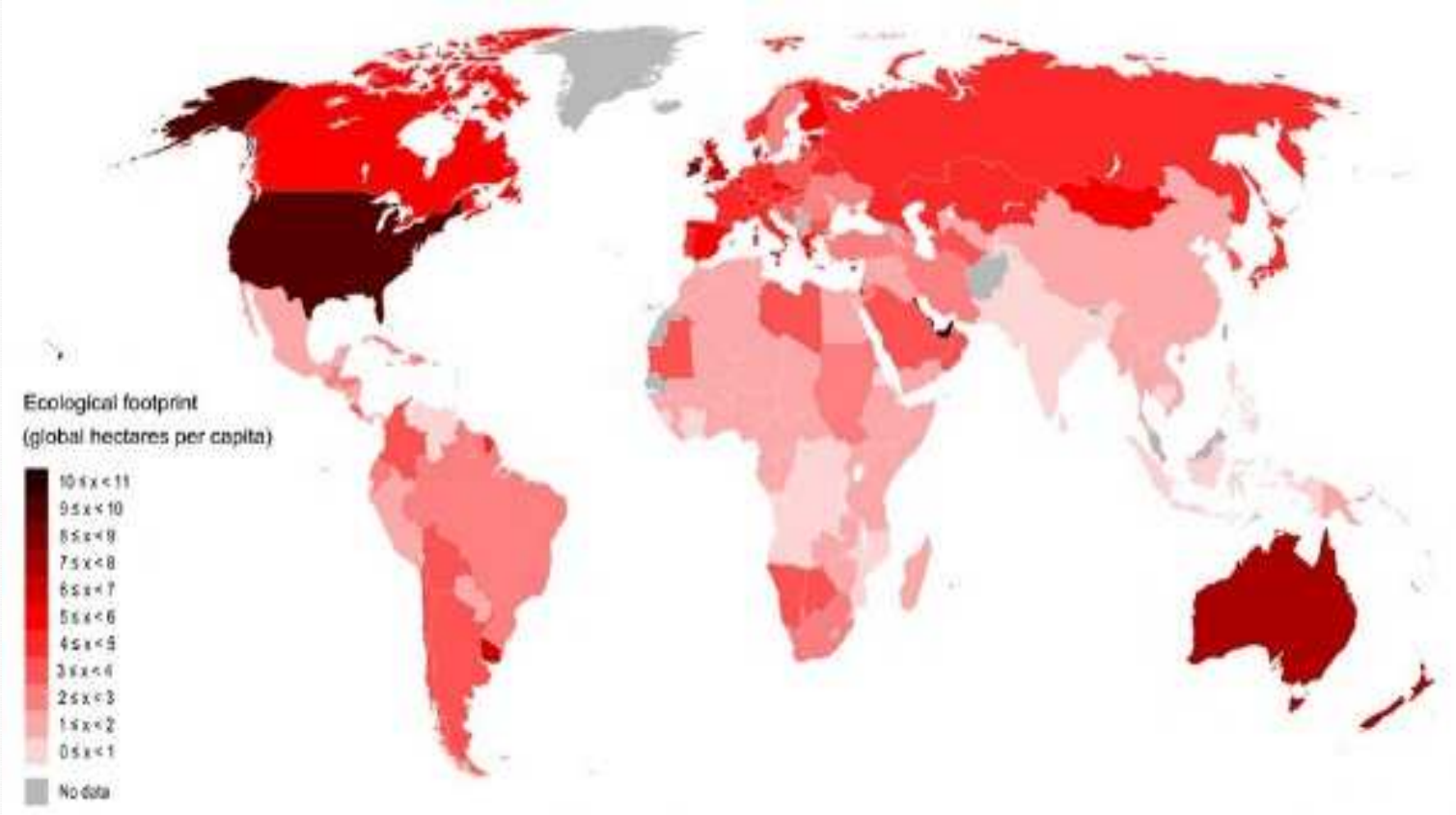
Source: http://www.vitejtenazemi.cz/cenia/index.php?p=environmentalni_pohled&site=spotreba

FIGURE 4: THE AVERAGE ECOLOGICAL FOOTPRINT IN GLOBAL HECTARES PER PERSON IN SELECTED PARTS OF THE WORLD



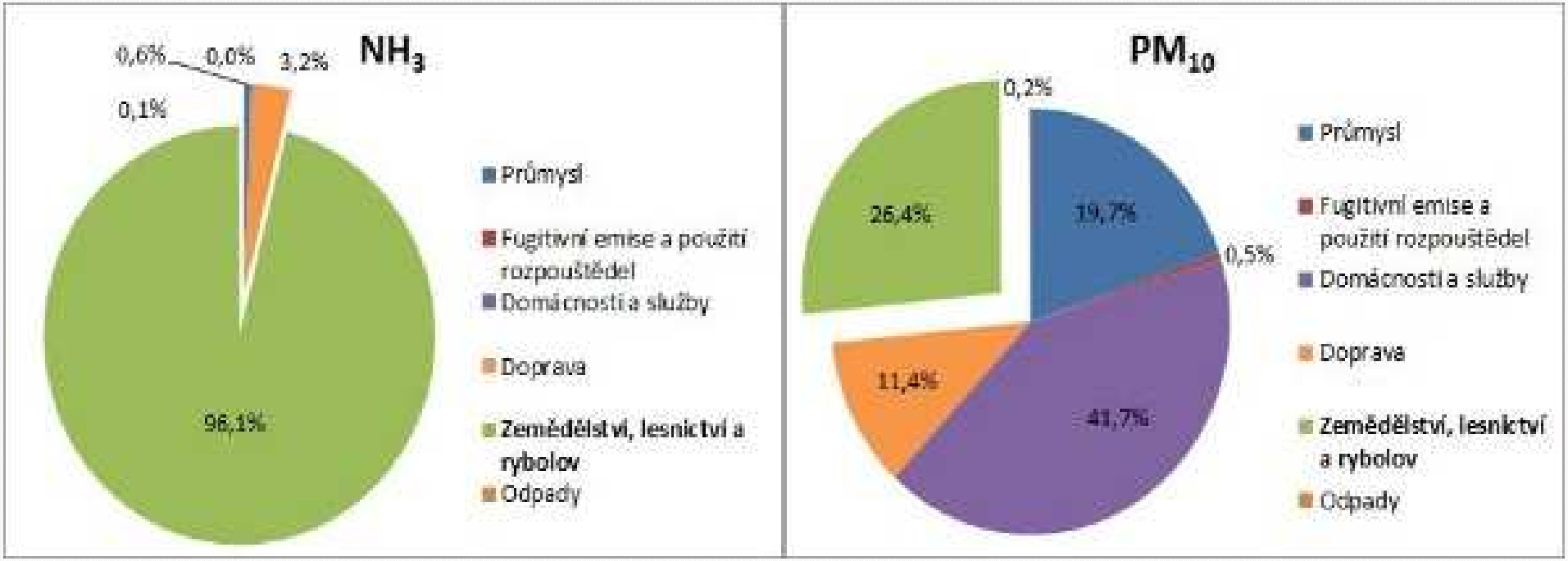
Source: http://www.vitejtenazemi.cz/cenia/index.php?p=environmentalni_pohled&site=spotreba

Figure 5: The ecological footprint of individual countries - Map of the World (2009) [gha /inhabitant]



Source: http://www.vitejtenazemi.cz/cenia/index.php?p=environmentalni_pohled&site=spotreba

FIGURE 6: THE SHARE OF AGRICULTURE, FORESTRY AND FISHERIES ON EMISSIONS OF AMMONIA (NH3) AND PARTICULATE MATTER (PM10) IN 2012 [%]



Source: http://www.vitejtenazemi.cz/cenia/index.php?p=environmentalni_pohled&site=spotreba

SOCIO-ECONOMIC PROBLEMS OF CZECH RURAL AREAS

- **Soil erosion** is mainly a socio-economic, political, cultural and rural problem
- **Landowners** handle it better than tenants and agri-environmental instruments are motivated to protect Nature more effectively
- Changes in the **cultural**, **social** and **business environment** lead to changes in **business strategie**s of farmers who have mentioned the negative impacts on soil quality
- Global and national players are putting pressure on **removing farmland** from agricultural fund resources, leading to an overall loss of farmland in the Czech Republic

IMPACTS OF SOCIO-ECONOMIC PROBLEMS OF CZECH FARMS

- Not only in this country but throughout the EU, the numbers of **new young farmers** are decreasing and thus do not provide the adequate replacement of the older generation
- An indicator of the **age structure** of members of farm families (actively farming) shows the threat to future agricultural development
- Currently, young farmers regard themselves more as **entrepreneurs** - focusing on diversity and profitability - leading to a threat to the peripheral areas and a vulnerability of the processes of succession
- There are differences in **relationship to the environment** between large and small farms – smaller farmers are accountable and respectful towards their environment

FIGURE 7: RELATION OF CZECH HOUSEHOLDS TO THE ENVIRONMENT 2006-2013

Environment	2006 +/-	2007 +/-	2008 +/-	2009 +/-	2011 +/-	2012 +/-	2013 +/-
	%						
Give, assort dangerous waste	71/18	72/20	71/21	75/19	74/22	76/18	80/16
Assort common waste	76/23	78/21	81/18	80/18	82/18	82/17	83/16
Buy bio-food	–	–	12/82	11/85	12/85	10/83	13/84
Environmental decision to buy the products	32/54	34/55	29/59	29/61	27/64	26/62	28/64
Reduction in motoring to protect environment	17/57	15/57	12/61	13/64	17/65	19/59	20/62
Save energies and water to protect environment	48/46	53/44	48/48	47/50	40/48	57/43	53/44

Source: http://cvvm.soc.cas.cz

SUPPORT OF LOCAL DEVELOPMENT IS A KEY FACTOR

- **Local production** reduces environmental footprint and supports local business environment
- **CLLD** ➔ not only the individual but the entire community must have an interest in cultivating the environment in which they live
- **LAGs** ➔ in the Czech Republic, this is a very useful tool for rural development (their activities cover 95 % of the Czech Republic)
- **Regional identity** ➔ the relationship to the place where you come from, is a key factor in its protection and future development

CONCLUSIONS

- The **limitationss of Nature** raise refusions about the idea of continuous economic growth
- Czech and all societies will have to build a **new relationship with the environment** in which they live and abandon the stereotypes of a consumer society
- **One of these changes must involve a new insight into the importance of**:
  - **Farmland** → not as a source of income, but as a source of stability
  - **Countryside** → not as a source of mineral wealth, but as the source of life
  - **Rural society** → not as a source of backwardness, but as the source of the relationship with Nature)

References

- Boardman, J., 2006. Soil erosion science: reflections on the limitations of current approaches. Catena 68 (2), 73-86.
- Brožová I (2011): The economic performance analysis of organic farms in the Czech Republic. Agricultural Economics, 57, 5, 240-246.
- Burton, RobJ.F., 2006. An alternative to farmer age as an indicator of lifecycle stage: the case for a farm family age index. J. Rural Stud. 22, 485—492.
- DGIP (Directorate-General for Internal Policies), 2012. EU Measures to Encourage and Support New Entrants. In: Policy Department B Structural and Cohesion Policies. Agriculture and Rural Development. Available at: http://www.europarl. europa.eu/RegData/etudes/note/join/2012/495830/IPDL-AGRI_NT(2012
- Gay SH, Offermann F (2006): Comparing support for organic and conventional farming in the European Union using an adjusted producer support estimate. European Review of Agricultural Economics, 33, 31-48.
- Grubbstrom, A., Stenbacka, S., Joosse, S., 2014. Balancing family traditions and business: gendered strategies for achieving future resilience among agricultural students. J. Rural Stud. 35, 152—161.
- Janešek, M., Bohuslávek, J., Dumbrovsky, M., Gergel, J., Hrádek, F., Kovář, P., Kubá¬tová, E., Pasák, V., Pivcová,J., Tippl, M., Toman, F., Tomanová, O., Váška,J., 2002. Ochrana zemědělské pudy pred erozí. ISV, Praha.

References

- Václavík, Tom: PRŮMYSLOVÉ ZEMĚDĚLSTVÍ a naše zdraví (tom.vaclavik@pro-bio.cz)
- www.pro-bio.cz;
- Boardman, J., 2006. Soil erosion science: reflections on the limitations of current approaches. Catena 68 (2), 73-86.
- Kroupová Z, Malý M (2010): Analysis of agriculture subsidy policy tools - application of production function. Politická ekonomie, 6, 774-794.
- Poláková, J., Koláčková, G., Tichá, I. (2015): BUSINESS MODEL FOR CZECH AGRIBUSINESS; Scientia Agriculturae Bohemica; CULS; 46/03; p. 128-138
- Low,J., Míchal, I., 2003. Krajinny ráz. Lesnická práce, Kostelec nad Cernymi lesy.
- Nemes N (2009): Comparative analysis of organic and non-organic farming systems: a critical assessment of farm profit ability. Food and Agriculture Organization of the United Nations, Rome.
- Raggi, M., Sardonini, L., Viaggi, D., 2013. The effects of the Common Agricultural Policy on exit strategies and land re-allocation. Land Use Policy 31, 114—125.
- Sklenička, P., Janeckova Molnarova, J., Salek, M., Simova, P., Vlasak, J., Sekac, P., Janovska, V. (2015): Owner or tenant: Who adopts better soil conservation practices?; Crossmark; Journal Land Use Policy; ISSN 0264-8377, p. 257-269

Thank you for your attention