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## **CHOSEN ASPECTS OF RESTRUCTURALIZATION OF OLD INDUSTRIAL REGIONS (WITH EMPHASIS ON STIMULATION OF INNOVATIVE POTENTIAL)**

### **1. Introduction**

Nowadays it could be said that the problems of old industrial regions as well as innovation significance are classical topics of regional development. From the certain point of view it could be claimed that “older (more traditional)” problems of old industrial regions is replaced by “newer (more modern)” topic – the role of innovations in regional development. Essential difference is therefore in evaluation of the initial situation of the individual regions because the study of old industrial regions<sup>1</sup> is based on recognizing failure causes whereas the majority of outputs within the problems of innovation contribution to regional development is based on recognizing success causes by the chosen regions. Schematically it could be expressed by following questions:

- Why are the old industrial regions in such a bad condition?
- Where is the key to success of the regions with distinctive innovative potential?

On the other hand it is not necessary to define the boarder between the given problems too dogmatically because they have many common areas (and for that matter many important authors publish within both topics; among others Phil Cooke, Ron Boschma, Franz Tödling...). It could be said that the problems of de-

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<sup>1</sup> The term Old Industrial Region is not interpreted [Schrader 1998] in connection with its close industrialization phase, but it is understood as a region that is no longer able to regenerate economically or it could not develop the skill of regeneration.

creasing regions is the initial key entry to the recognition of causality of regional differences while the problems of innovations follows the solution as an applicable tool and it is considered to be a current and a key topic in increasing of regional competedness.

## 2. Theoretical basis of the problems of old industrial regions

At the beginning of this part of the article it is necessary to define what exactly could be understood with the term Old Industrial Regions (OIR). M. Steiner [1985] defines OIR as a “typical form of combination of regional and sector deterioration in post-industrial economics”. G. Gorzelak (as in Milerski) claims that OIR “are loosing regions that are on restructuralization way. These regions struggle with recession, unemployment, economical and social tension. However above mentioned definitions are only generall and have to be developed into more detail. In the expert literature<sup>2</sup> there is an agreement on following more specific characteristics:

1. It is characteristic for an OIR that industrial activities were localized there especially at the end of 19<sup>th</sup> century and in the first half of the 20<sup>th</sup> century. These activities were coal mining, metallurgical industry, heavy engineering, textile and metal industry. Boschma, Lambooy [1999] define the output of these industrial branches more generally as.

2. The basic input for other branches (e.g. steel).

3. Typical product of mass consumption (textile, cars).

- OIR are (were) typical by distinctive dominance of one industrial branch, so called monostructure. Tödting, Tripl [2004] talk about “overspecialization” and Steiner about “overrepresentation. (The end of the text will be devoted to some experts who see in recently popular problems of cluster establishment renewal of monostructure of some regions).
- Not managing the transition from Fordism to Postfordism accumulation. New regime of accumulation is based on flexibility, individualization and quality what is often in contradiction with OIR possibilities (fordism is on the contrary based on specialisation, mass and quantity). Sucháček aptly summarizes the concepts [2005, p. 35] “Traditional industrial regions represent one of the victims of the transition from fordism to postfordism”.
- OIR is distinguished by specific structures. It is mainly about a distinct inclination to agglomeration effects. Nevertheless it has to be emphasized that within OIR problems a negative role is ascribed to agglomeration effects and this is the difference between general positive evaluations of these effects on concentration in space sciences. Further specifics of OIR are worse educational structure of the population, strong representation of big firms, and hierarchical or-

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<sup>2</sup> (eg. [Cumbers, Birch, Mackinnon 2006; Tödting, Tripl 2004; Boschma, Lambooy 1999; Sucháček 2005]).

ganisation in firms. More complex factor, which is a part of everyday reality in OIR, is so called regional (local) “lock-in” that symbolizes inflexibility of surrounding and unclearness of innovative concepts.

An effort to include old industrial regions to wider typological context is more difficult than its specification. Certain variation is offered by Lash and Urry [1994] who see the main criteria in a position of industrial activities, migration and managing a transformation process into post-industrial economical regime. Authors define individual types on the level of cities and towns (what is not a fundamental problem in case of agglomerated industrial regions):

- De-industrialized towns and cities – they are based on wide industrial basis but they have not successfully mastered post-industrial transfer (e.g. so called rust-belt in the USA, Newcastle and Stoke in Great Britain).
- Restrukturalized towns and cities – they have gone through successful transformation into post-industrial economics (from global towns and cities for example New York, London, Paris and some other (e.g. Düsseldorf, Leeds).
- Post-industrial towns and cities – they have never had more than 30% of labour power in industry and nowadays they are going through a distinctive increase of significance (very often together with growing industrial sector – for example so called “sunbelt” in the USA (Houston, Atlanta), München, Edingburgh).

In the expert literature there is an absence of typology of old industrial regions itself. Cumbers and Birch [2006] explain following aspects:

- problem with defining and classification of industrial sector,
- problem with accessibility of information,
- variability of industrialization process periods (in connection with different “peaks” of industrialization in individual countries).

The same authors include in their survey following OIRs in west European countries: Great Britain (Tees Valley & Durham, Northumberland, Tyne & Wear, Lancashire, South Yorkshire, Derbyshire & Nottinghamshire, Shropshire & Staffordshire, West Wales & The Valleys, South Western Scotland), France (northwest - Picardie, Nord Pas-de-Calais, Lorraine), Germany (Ruhrgebiet, Saarland), Spain (Basque). Following picture represents a schematic layout of above mentioned OIRs.

From the point of view of modern scientific approaches it is not sufficient to define given problems and causal relationships but it is necessary to find the tool of the positive change process. Thanks to this fact the topic of old industrial regions is not separated from the possibility of their restrukturalization in the expert literature. Restrukturalization of an old industrial region can be understood as a complex process of regional chnge with the aim of reinforcement and recovering of regional competedness. In the profile of general tendencies of old industrial regions restrukturalization it is necessary to bear following (problem) aspects in mind.



Fig. 1. Old industrial regions

Source: [Cumbers, Birch 2006].

- Individual OIRs do not come out from the same position. Externally sensed structural problems of a region are often the only identical aspects because there are differences in their conditioning factors and complex geographical characteristics.
- Process of restructuralization of individual OIRs is influenced by different development context (particularly the influence of activities generated by national level of individual states.) P. Ache [2006] notes the difference in development of OIRs in Great Britain under the neo-liberal model and in Germany within social democratic supporting strategy.
- Trajectory of OIR development can be fundamentally different. Some regions within their restructuralization effort rely purely on maintaining the position of industry (reindustrialization) and other OIRs go through a complex process of a change where the economic structure is diversified with distinct increase of tertiary and quaternary sectors (neoindustrialization).

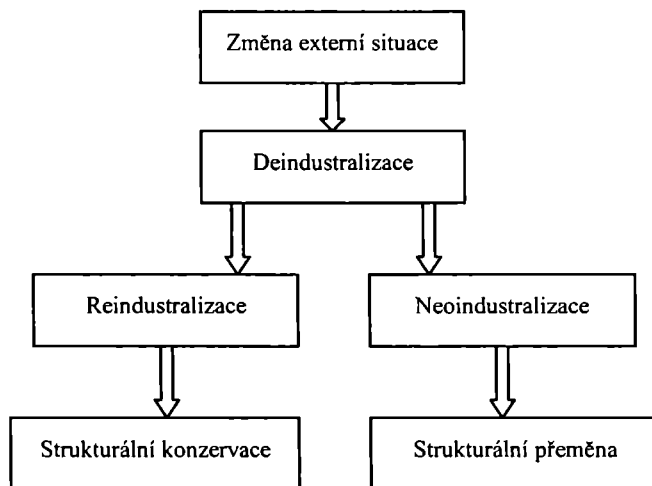


Fig. 2. Trajectory of OIR restructuralization development according to R. Hassink  
 Source: Přeloženo a upraveno dle R. Hassink [2005].

### 3. Specifics of old industrial regions on the example of Ruhrgebiet

In more detailed approach it is necessary to focus on chosen specifics of old industrial regions more deeply. With regard to relatively heterogeneous group of these regions it is better to chose for more detailed study one of them, in our case it is Ruhrgebiet. However the question is: to which extent the specific of chosen OIR could be generalized for the whole group of similar regions. It is a classical problematic question of recent regional science where on one side there is no absolute conviction over “generalization” of case studies, on the other hand however excessive empiricism of some authors is criticized (for more see e.g. *Locality debate*, [Blažek, Uhlíř 2002]). During writing the part devoted to OIR Ruhrgebiet we tried to take these ambivalences into consideration to the largest possible extent.

One of the biggest old industrial regions in the world is German Ruhrgebiet that belongs to the federal state Nord Rhein-Westfalen. The Ruhrgebiet region is defined on the basis of activity of administrative field of Regionalverband Ruhr that is the oldest German regional union established in 1920 (under the name Seidlungsverband Ruhrkohlenbezirk).

According to this plan Ruhrgebiet consists of four regions (Wesel, Recklinghausen, Unna, Ennepe-Ruhr) that are formed by 42 communes and 11 independent county towns and cities. The biggest town/cities are Dortmund, Essen, Duisburg, and Bochum. On the whole the region covers an area about 4.434 km<sup>2</sup> (13% from the entire area of Nordrhein-Westfalen) and about 5,3 million of people live there [RVR, 2007].

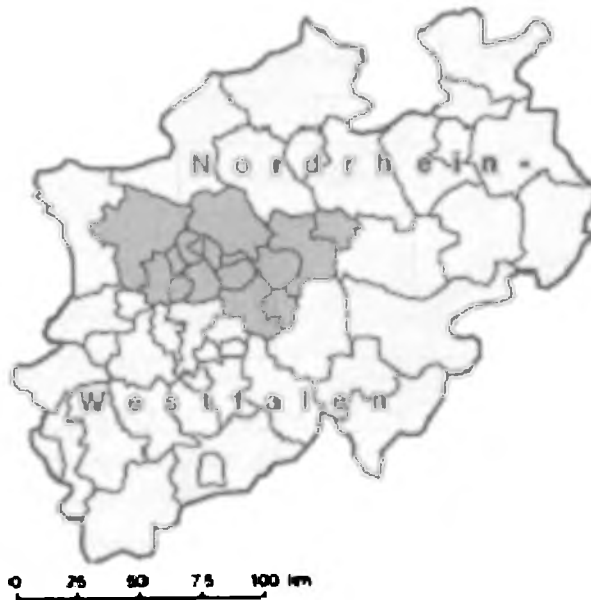


Fig. 3. Regions and independent county towns and cities of Regionalverband Ruhr  
 Source: Převzato a upraveno podle [Faust 1999].

### **Institutional specifics of Ruhrgebiet in the context of lock-in concept**

As it was already mentioned above a typical problematic aspect of OIR is its institutional surrounding that is characterized by Rommelspacher [1999] as “sklerotisches Milieu”. The lock-in concept is used in connection with OIR in literature.

“Lock-in” concept is developed into more detail especially in works by R. Hassink (e.g. [Hassink 2005]; a translation in Czech language was published in work by J. Sucháček [2005] – Institutional Economic Rigidity). It is about the existence of barriers, in the wider meaning of the word, that hinder the development tendencies and innovative concepts in OIRs. M. Schwarz [2006] with reference to work devoted to Ruhrgebiet by Grabher [1993] defines three types of lock-in:

#### **a) Functional lock-in**

Functional lock-in is a certain level of mutual functional dependence between regional firms while as a consequence of this high “net” their flexibility could be lost and finally it could lead to limitation of their own deciding abilities about further direction of the production by a given firm. Similarly structured constellation of inter-regional links between firms was typical for Ruhrgebiet. Negative aspect of the lock-in concepts appeared mainly by local small and middle enterprises whose production was orientated only to the needs of big firms such as Thyssen, Krupp, Hoesch, and so on. Certainty of sale limited developing of own activities in research and development. An effort to generate technological innovations and sup-

port innovative processes and products was hardly noticeable or as Schrader [1998, p. 451] states: these activities were considered by suppliers to be “redundant”. This approach, or in other words this perception of reality, created an essential barrier during absorption, integration and use of external knowledge and as a consequence it led to restriction of endogenous educational and development potential. It is necessary to add that close and long-lasting contacts of small middle firms to relevant departments of big firms did not force these small firms to realize their own marketing much less to create new distribution nets.

#### **b) Cognitive lock-in**

Too strong social “over embedness” (einbettung) of the main economic, political and social participants seems to be an eliminating factor for relevant interpretation, or absorption of innovative thoughts, potentials and radical technological changes existing “outside” regional development trajectories. Common orientation and establishment of generally accepted “common language” as a consequence of long-lasting and temporally steady personal relationship between participants was characteristic for the situation in Ruhrgebiet. This homogeneity was reflected in united perception of the world (“Weltsicht”) that hindered the reorganisation already at the beginning of structural crisis.

False interpretation of long-lasting demand for steel proved as especially wrong interpretation. This mistake caused that there was strong belief that the decrease of demand at the beginning of 70s was not a signal of a long-term tendency but that it was only a short-term deviation in the long term steady sector. Investments into traditional production branches were preferred instead of support for sectors with high innovative potential. The future of the region was in ideas of key participants outlined as a modernized version of old industrial past. This fact is documented by Wissen [2001] on statement spoken by Minister for Economics in Nord Rhein Westfalen, H. L. Reimer in 1979 who said: “Not only today, but also tomorrow we cannot give up and we have to accept... that Ruhrgebiet stays an energetic and economic centre of Federal Republic, and I am convinced about that. Simply because of the fact that there is local black coal. In the future it will be about meaningful use of coal as a multilateral raw material”. Crisis peaking in 1987 showed that the strategy of structural politic aimed at reindustrialization was incorrect.

#### **c) Political lock-in**

In many cases existing industrial structures in the regions are supported on one hand and on the other hand the support goes to regional development trajectories by co-operative relationship between regional participants. It was not any different in 70s in Ruhrgebiet. These close, often on informal links based interest “self-maintaining” coalitions (Interessenkoalitionen) formed by big firms, unions and politicians in all levels actively stopped the creativity, innovations and more generally speaking it stopped restructuring of the given area [Schrader 1998]. Their effort was aimed at maintaining the status quo that guaranteed them a dominant position in the region.

#### **4. Initiatives aiming at breaking the lock-in in Ruhrgebiet**

Structural crisis had its peak at the beginning of 1987 when big employers of the region started to have problems [Faust 1999]. As a reaction to this fact the region underwent the transformation from reindustrially outlined strategies to neoindustrially decentralized approaches. In the same year the local government initiated “Program of the the mining region future” (Zukunfts initiative Montannregion – ZIM) that was later on widened into “Program of the future of Nordrhein-Westfalen (ZIN).” Ruhrgebiet belonged to six so called ZIN regions. This structural politics of regional character had according to Blotevogel (1997, in: [Faust 1999]) four main goals:

- a) improvement of special co-operation between municipalities and regions,
- b) support of vertical co-operation between individual administrative levels,
- c) strengthening of horizontal co-operation between individual sector politics resulting in systematization of regional politics,
- d) support of positive synergic effects through functional co-operation between regional participants.

Main priorities of both programs [Funder 1996] were:

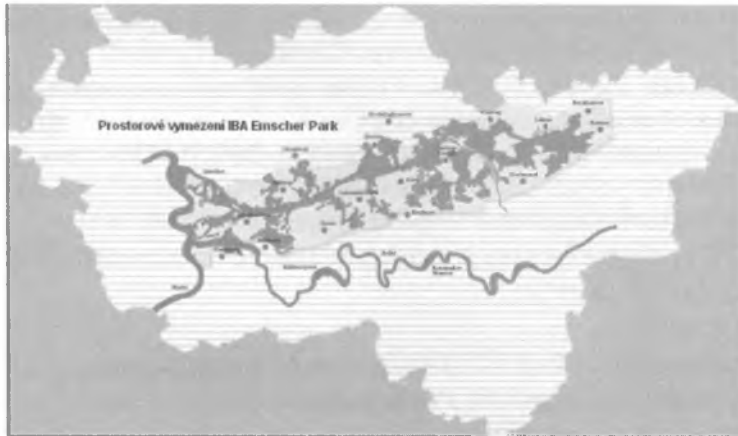
- support of innovations and technologies,
- support of prospect educational branches,
- steps to establishment of new jobs,
- construction and modernization of infrastructure,
- improvement of environment and energetic situation.

A development agency IBA GmbH was established by Federal government as a precaution within ZIM and the agency operated a project called “International building exposition Emscherpark” (Internationale Bauausstellung Emscher Park, [Rumpel 2005] that identified itself as a “Workshop for the future of the industrial regions”. The project was limited by ten years of its existence. Its aim was to start a process of a complex image change from a stagnating mining region to a modern (non-industrial) region focused on tercier and quarter [Wissen 2001].

The main topics were [IBA 1999]:

- natural park Emscher,
- ecologic revitalization of water system of the river Emscher,
- work in the park,
- construction and planning and social impulses for the development of the settlement,
- living in a colony – new building and regeneration,
- industrial culture and tourism,
- art in the natural park Emscher.





**Města v prostoru IBA Emscher park**

*Bergkamen, Bochum, Bottrop, Castrop-Rauxel, Dortmund, Duisburg, Essen, Gelsenkirchen, Gladbeck, Herne, Herten, Kamen, Mülheim an der Ruhr, Lünen, Oberhausen, Recklinghausen, Waltrop*

**Počet obyvatel:** cca 2 mil.

**Celková plocha:** 784 km<sup>2</sup>

*z toho:*

**Zelené plochy** 43 % (337 km<sup>2</sup>)

**Průmyslové plochy** 11%

**Brownfields** 8%

**Ostatní** 38%

**Objem celkových investic:** cca 5 mld. DM

**Rozloha:** Sever – Jih 18 km

Západ – východ 80 km

Fig. 4. Spatial bounding of IBA Emscherpark with the basic characteristics

Source: www.iba.nrw.de.

Planning concept of prospect incrementalism could be called as highly innovative approach that was applied within the realization of the IBA project. The necessity of innovative approach in the process of regional development planning was caused by existing institutional constellation (see above) and by specific condition on the landed estate market and also by the size of the interest area where it was not politically possible to push a complex development concept through [Siebel, Iber, Mayer 1999]. Decline of traditional production branches caused the end of production in many firms and as a consequence it caused birth of many brownfields. Because there was no demand for this land the local government agreed in 1980 on contract with the Society for the Development of the Land (Landentwicklungsgesellschaft – LEG) whose purpose was to accomplish the transactions of Land Office within the revitalization of industrial areas [Jínová 2004]. The

problem was that the lands were spread around the whole region and this called for a specific approach to the solution of its revitalization.

Ganser, Siebel, Sieverts (1993, in: [Dühr 1998]) define prospect incrementalism as a series of small steps and projects that have their common vision that connecting them mutually (similar in e. g. [Sinning 2002]). This planning strategy prefers for example projects to programs and in the same time it prefers medium-term precautions to the long-term program structures.

Giese [2001] summarises the principles of prospect incrementalism as follows:

- planning through projects,
- process orientation,
- informality and horizontal self-management of the participants,
- openness to external impulses,
- definition of the quality criteria,
- competition and planning as an alternative.

Within IBA Emscher Park project about 120 projects were realized with the overall amount of circa 5 milliards in German Mark. Many projects were of highly innovative character as for example Landschaftspark Duisburg-Nord [Rumpel 2005] with the entire area of 200 ha. This park was established in the area of former blast furnaces of the firm Thyssen that were closed in 1985 and it is a unique interconnection of the nature and the industrial heritage. At the same time 17 technological centres (e.g. Science Park Gelsenkirchen) and 3000 new flats were built and many industrial monuments emerged. IBA projects created infrastructure not only for destination (“Route der Industriekultur”) and cultural management but also for attraction of investments (see e.g. [Dege 2006]). Although the project was not without problems especially within the topic “Work in the park” [Wissen 2001] it could be rightly regarded as a highly inspirational project in the context of old industrial region restructuralization.

## 5. Conclusion

Resent science considers as one of the deciding factors strengthening of regional competitiveness of innovations, or a process of their generating, transfer and application into activities of a business sphere as well as into activities of a public sector (for more see e. g. [Rumpel 2005]). Significance of innovationally orientated planning is emphasized due to this fact in current expert discussion about the process of old industrial region restructuralization (e. g. [Tödting, Trippel 2004]). In the case of OIR it is necessary to emphasize the topics that in resent state cause the problems. It is mainly support of diversification of an economic structure (support of new cluster initiatives), support of establishment of new business subjects, attraction of foreign investors with high added value, infrastructure for origination and transfer of innovations into reality (Science Parks, Centres for Technology

Transfer, Business Incubators), platforms for co-operation between a research and a business sphere (Poles of Excellency), stimulation of regional networking or support of soft localization factors. On the example of the old industrial region Ruhrgebiet we have tried to describe in general features the process of OIR restructuralization; however this given outline is only of partial character. Nevertheless we are convinced that given examples can have some generalizable testifying value for interpretation of the problems of restructuralization in the conditions of the Czech Republic.

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# **WYBRANE ASPEKTY RESTRUKTURALIZACJI STARYCH REGIONÓW PRZEMYSŁOWYCH (Z NACISKIEM NA STYMULACJĘ POTENCJAŁU INNOWACYJNEGO)**

## **Streszczenie**

Niniejsza praca skupia się na problemie starych regionów przemysłowych (SRP). Głównym celem artykułu jest podsumowanie podstawowych koncepcji teoretycznych dotyczących rozwoju starych regionów przemysłowych. W pierwszej części artykułu przedstawiono ramy teoretyczne rozwoju SRP (np. przyczyny występujących różnic), w dalszej części zaś zaprezentowano próbę opisu innych cech charakterystycznych starych regionów przemysłowych, na podstawie doświadczeń praktycznych okręgu Ruhry (Ruhrgebiet). Końcowa część pracy poświęcona została procesom restrukturyzacji SRP ze szczególnym uwzględnieniem aspektu wspierania środowiska lokalnego podejmującego działania innowacyjne.