

## Chapter 5

# An attempt at preventive action in the transformation of coal-mining regions in Germany

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### Introduction

Regional structural policy (*Strukturpolitik*) – a cross between sectoral adjustment or cohesion policy and industrial or regional policy – is a very German concept. Regional and sectoral structural change cannot be viewed independently of one another, as industries are typically not evenly distributed across the regions. This applies especially to the lignite and hard coal areas of Germany and Europe, which are concentrated in specific regions. For example, for many years, the hard coal industry in the Ruhr area and the Saarland, and lignite coal in the three lignite-mining districts,<sup>1</sup> were connected environmentally, culturally and economically with their respective wider regions. The phasing out of coal will bring structural change to the regions affected. Depending on the social and political model, the state will step in to support the regions through structural policy interventions. Structural policy cannot (and will not) prevent structural change, but it does provide a framework to manage its consequences.

This chapter discusses Germany's experiences with structural policy focusing on the Ruhr area (but drawing also on the lessons of other regions) and identifies developments in structural policy and the positive and negative impacts they have had. In the following, the aims, objectives and limitations of regional structural policy are first discussed and the functioning of structural policy in Germany explained (section 1), before tracing the structural changes taking place in the Ruhr area (section 2). The third section describes the forthcoming challenges in opencast lignite mining areas in Germany, especially in remote Lusatia, next to the Polish border, and asks if structural change could be anticipated by action in advance. The differences in the requirements of shaping structural change in lignite coal areas, in contrast to those in hard coal areas, are discussed. The main difference is that change this time is not market- but policy-based. In the case of lignite, a lack of competitiveness is not the reason for the phase-out, as happened with hard coal, but political decision-making processes: the decision to phase lignite out of the energy source mix has been made by elected representatives in order to achieve climate policy objectives. We do not discuss this decision as such, but illustrate the process as an example of shared public responsibility for the areas affected. The end of mining and power generation from lignite needs to be accepted by shareholders and other stakeholders alike, and chiefly the unions, in order to facilitate

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1. In Germany there are three major lignite districts: the Rhenish coal-mining district in North Rhine-Westphalia; the Lusatian coal district in Brandenburg and Saxony; and the central German coal district (around Leipzig) in Saxony and Saxony-Anhalt. A further smaller area – surrounding Helmstedt – closed down in 2016.

the perspective offered by advanced structural policy. As will be pointed out, in the Ruhr this approach was applied too late; furthermore, advanced structural policy is also more cost-efficient in the long-run.

In the last section, some points relevant both to the funding level and the local implementation level are presented.

## 1. The aims, objectives and limitations of regional structural policy

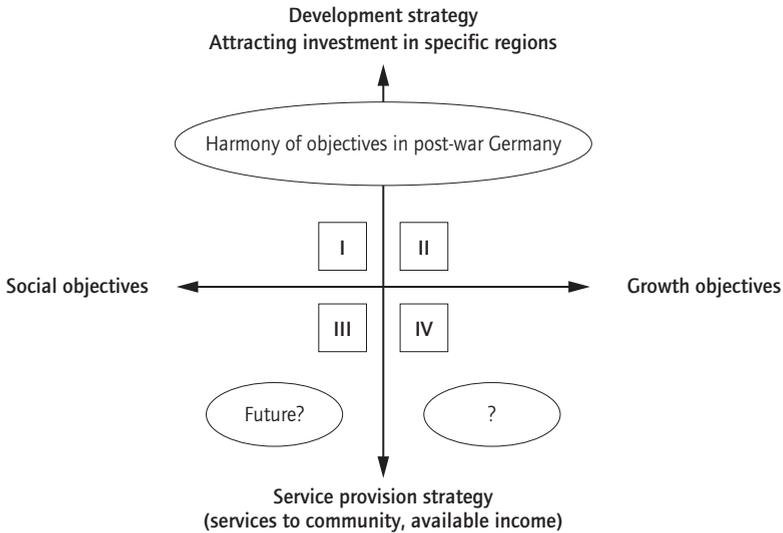
Structural change is generally understood as a change in the structural composition of an aggregate value (e.g. gross domestic product (GDP) or the workforce). From a sectoral point of view, it includes changes in the structure of industries while, from a regional perspective, it refers to shifts between individual regions.

Regional structural policy overlaps with other political topics. It is, therefore, used as a synonym for terms such as regional policy and regional economic policy (e.g. Fürst *et al.* 1976: 4; Eckey 1995: 815) and cannot strictly be separated from other policy areas. Regional structural policy has traditionally pursued the goal of balanced regional development. In Germany, securing equivalent living conditions across the federal territory (*Ausgleichsorientierte Regionalpolitik*) is enshrined in the constitution, making it a legal requirement. Article 72(2) of the Constitutional Law confers on the federal authorities the requirement to act or legislate 'If and to the extent that the establishment of equivalent living conditions throughout the federal territory or the preservation of legal or economic unity in the national interest require regulation by the federal law.' Article 106 of the Constitutional Law, which contains a provision on the financial equalisation of federal states in the event of imbalanced development, also affects the regions. Germany's Regional Planning Act similarly takes a position, with Section 1(2) requiring the establishment of 'Similar standards of living in all regions'. However, this position has been revised in one respect. After the unification of Germany, Article 72(2) of the Constitutional Law was changed from a position reflecting the *uniformity* of living conditions to one of their *equivalence* (e.g. Eickhof 2005: 2; Hahne 2005), creating greater scope for interpretation and action. It is, therefore, not a question of having the same living conditions but ones that are equivalent.

A key pillar of regional structural policy in Germany is the joint federal/*Länder* Taskforce for the Improvement of Regional Economic Development (*Gemeinschaftsaufgabe für regionale Wirtschaftsförderung*), which was introduced in 1969 for the purpose of coordinating the various levels involved in structural policy (federal, state and local government). The policy works by providing incentives to encourage investment in certain regions. As part of this policy to redirect investment, attempts have been made not only to divert investment in general towards structurally weak regions, but also to concentrate it there on particular contributors to growth (Becher and Rehfeld 1987). Since the 1980s, this policy has been expanded – as part of a policy of relying less on large corporations – by targeting the development of start-up and technology centres as well as networks between universities and research institutes.

The goal of balanced regional development towards which regional structural policy has been striving applies, as shown in the diagram below, either to socio-political or to growth objectives (along the horizontal axis). Regional structural policy can, therefore, be explained in both economic and socio-political terms.

Figure 1 Regional structural policy aims and strategy



Source: Gärtner 2009.

The socio-political objective (quadrants I and III in Figure 1) is the guarantee of equivalent living conditions for all citizens in all regions of Germany. When the focus is on growth (quadrants II and IV), on the other hand, the key question is in which region can the best overall economic returns be achieved. The neoclassical approach is that balanced regional development will ultimately be achieved on its own, i.e. growth in weak, backward regions will be stronger in the future, so investments in these regions would consequently produce the best overall economic effects. According to this school of thought, structural policy aimed at territorial equalisation accelerates the natural convergence process (Frey and Zimmermann 2005: 6) and is thus growth-oriented.

From the perspective of growth, another reason for establishing an equalisation-oriented structural policy is that the use of all potential resources in all areas helps achieve an optimal result for the national economy as a whole. Regional structural policy has, therefore, traditionally been focused on overcoming the urban-rural divide in the name of economic growth and social equality. Consequently, the structural development of the Ruhr area, as an old industrial agglomeration, has traditionally not been part of the focus of the regional structural policy of post-war Germany.

However, since the unification of West and East Germany – but also before this, taking the example of the Ruhr area and that of other old industrial agglomerations – a new territorial perspective has fallen within the scope of regional policy and the

balance between growth and equalisation has had to be reconsidered. This has also been caused by an increase in international economic integration (in general terms known as globalisation) and by a stronger approach towards neoliberal market theory associated with the acceptance of regional inequalities and of differentiated growth patterns in agglomerations.

Generally speaking, as shown on the vertical axis of Figure 1, there are theoretically two main approaches to organising a regional equalisation policy. The first is to attract investment into structurally weak regions or to support the development of companies already operating in the area (development strategy: shown in quadrants I and II). The second is the provision of long-term support and services for people living in weaker areas and the subsidisation of central infrastructure or services of public interest, such as shops, education, health services, etc. (service provision strategy: quadrant III). Up to now, it is the development strategy approach that has dominated. As of today, however, the question remains open of whether – in respect of remote, old industrial areas like Lusatia (which is currently phasing out opencast lignite mining) – a service provision strategy (quadrant III) would be more suitable and, if so, what it would look like. If balanced regional development does not necessarily produce the best overall growth, it may be reasonable, in terms of cost efficiency, to shift to a policy of fostering development only in those areas with particularly high competitive potential (quadrant II) whilst continuing to provide long-term support for weaker areas (quadrant III). Quadrant IV is not particularly realistic since a service provision strategy will probably not by itself lead to strong economic growth in a region (hence the question mark adjacent to quadrant IV in Figure 1).

According to Lammers, regional policy is only worthwhile in national economic terms if ‘The transfer it creates in the target regions produces economic returns in excess of the losses in those regions from which resources are removed’ (Lammers 2004: 624). In this regard, a new understanding of equal living standards may be discussed from the proposition of increased focus on the quality of life experienced locally (Blotevogel 2006; Hahne 2005: 258). ‘Equal living conditions,’ according to Hübler, ‘Are, however, not simply a question of jobs in industrial locations or clusters: the term “living conditions” covers a far broader set of factors’ (Hübler 2005: 56; own translation).

Even so, regional structural policy has not, thus far, followed approaches that are appropriate for weaker peripheral regions, having focused instead more on quality of life and civic society. Rather, there has been a debate about the extent of the concentration of resources on regions with growth potential. Since the late 1990s, there has been a trend towards adopting new approaches and a greater focus within structural policy on growth. It is impossible to assess how fundamental this change turns out to have been in practice, or whether, in the long term, it will reduce or increase regional disparities (Blotevogel 2006). A focus on growth cannot be justified solely on the basis that weak and peripheral regions will benefit from a general growth-oriented policy or from one oriented towards metropolitan hubs via territorial spread and trickle-down effects.

There is, however, less discussion about what to do about those regions which do not have growth potential. The concept of Aring (2010), for instance, can be seen as

exceptional in suggesting that regions should decide for themselves if they want to be 'guaranteed' by the state or at federal level, or if they want to become 'self-responsibility spaces'. In the latter case, a minimum level of support would be maintained, with additional services organised by the citizens themselves as well as by companies; this, in turn, would grant the regions and their populations a great deal of creative freedom to accept the offers they preferred. In contrast to Aring (2010), Kersten *et al.* (2015b) suggest a new joint federal/*Länder* taskforce, focusing on the improvement of those services which are of general interest in weak regions, and organised on a public (or civil society) basis, rather than on regional economic development. To this end, a constitutional amendment would need to be implemented on top of the tasks already jointly assumed by the federal and *Land* institutions.

Limiting regional development possibilities and, at the same time, implementing an unlimited central growth policy does not appear to be useful, particularly for a decentralised country like Germany. Moreover, the cumulative effects of this may lead to social inequalities among regions which had, so to speak, been left to their own devices and receiving no support to encourage development. Such inequalities have costs for the whole of society. Another aspect, which is often neglected, is that regions with highly-developed infrastructures, above all in the education sector, also develop the talents, skills and resources from which growth centres in particular benefit – especially through migration: 'A competitive economy should not disregard the potential of this.' (Hahne 2005: 259; own translation)

## **2. Lessons from structural change in the Ruhr area**

Traditionally, regional structural policy was introduced in order to support remote rural communities in agricultural areas. The decline of the coal industry since the 1960s was the first time that an industrial agglomeration had been affected by economic weakness. In this case, regional policy encompassed not only social, labour market and pension policies, but also energy policy. This has to be viewed against the background of coal production, as a domestic source of energy, being of high importance in post-war Germany. As a result, the economy of the Ruhr area has always been heavily dependent on political decision-making (Dahlbeck and Gärtner 2018).

With around five million inhabitants spread over an area of 4,400 km<sup>2</sup>, the Ruhr area is one of the most densely-populated regions in Europe. In the mid-1950s, the number of employees in the industry peaked at 500,000 at which point every tenth inhabitant of the Ruhr area was employed in mining. This shows the immense importance of mining to this region and the families living there, especially considering that the traditional 'sole breadwinner model', in which men were destined to pursue employment for the family income while women were responsible for the household and raising the children, was still prevalent. From then on, however, the significance of hard coal began to decrease.

The population of the Ruhr area had grown to more than five million in a very short time because of industrialisation. This made the area meaningful both economically,

with a large sales market for new businesses, and also technically because it has established one of the densest research and university network landscapes on top of an infrastructure geared towards technological advance. The Ruhr area therefore enjoyed conditions which were very different to those in rural lignite mining districts in Germany or abroad. This also applies to the value chain present in the coal and steel industry, which facilitated the growth of new and distinct sectors. Starting in the 1970s, for example, the coal and steel industry gave birth to the environmental sector in the Ruhr area as a result of stricter environmental standards. This industrial sector is still present in the region today although the coal and steel industry is no longer relevant (Nordhause-Janzen and Rehfeld 1995, 2012; Pizzera 2012). It should also be emphasised that the large number of unionised workers (at least in the past) formed a strong political lobby.

Various governance structures were established to manage the structural policy measures that were introduced. The Ruhr Property Fund and Business Metropole Ruhr GmbH were, for example, established in respect of the joint internal and external marketing of the Ruhr as an economic region. However, in spite of such initiatives, including also the relocation of the planning authority from the federal state to the Ruhr Regional Association, the establishment of a broad technology centre and the transfer of infrastructure and cluster management structures, there is still no political voice that speaks for the Ruhr area and is capable of developing common strategies at federal state level (Dahlbeck and Gärtner 2018).

At the onset of the crisis, various different levels of policy-makers sought to stabilise the demand for coal. Such initiatives as were attempted included the provisioning of tax subsidies for power plant operators and the steel industry using domestic hard coal and granting financial resources for social compensation in case lay-offs were necessary in the iron and steel industry (Goch 1996: 382-386; Dahlbeck and Gärtner 2019). With the introduction of the *Kohlepfennig*, or the penny for coal, in 1974, a special consumer tax on electricity subsidised sales of domestic hard coal although this was overturned in 1994 by the Federal Constitutional Court.

Many of the policies were aimed, and over a long period of time, at supporting established large coal and steel companies. The effects of this are still recognisable today, with the present focus on large companies and the resulting insufficient development and level of support for smaller companies being very much the result of past policies. This has hindered structural change at an early stage, particularly because these large companies themselves often actively blocked the further development of the region through what was known as *Bodensperre*, which can be loosely translated as a 'land lock': for a long time, much of the mining land that became vacant was owned by the mining companies who refused to make it available to investors in order to block efforts by new companies to relocate in the region (Bömer 2000).

Furthermore, it has to be mentioned at the outset that the regional development of the Ruhr area has been very costly: in addition to the subsidies for coal production, a substantial amount of funding has flowed into the Ruhr area over the last sixty years. It is impossible and, at the end of the day, unnecessary to judge whether the level of

funding has been too high. Nevertheless, the efficiency with which those funds have been used may be viewed very critically, especially with regard to the long-term focus on large companies.

The development of the region's economy was successful, above all, in that it prioritised a focus on regional networks, the introduction of regional dialogues not only with shareholders but also stakeholders (workers, unions, etc.) and the strengthening of potential from within the region.

Consequently, the significant support which has been provided for the region has a firm context within the specific features of Germany's social market economy, with its social partner model and, in addition, a relatively supportive social system compared to other countries. We should therefore not lose sight of the contribution made during this period by the relatively full cash balances in the welfare system (prior to German unification and the demographic shifts). Germany's relatively supportive welfare system, compared to other countries, made it possible to be generous and to facilitate the absorption of the social consequences of the structural change involved with the decrease in employment in hard coal in ways that were socially-responsible, e.g. via early retirement schemes. This meant that social stability in the Ruhr area was largely maintained, while the slow, heavily-subsidised, phase-out of hard coal prevented structural upheavals.

For mining employees, due to legal and collective bargaining regulations, early retirement does not have a significant financial impact. Even today, under specific conditions, miners can retire at the age of 50 owing to their physically demanding work. Of course, the outcome of such a policy was the stabilisation of the quality of life of the workers affected.

Furthermore, due to the demand effects of higher pensions, the early retirement policy also stabilised local economies. However, it did not sufficiently fuel industrial recovery and neither did it lead to a self-supporting upturn in the regional economy. This has affected the northern Ruhr in particular because of the later onset of structural change. In the southern Ruhr, the loss of coal and steel was compensated more strongly due to the expansion of the universities and the successful establishment of several technology centres. In some areas in the southern Ruhr, a new urban quality has subsequently emerged, with high-quality services and cultural centres. In the northern Ruhr, on the other hand, multiple problems have combined with a compound effect on an already difficult situation. These include above-average unemployment rates, lower employment rates, higher income poverty, higher percentages of people receiving social benefits, a higher occurrence of health problems, a lower level of education, etc. (Bogumil *et al.* 2012; Schröppler *et al.* 2017; Neu and Dahlbeck 2017). This spatial divide is probably the major weakness of the Ruhr area with regard to its economic, social, environmental or even health aspects. Unless targeted action is taken in these areas, districts in the northern Ruhr are at risk of becoming permanently deprived economically. These districts are currently still 'stable' as a result of the relatively high pension payments to former coal and steel workers. However, it can be assumed that the pensions of the next generation will not be this high since pension entitlements are lower as a result

among other things of lower wages and longer periods of unemployment (Dahlbeck and Gärtner 2018).

One important component of the Ruhr's regeneration process has been the redevelopment of former industrial sites, with one such example being the International Building Exhibition Emscher Park, a derelict and highly contaminated part of the Ruhr, which took place between 1989 and 1999. This was the last major structural, or rather regional, policy programme specifically for the Ruhr area. In addition to the renaturalisation of Emscher Park, a process which is still not yet complete, the focus here was the transformation of old industrial buildings into places of culture, art, recreation or even residential schemes. A great deal of success was achieved, making the Ruhr area more attractive as a tourism destination and enhancing the regional identity of its inhabitants, although some objectives, such as the preservation of old industrial buildings and turning them over for new uses, were over-ambitious and rather less successful (Goch 2011: 70–71; Arndt *et al.* 2015: 109–110). Nevertheless, IBA Emscher Park was innovative in both its form and its purpose. Here, socio-ecological claims were established and implemented within a regional policy programme for the first time – an important structural milestone – while the value of the region's industrial and cultural heritage was specifically acknowledged. It also contributed to environmental renewal as a result of both the rebuilding of the Emscher river system and the expansion of Emscher Park. The industrial monuments built here made it possible for the Ruhr area to be successfully awarded the title of Cultural Capital of Europe in 2010.

Rehabilitated industrial buildings often serve as backdrops for new cultural venues and there is a value that may be gained as such. However, such a structural change has mainly created service sector jobs in the creative industries. Lower demand for labour in manufacturing or the heavy industry sector cannot be compensated entirely by the creation of new jobs in the service sector and in the creative industries in all regions. In addition, salaries in the service sector have not increased to the same extent as in the industrial sector. This is mainly because rising wages – at least in the case of private companies in the service sector – are usually financed by increases in productivity and, on average, productivity gains are lower in the service sector than in manufacturing. Even though deindustrialisation has contributed to an improvement in the quality of life, individual employment biographies have become fractured because former industrial workers only partly fit the requirements of the new service industries. This also means that, nowadays, there are fewer people working in manufacturing occupations in the Ruhr area than there are even in the rest of North Rhine-Westphalia.

Consequently, it is clear that manufacturing sectors in the Ruhr area in recent years have undergone very distinct development paths, building on regional networks where present and visible. This is demonstrated, for example, in the IT and microsystems technology sector in Dortmund, where the establishment of a technology park has enabled these two technology fields to develop. Promising cluster structures can also be found in logistics and waste management in the Ruhr area (Rehfeld and Nordhause-Janzen 2017: 244).

### **3. Acting preventively with a view to assisting peripheral regions where opencast coal mining still takes place**

It is possible that the decline of a region may be exacerbated by stable, consensus-oriented institutional structures (Grabher 1990; Granovetter 1973). In some cases, dominant industries and companies are powerful enough to exert an influence on policy-making, one notable example being the introduction of the *Kohlepfennig* which subsidised German hard coal to maintain its competitiveness.

Strong industrial identity and clinging on to traditional structures can lead to a situation in which change is prevented in the short-term despite it not being stoppable in the long-run. This may be particularly detrimental to those sectors and regions that do not have the power to influence national and international policies and related regulations to their own benefit over time, or with which the harmful effects (e.g. climate damage resulting from lignite coal-fired power generation) can be clearly and easily associated. It makes more sense to accept and embrace change at an early stage than to fight it. To gain such insights, a debate must be held with all shareholders and other stakeholders.

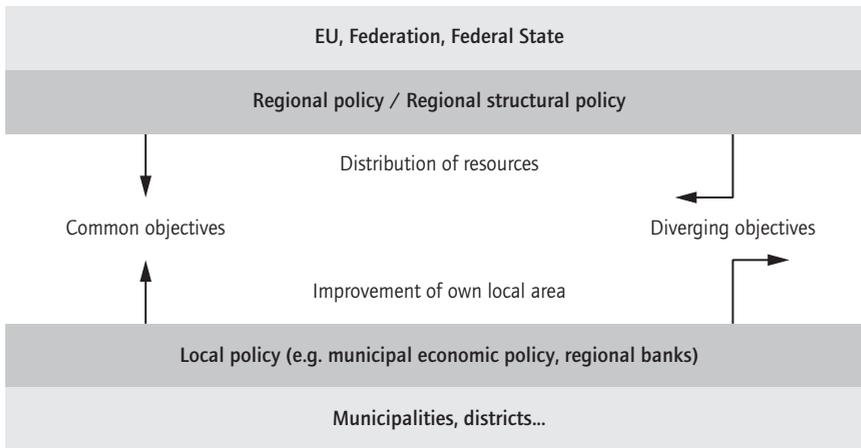
#### 3.1 Conflicting interests at different levels

However, there may of course be conflicting objectives: if an industry and, as a result, a region in which that industry occupies a significant position are in decline, regional policy-makers are primarily concerned with the development of the region, e.g. by paying subsidies for resettlement. It is, above all else, about supporting the shareholders and employees of predominant industries because, in established sectors, good wages are often paid while returns are high. This has to be viewed against the background of regional structural policy being multi-level and extending down from the EU, state and federal levels to the municipal level. In Germany, access to the lower level (for example) is limited for the higher levels due to local self-government being guaranteed by the constitution. This became recently evident in the context of Germany's energy transition and the attempt to install new high voltage cables to bring wind power from the north to the south. In the case of larger infrastructure projects, the various stakeholders in a region may therefore have to be persuaded to participate in the process.

Local economic policy – a policy that focuses on the city, county or region – is pursued independently of the structural policy objectives initiated by a higher level, as shown in Figure 2. Often, the objectives of the different levels complement each other, e.g. when structurally weak regions respond to the specific, balanced regional economic development programmes of the EU or the federal state. The distinction between regional and local economic policy is by no means trivial because municipal economic development can pursue its own policy regardless of the overall regional objectives. Thus, in addition to a consensus-oriented policy, local economic policy may also result in a conflictual situation in which not everyone benefits – where, for example, certain sectors are addressed by many regions which increases competition. Strictly speaking, the same would be true for a regional policy targeted towards the equalisation of living

conditions across the regions, e.g. if a wealthy region increases its prosperity through a progressive economic policy and thus contributes to a widening of the regional welfare gap.

Figure 2 Levels of regional structural (or cohesion) policy



Source: Gärtner 2009.

### 3.2 Preventive structural policy

Since the 1970s, debates have been taking place about seeking preventive cures rather than a structural policy implemented in retrospect. One of the early founders of this strategy was Dr. Josef Rembser from the German Federal Ministry of Research and Technology who articulated the need to initiate structural change on an active basis (Rembser 1977: 5). Rembser's concept of preventive structural change was not concerned with establishing and growing forecasting capacities but rather with building networks and promoting research and innovation. According to the concept, support measures should not focus on the industry but on the technologies on the grounds that these bring potential for the economy as a whole (Gärtner 2014; Rembser 1977: 39).

The issue was taken up at policy level by trade unions and employee representatives who argued that an innovation-oriented regional policy which sought to integrate state funding for science and technology with regional structural policy, and to channel it increasingly to disadvantaged regions, should be extended to become a forward-looking structural policy (Bömer and Noisser 1981). Alois Pfeiffer, the former president of the German Trade Union Confederation (DGB), proposed a forward-looking policy that 'Does not seek to rectify sectoral and regional undesirable developments retrospectively, but intends to avoid them in the first place' (Pfeiffer 1982: 623).

Thoss and Ritzmann (1984) wanted their study *An information basis for forward-looking structural policy* to represent a contribution to qualitative growth and full employment as well as the full utilisation of existing production factors and a balanced

development of supply and demand at regional level. They distinguish between two structural policy strategies. First, in place of a defensive strategy, which aims to slow the pace of structural change without being able to prevent it in the long-term, they proposed a forward-looking structural policy as a second, and preferable, alternative: 'A policy of this kind would be designed to prevent negative structural developments – i.e. imbalances in supply and demand in sectors (and/or regions) well in advance – and with a view to the future' (Thoss and Ritzmann 1984: 5; own translation). Secondly, growth industries should be supported effectively and the process of withdrawing from shrinking sectors should be started at an early stage: 'In this way, the risk of misguided investments in vocational training and production facilities, which will no longer be needed in the future, could be reduced and the necessary structural change achieved with as little friction as possible' (Thoss and Ritzmann 1984: 5; own translation).

That a forward-looking structural policy was never implemented in this form is due in no small part to the forecasting problem. In addition, the fall of the Berlin Wall, the pace of German unification and the subsequent transformation took everyday politics in Germany by surprise and these issues were, therefore, given priority. This showed, on the one hand, how quickly macroeconomic and geopolitical events can appear and, on the other, how *ad hoc* measures are required that do not necessarily create the scope for a long-term perspective. Under the global market-oriented economic order, and with reference to the course of the political transformation of eastern Europe and Russia, efforts have also been made to avoid top-down political concepts that appeared to be based on planning and control (Gärtner 2014).

Additionally, it has to be kept in mind that structural policy exists on a multi-level basis with the uppermost level spending money on the development of specific regions. Traditionally, this was based on a specific regional status quo concerning the socio-economic situation and in which structurally weak regions, for example, had been supported in the past. In the case of preventive interventions, the structural weakness of a region will only become apparent in the future and this, in turn, will only come about if successful preventive action is not taken in advance. This is the fundamental challenge of prevention: if successful preventive action is taken, the original risk identified will not take place. Policy-makers would, therefore, have to be willing to finance structural change in a region that, according to the socio-economic data, does not need funding at the expense of a region that is currently structurally weak. Structural change – unlike, for example, climate change (although implementation in this area is also far behind the targets) – is not a real existential catastrophe for society as a whole. Moreover, uncertainty as to whether there will actually be a change clearly prevents any action from being taken.

### 3.3 The introduction of preventive programmes in brown coal regions

The finite nature of mineral resources in coal regions can generally reduce uncertainties, lead to structural change being initiated at an early stage both by shareholders and other stakeholders and create some scope for action. Over and above that, competences within the entire value chain can be developed into new competitive sectors. This is

especially true in the context of the imminent phasing-out of coal, in particular due to the serious climate damage caused by lignite-fired power generation. In 2014, the parliament of the federal state of North Rhine-Westphalia requested an assessment of the question of how, and if, a forward looking-structural policy was possible in the opencast lignite mining area of the Rhineland (Gärtner 2014).

Since 2017 there has been a programme at federal level called ‘Enterprise Territory’ (*Unternehmen Revier*), which was launched by the Federal Ministry of Economics and Energy (Bundesministerium für Wirtschaft und Energie 2017). Its primary objective is to support new opportunities in the four lignite mining areas of Lusatia region, Rhineland, Helmstedt (now closed) and central Germany. The amount of money (€4m per year) to support structural change in these regions is small, but this might just constitute the beginning of further mechanisms. The funds will flow annually over a period of ten years although, initially, they have been approved for four years until an interim evaluation can be made. Overall, the programme is – as far as the author is aware – the first preventive one to take place in Germany.

In order to capitalise on the local potential and actively involve local stakeholders, *Unternehmen Revier* was designed to initiate a competition of ideas and projects that could act as models. It has four priority areas that encompass a broad portfolio of traditional structural policy instruments: boosting competitiveness and enhancing the region as a business location; promoting employee skills; cluster development and innovation management; and expertise and capacity building (BAnZ 2017: 3). Regional innovation concepts (*Regionale Innovationskonzepte* – RIK) serve as the primary decision-making basis for local stakeholders. *Unternehmen Revier* aims to establish regional decision-making and implementation structures (governance), as well as to focus on the content of individual sectors or areas of expertise. As part of the development of the RIK, future fields and key projects were defined in the four regions and an organisational structure set up to implement the competitions.

The programme is still in its early, pilot stages. At this point therefore, evaluation is not possible and certainly its impact on the four coal-mining districts cannot yet be assessed. However, it is promising to see that a programme has been set up before the end of lignite mining to support and actively promote the phasing-out of coal in these districts. The programme focuses on developing endogenous potential and aims to train local stakeholders to strengthen their capabilities in order to support local structural change in the long-run.

With regard to the approximately €4m being spent annually on the preventive structural policy aspects of the programme, this is indeed just a drop in the ocean. However, in calling for the establishment of regional innovation concepts, regional organisational structures are being set up to implement and monitor the progress of preventive structural change. This is an important prerequisite for getting regional dialogue underway, but also in respect of the absorption capacity and effectiveness of the subsidies themselves.

### 3.4 The 2018 'Coal Commission' and the case of the Lusatia region

Other programmes and funds will follow and can be based on the ideas and structures developed in the interim. In this regard, the Commission on Growth, Structural Change and Employment (*Kommission für Wachstum, Strukturwandel und Beschäftigung*), commonly called the Coal Commission (*Kohlekommission*), is important. This was set up by the German federal government on 6 June 2018 and presented its results and recommendations in January 2019. The goal of the Commission, which was composed of a number of different civil, economic and political actors, was to develop consensus about the framing of structural change in Germany considering energy and climate policy goals. Furthermore, the Commission focused on developing real prospects for new, sustainable workplaces (*Kommission für Wachstum, Strukturwandel und Beschäftigung* 2019: 2).

The Climate Protection Plan 2050 of the German federal government, published in 2016, defines the goal for Germany to be greenhouse gas neutral by 2050. Within the different fields of action, the energy industry contributes a large part of total emissions in Germany (358 million tonnes in 2014) (*ibid*: 15-16)<sup>2</sup>. Consequently, a legislative package on 'Strengthening Growth, Structural Change and Employment' in lignite mining areas and coal-fired power plant sites was recommended by the Commission under which a total of €40bn will be spent on the affected regions over around twenty years. In the next ten years, the federal government will place up to 5,000 new jobs in federal institutions in lignite coal regions (Bauchmüller 2019; Heinrich-Böll-Stiftung 2019).

With the publication of the Commission's report, an entry has been made in the exit from coal. The energy industry, the trade unions and wider industry itself are committed to exit. However, political compromise has been made in that public money has been granted not only to the affected regions and workers but also to the coal mining industry.

In the case of Lusatia, the challenge is of course somewhat higher compared to the other three areas. Even if the 8,600 directly employed people are around 1,400 fewer compared to the number of mining employees in the Rhineland Area, the lignite coal economy is of dominant relevance to the regional economy. The region is less densely populated, as well as peripheral and remotely located. Moreover, there are not many industries other than coal mining and electricity generation.

It is true that old industrial cities and regions can draw potential from their perceived structural weakness. For example, industrial architectural heritage in the form of empty

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2. Thereby, coal power stations account for 70 per cent of the total emissions of the power industry. It could be summarised that the Commission recommended that, by 2022, a total of 12.5 GW of coal-fired power plants should be shut down, including 5 GW of lignite and 7.5 GW of hard coal. These measures will achieve a CO<sub>2</sub> reduction of at least 45 per cent in the energy sector compared to 1990. In the mid-2020s, CO<sub>2</sub> emissions are to be reduced by a further ten million tonnes, which corresponds to about 2 GW of lignite. By 2022, a (small) third will be shut down, with another third by 2030 and the last (big) third by 2038. Exit will, therefore, be complete by 2038 although a check will be made in 2032 as to whether 2035 will be possible ('opening clause'). Source: <https://www.boell.de/de/2019/02/08/ergebnisse-und-einschaetzung-zur-kohlekommission>.

industrial buildings can be developed as landmarks and as points of identification having symbolic or cultural value. The importance of these spaces for hotspots on the creative scene has been acknowledged in the development of urban areas, but some potential is also evident in the case of more rural regions due to vacancies and economically under-used spaces (Flögel and Gärtner 2011). However, the dilemma is where spaces are becoming vacant in monostructured old industrial areas on the periphery (Sandeck and Simon-Phillip 2008), since new uses are more quickly found for these kinds of spaces or buildings in more prosperous areas. According to Kersten *et al.* (2015a), the argument that special opportunities arise from cycles of crises also runs the risk of deserted spaces being rebranded as ‘creative zones’.

In areas with particularly pronounced crisis cycles, the involvement of civil society and the potential of skilled workers may both be eroded alongside economic development. A reversal of this trend seems to be realistic only with the help of external intervention. At the same time, however, there must be an understanding that politics cannot solve everything and that there will be regions that will shrink economically and demographically. Potentially, peripheral industrial regions will be affected more strongly than larger (old industrial) agglomerations.

#### **4. Lessons learned?**

Mining regions have always been affected by structural change: phases of economic growth are often followed by phases of structural change, for example when natural resources have been depleted or have become economically unprofitable for different reasons. These development pathways differ greatly from each other. Whether cities and agglomerations survive structural change without significant demographic decline depends, on the one hand, on their economic diversity, their size and the situation in the region; and, on the other, on the level of political willingness to support regions in the development of new competitive economic fields. The commitment to support regions is partly geopolitical and partly culturally determined. For example, it is difficult to imagine suggesting to the people of the small island of Helgoland in Germany, or the Azores in Portugal, that they move to the mainland and receive financial support, even if this would be cheaper in the long-term than implementing permanent structural policies. In Europe, and especially in Germany, the state is more willing than in many other parts of the world to counteract and mitigate the consequences of structural change.

The current allocation of funding to the four (of which only three are still active) lignite mining districts appears reasonable and, following the recommendations of the Coal Commission, will be significantly increased over the following years. However, the question arises of the extent to which policy-makers, at both regional and national level, are ready to consider a multi-layered process in view of the differing regional conditions. This would include an evaluation of the different efficiency levels of existing power plants and may also conclude that not all regions will be able to achieve re-industrialisation and a self-sustaining economic recovery, or at least a degree of stabilisation; at least in some areas there is a risk of continuing economic and demographic decline.

In this context, the question of how a regional compensation policy should be organised must be clarified. This can be achieved either by creating incentives to redirect investment into structurally weak regions, trying to establish equivalent economic development in the process; or by supporting the development of companies already resident in the regions in the interests of reindustrialisation. An alternative would be to provide permanent financial support for people living in weaker regions and to subsidise central infrastructure or public services such as shops, education, health care, etc. Traditionally, it is the incentive policy that has dominated development strategy, not least because – in addition – a growth-oriented compensation policy cannot justify permanent financial support. If, however, well-balanced regional development does not necessarily produce the best overall economic growth results, it may be economically and environmentally reasonable, when it comes to weighing the costs and benefits, to develop only those areas with excellent competitive potential and to subsidise the weaker ones.

Furthermore, it makes sense to expand local value chains in order to close the supply gaps and generate as much benefit as possible for the region. Measures range from mobilising civil society to alternative economic approaches. These approaches go hand-in-hand with a change in political and social values that focus more on a bottom-up than on a top-down approach. Of course, regions should not become disconnected from the world market, but the aim should be to try to develop sectors that are competitive outside the regional level. If the political objective is to develop regions without the potential to be competitive, these regions usually need an external development impetus, e.g. through re-locations of industries or the creation of outstanding infrastructures.

It is not easy to transfer the success factors identified for Germany or the Ruhr area to other regions or countries. In Germany, for example, the effective redistribution mechanisms contained in social insurance systems have helped to stabilise weaker areas. The respective overall conditions, in particular social security systems in the case of possible job loss, play an important role here. The social cushioning that took place in the Ruhr area would not have been possible in this form without widespread early retirement schemes financed out of statutory unemployment and pension insurance. However, there are some points of general interest for both the funding level and the local implementation level when it comes to regional restructuring processes:

**Starting as soon as possible:** A consistent preventive change path should begin early and slowly. For mining regions, for example, a change in direction initiated at an early stage would mean slowly reducing the industrial core of coal mining so that resources (e.g. land, staff and training, as well as research and development) become available for other aspects of development. This does not mean that industrial regions should not capitalise on their industrial-cultural basis; on the contrary, this can make a significant contribution to realignment. For regional stakeholders, this means a shift that, on the one hand, takes regional capabilities, culture and potential into account while, on the other, building a realignment supported by the involvement of higher hierarchical levels (i.e. the federal state) in spite of current functioning economic strengths.

**Thinking about the long run:** Established industries often generate good profits because the risks and uncertainties are low and the investments have paid off. These profits are distributed in different percentages to the shareholders (owners) and stakeholders (e.g. employees). This not only means that capital owners generally make good profits, but also that the public sector (e.g. through tax revenues), the region (e.g. through regional sponsoring projects) and employees (e.g. through appropriate collective bargaining agreements) also benefit. New sectors, on the other hand, often generate lower profits and usually start with low-paid and insecure employment. This prospect makes it difficult for trade unions, public authorities and industry federations to diverge from established paths and actively shape structural change especially since there is no guarantee that they will gain later rewards, in return for having actively initiated structural change, via the achievement of high returns which can then be distributed more or less equally.

**Involving shareholders and other stakeholders:** Civil society has important potential to be activated, especially in transition regions. This requires cooperation between a large number of stakeholders at different political and regional levels (local, municipal, regional, supra-regional, national and international). Multi-level governance is, therefore, required here. Companies and business owners should also be involved in the process because they, as practitioners, are very well-placed to assess the implications for the economy and employment. In addition, universities and research institutions must be involved at the project level as they are the gatekeepers of specific knowledge.

**Having common goals:** There must be a structural policy reference framework – i.e. commonly defined goals and guidelines – which should be drawn up collectively by the various levels (within a nation state). Within this framework, it is also necessary to agree on the importance of equivalent regional development and, if necessary, how this should be achieved. This must be seen in the context of the economic and social system and the existing settlement structure in order to be able to define realistic expectations.

**Promoting regional growth and regional balance:** Numerous studies (Fujita *et al.* 1999; Zimmermann 2003) have concluded that innovation is primarily created in densely-populated areas, especially in regions where there are favourable conditions for the spread of knowledge. The basic idea is to strengthen growth factors, particularly in (large) cities and densely-populated areas, to such an extent that there are spillover effects from which weaker areas will also benefit in the long-term. Since the concentration of funding in growth regions is (socio-)politically difficult to sustain, there is a risk that corresponding growth policies will be implemented broadly. Moreover, as these regions do not necessarily have sufficient competitive potential, these could turn out to be the wrong instruments for these regions. Another strategy would be to focus consistently on endogenous potential, independent of regional distribution, and to set-up specific programmes and instruments for weak regions. This might include, for example, the promotion of projects and the picking up of particular impulses, where special potential or committed individuals and companies are involved, while at the same time promoting the development of a functional and appropriate infrastructure.

**Embedding structural policy into other policies and providing sufficient resources:** Structural policy does not take place in a vacuum and is dependent on a political and social change of values. Cross-cutting issues, such as gender mainstreaming, environmental transformation, participation, equal opportunities and inclusion must also be supported within the framework of regional structural policy. To what extent education policy and improving the situation of socially-disadvantaged children and young people should be part of modern structural policy also needs to be discussed. On the one hand, it must be kept in mind that structural policy, which is in any case quite limited in terms of the amount of funds compared with other regionally-effective policies, could thus be overloaded; on the other, in view of demographic change and the resulting shortage of skilled workers, a policy of this kind can achieve a greater (including economic) impact than traditional structural policy. This becomes even more evident when using the term ‘prevention’. After all, general ‘regional fitness’, i.e. well-skilled people and good infrastructure, ensures that a region is more resilient and can react better to changes.

**Thinking in functional spaces:** Structural change projects often require a local reference and local involvement in order to secure the commitment of stakeholders. At the same time, structural change strategies can only be considered in wider contexts in which economic and political functional factors can also be considered. However, it is not enough to expand the regional area but to define different spatial relationships and, thus, other stakeholders in respect of different issues. When considering overlapping spatial relationships, the first priority is to identify possible reference areas for different issues. The difficulty lies in a region understanding that it is dependent on the willingness and ability of the surrounding area before it can influence and shape this kind of process. This becomes especially important when civil society actors are to be involved who, in turn, have different spheres of action and reference than economic or political actors. This requires a multi-dimensional and multi-hierarchical approach.

**Reflecting on new constellations of actors in structural policy:** Regional development and structural policy have become more bottom-up in two respects. First, municipalities and counties – and, more recently, even districts – are called on to contribute their own development ideas and concepts and not to leave structural policy to the higher hierarchical level, i.e. federal states or the federal government. Moreover, the structural policy actors of today not only include politicians, companies and other (semi-)state institutions, but also civil society. Even if this can have great potential, for example by allowing civil society protest movements to point out shortcomings, raise awareness of conflicts and persuade politicians and institutions to act, and also to highlight social trends, the process becomes more complex while decision-making – at least if it is to be consensus-oriented – becomes more time-consuming and difficult. Furthermore, it is important that participation and the power to shape policies are not left solely to an ‘elite with a voice’ or to those who are pursuing their particular interests. This applies in particular to structurally weak regions, where commitment and participation are often lower.

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