

# **Climate Change and Local Level Adaptation Strategies in Hungary**

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Antal Z., László

Institute of Sociology

Center for Social Sciences

Hungarian Academy of Sciences

# Local-level climate change activities

- In 2004 and 2005 I studied climate change activities in the United Kingdom. After returning to Hungary I created the “Climate-friendly Municipalities” research project. The aim of this project was to study the social and economic factors that act to promote or hinder local-level social resilience.

# National Statistics of carbon dioxide emissions for local authorities in the UK

„At the Local Authority level, there was a larger variation by LA with some areas estimated emissions increasing considerably, and some decreasing considerably:

- 79 LAs have experienced a decrease of more than 20 per cent during the period 2005-2011 ...
- An additional 137 LAs experienced a decrease of at least 15 per cent during the period 2005-2011.
- In another 123 LAs, total emissions decreased between 10 and
- 15 per cent.
- In 16 LAs, total emissions increased since 2005.” (Local Authority CO2 emissions estimates 2011, Department of Energy and Climate Change, 2013, p 17)

# Leicester – „A low carbon city”

- „ A city-wide partnership committed to making Leicester a low carbon city has published its second annual action plan, which sets out 76 areas of action for the next 12 months... **Over 40 local organisations from the private, public and voluntary sector have pledged their support to the plan**, which aims to help Leicester meet its ambitious target of a 50% reduction in carbon dioxide emissions by 2025 from the baseline year 1990.” (2013)

# The Limits to Growth

- “Key vulnerabilities include water resources, food supply, health, coastal settlements and some ecosystems... As the concentration of greenhouse gases increases, these impacts will become more severe and spread both geographically and sectorally. To stabilize climate emissions, they should eventually be limited to the **net absorption capacity of the Earth**, which is less than half the amount of current emissions. Immediate large-scale mitigation action is required”.
- (Joint Science Academies’ Statement of 13 Science Academies, 2008)

# The CO<sub>2</sub> absorption capacity of the Earth

The net absorption capacity of the Earth is about **2-2,5 t/capita/year**.

CO<sub>2</sub> emission is **4,7 t/capita/year** in 2010.

(Source: Global Carbon Budget 2012)

# Carbon dioxide emissions tonna/ per capita 2010

• United States	17,5	South Africa	9,2
• Canada	14,7	China	6,2
• Russia	12,2	Mexico	3,9
• Germany	9,0	Brazil	2,1
• <b>United Kingdom</b>	<b>7,9</b>	India	1,6
• <b>Hungary</b>	<b>5,0</b>		

(United Nations Millennium Development Goals  
Indicators, 2011)

# Upcoming questions for social scientists

These results, derived from natural scientific researches, raise new questions for social scientists:

- What is the role of humanity in ecological changes?
- How can we live in harmony with nature in the future?
- What kind of circumstances are helping or hindering the social resilience?

# The Climate Friendly Municipalities

- The Association of Climate Friendly Municipalities has 30 members in 2015 located in different parts of Hungary
- The homepage of the Association is:  
[www.klimabarat.hu](http://www.klimabarat.hu).

# The Climate Friendly Municipalities

- The strategies and actions had three sections:
  - the climate awareness
  - the adaptation
  - the mitigation

# The method: action research

- We used the action research method for this special collaboration: the Institute in collaboration with local councils and local residents – who formed new NGOs called “Climate circle” - have prepared their climate change strategies and worked out action plans.

# The role of climate circles

- We suggested to all municipalities to form “climate circles” with local residents who have an interest in climate change
- The members of climate circles /the power of the community
- Climate circles with the support of local governments established about 30 successful different climate programs. Most of them were part of the adaptation strategy.

# Successful climate programs

- Tatabánya – Heat and UV alarm
- Pomáz – cycle route
- Hosszúhetény – „Zengő pengő”- local currency
- Pilis – climate friendly shops
- Budapest, Hegyvidék – food market
- Szekszárd – a variety of small programs (3 000 EU/years)
- Eger - renewable energy plan

# Results of this climate programs

- Despite all the success, even in the most active municipalities there are only minor changes in the life of these towns and villages
- After ten years research I concluded that **current social and economic conditions are robustly hindering local-level social resilience**
- The climate awareness is higher now in Hungary than it was in 2005

# Results of CO<sub>2</sub> emission in the UK

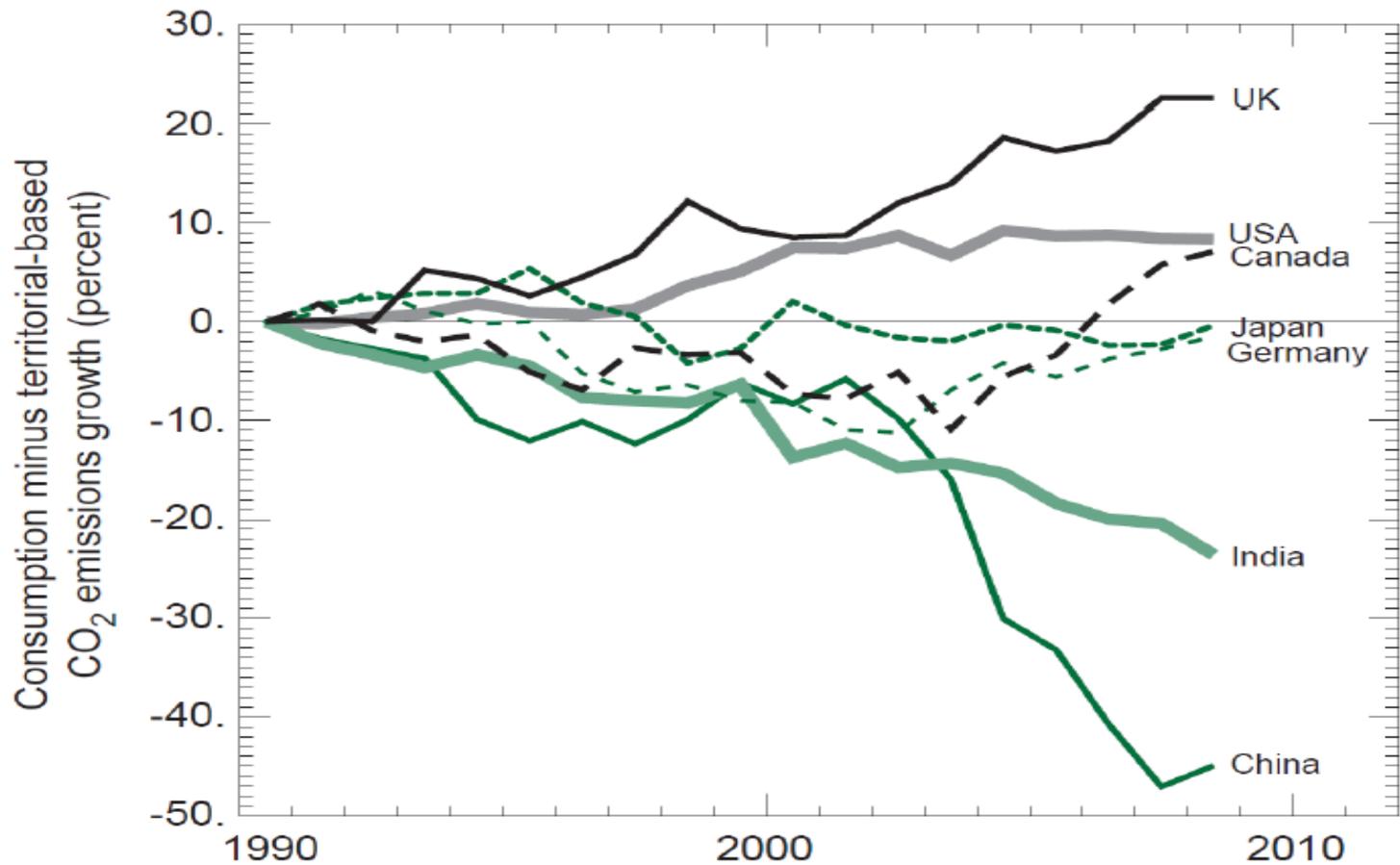
- „Figure ... presents data from the UK Energy Research Council, cited in the 2012 House of Commons Report on the subject. It shows that, while territorial emissions of CO<sub>2</sub> in the UK declined by 19 per cent from 1990 to 2008, consumption-based emissions rose by 20 per cent.” Gough, I. (2013): Carbon Mitigation Policies, Distributional Dilemmas and Social Policies, *Journal of Social Policy*, (42) 2., p 194)

# Emission - measured in two different ways

- The 'production accounting principle' is designed to quantify emissions within the borders of a given country. Under the Kyoto Protocol a nation's emissions are defined using the 'production accounting principle'. The alternative 'consumption accounting principle' method measures the total emissions embodied in the goods and services consumed by the inhabitants of the national territory in question (Bows and Barrett, 2010).

# Consumption gap in CO2 emissions since 1990: selected high-emitting countries

Figure 2. 'Consumption gap' in CO2 emissions since 1990: selected high emitting countries



Source: House of Commons Energy and Climate Change Committee. 2012: 10.

# Period of paradigm shifts

- Based on the research done in the United Kingdom and in Hungary, I have concluded that due to **climate change** - as well as further changes within the environment – such contradictions emerged that are **insolvable under current social, economic and political paradigms**. The paradigm shift is a social reality in these countries today.

# Paradigm shift in local level

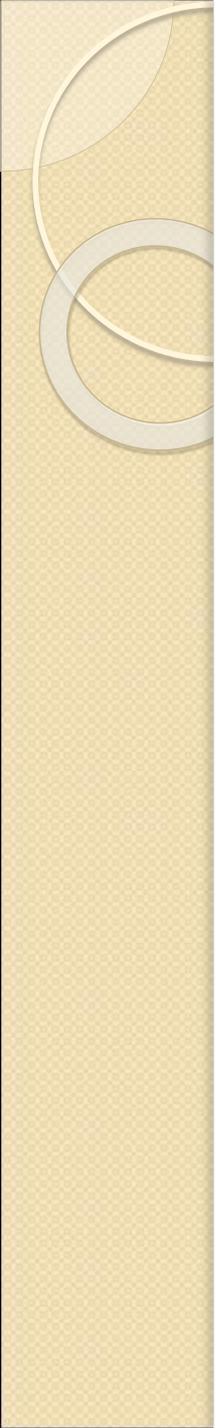
- „It is likely that local communities living under environmentally different circumstances will establish differing societal norms and values in order to ensure the survival of local communities. It is likely as well that new principles and models will use numerous parts of those principles that previous communities have accumulated. Some scientists dealing with this specific field think that in the solution to contemporary economic and ecological crises the reimplementation of traditional and religious ecological knowledge will have an important role.” (Berkes, 1999).

# The climate change and the paradigm shifts

- Numerous local-level climate change initiatives based on the **new ecological values** are already present in the UK and in Hungary and in several other countries. Mutual characteristic of these efforts are the new role of internal (psychological and religious) values, the strength of the role of local communities, local/regional self-sufficiency and harmony between the nature and the local society.

# The new form of social integration

- In some local-level communities the (old) new form of social integration work **which differs from both states and market forms. The reciprocity (net of mutual helps) is the integration form, that plays a vital role in the formation of most eco-conscious communities.** The spread and strengthening of this kind of communities could be a successful social answer to the ecological changes.



**Thank you for your attention.**