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Bringing about institutional change in public brownfield management: The case of Saxony-Anhalt (Germany)

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Bringing About Institutional Change in Public Brownfield Management: The Case of Saxony-Anhalt (Germany)

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Bringing About Institutional Change in Public Brownfield Management

The Case of Saxony-Anhalt (Germany)

Mi-Yong Lee-Peuker[1] and Bernd Klauer[1]

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1 Introduction

1.1 Brownfield Management in East Germany

After the peaceful revolution in Germany in 1989 and until today, the reunification and harmonization of two former sovereign political entities has posed a variety of societal challenges. Among these, East Germany's brownfields were considered a long-term and highly complex issue with major societal impact.[2] Heavily contaminated sites formed a considerable part of the ecological and economic burdens which the GDR had left behind. Economically significant regions, such as the so-called chemical triangle Leuna-Buna-Bitterfeld in the middle of reunified Germany, were strongly associated with environmental hazards of unforeseeable consequences. The GDR government and industry had been known for their disregard for the environment. Hazardous substances had been handled inappropriately and with levity. Waste had been disposed without care and necessary investment in environmental protection had been neglected. The goal to fulfill the economic plan had promoted the disregard for environmental concerns and the lack of effective environmental policy and regulations. All industrial areas in East Germany contained sites with severe soil and water contamination. As a consequence many sites were put out of operation in the years 1989 and 1990 and brownfield remediation remained one of the major tasks of East German's economic and environmental catch-up.

Brownfield remediation usually generates enormous cost. With regards to the liability, the new German Länder (English: new federal states)[3] were confronted with a problem: The state-owned businesses of the GDR had ceased to exist and could not be made liable anymore for environmental hazards. Potential purchasers were confronted with these hazards and, where required, with the costs of remediation and prevention because in Germany land owners are liable for residual pollution risks on their estate even if they are not the hazard causer.[4] Therefore, these sites were not attractive for investors. That constituted a major hindrance to privatization (Hentrich 2000: 38).

[2] The brownfield thematic is of course not only an East German but a German problem. Currently there are 296,554 registered sites in Germany of which 61,545 are considered to be contaminated (UBA 2008). However, only some 20% of all registered sites have been examined so far (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit 2009: 86)

[3] The new federal states are the states within the FRG on the former territory of the GDR.

[4] This is in accordance with the polluter-pays-principle (Der Rat von Sachverständigen für Umweltfragen 1989: 204-205).

Figure 1: Political map of the Federal Republic of Germany since 1992

Source: http://www.freeworldmaps.net/europe/germany/political.html, retrieved at 09-15-2010; New Länder: Thuringia, Saxony, Saxony-Anhalt, Berlin (formerly East and West Berlin), Brandenburg, Mecklenburg-Western Pomerania; Old Länder: Baden-Württemberg, Bavaria, Bremen, Hamburg, Hesse, Lower Saxony, North Rhine-Westphalia, Rhineland-Palatine, Saarland, Schleswig-Holstein.

In 1990, in order to support economical and ecological development the so-called clause on the exemption from liability for residual pollution for investors (short: residual pollution exemption for investors, RPEI) was enacted as part of the Environmental Frame Act (short: EFA, German: Umweltrahmengesetz). Its purpose was and is to eliminate residual pollution risks resulting for land owners from §4(3) Soil Protection Act (German: Bundesbodenschutzgesetz) by means of exemption. Subsequently, the German government provided several billion Euros to cover the costs incurred by that clause.

The RPEI was intended as a framework for the re-use of brownfield sites and thus to sustainable development of the new Länder. However, the actual implementation of the RPEI and the management of the remediation process within the given administrative structures turned out to be highly ineffective. Although the basic legislation and the financial funds had been provided the actual brownfield management was extremely difficult to bring about because of the following circumstances: (i) The RPEI was a legislative novelty and throughout Germany there was no experience available. (ii) The financing was split between the Bundesrepublik (English: Federal Republic of Germany) and the Länder which in practice resulted in an infringement of constituted Länder autonomy because their coordination turned out to be dysfunctional. (iii) The Länder's administrative structures and processes proved to be inadequate for RPEI implementation. The budgetary system in particular proved to be too rigid for managing brownfield projects as it involved approval of all administrative levels (local and district authorities as well as the ministry).

In summary, an effective implementation of the RPEI would require more financial flexibility (ad iii) and Länder autonomy in brownfield matters (ad ii). In the state of Saxony-Anhalt this was accomplished by means of two institutional changes.

1. Re-establishment of Länder autonomy: As of 2001 Saxony-Anhalt took over the sole and unlimited responsibility for all brownfield management issues on its territory by stipulating a lump sum payment by the Bund of 1,0 Bill Euros. With this the Bund once and for all disposed of all responsibilities in the brownfield matter in Saxony-Anhalt.
2. Creation of a new organization: With effect from January 2000 Saxony-Anhalt created a new organizational body for the management of its RPEI related brownfield matters, the so-called State Agency for Exemption from Contamination Liability in Saxony-Anhalt (SECL) (German: Landesanstalt für Altlastenfreistellung).

With these two changes an institutional structure for brownfield management was generated which is unique in Germany. The arrangement has since efficiently promoted investments by means of applying the RPEI. It thus provides an interesting case of successful institutional change which deserves closer analysis. In this paper we attempt to show how this institutional solution was created and implemented in the political environment. We will do so by reconstructing the change process alongside an interview study which focuses on the key actors. We will show how these key actors moved within the given organizational and political structures using formal and informal rules purposefully and efficaciously, i.e. making the most of the given room to maneuver. Furthermore we will argue that their success was also due their ability to take the dynamics of the various determining factors of the brownfield problematic as well as of the political process into account and to act accordingly.

Exemplarily this case study shows that whether the implementation of a policy can be effective in the long-run depends on whether the problem is properly understood in its development over time. With the *concept of stocks*, a general approach is provided which allows for the systematic assessment of the dynamics of the factors that are essential to the problem.

In this paper the concept of stocks will be employed as a hypothesis which helps to explain *in retrospect* the success of the key actors. For this, we will focus on the characteristics of the new institutional setting for RPEI implementation and on the process of its establishment.

1.2 Structure of the Paper

The paper will proceed as follows: In section 2 we will introduce the concept of stocks. In section 3 we will present our notion of institutions and institutional change. We will then provide some background on the history and the main ecological issues of the brownfield problem in East Germany (section 4). In section 5 we will outline the two main problems of implementing the RPEI of which one is the cooperation between the Bundesrepublik and the Länder (section 5.1) and the other the unsuitability of the Länder's administrative structures for carrying out RPEI related brownfield projects (section 5.2). We will then, in section 6, develop a comparison of the changes. For this, the initial situation in the brownfield area (section 6.1) and the decision-making structure before (1990-2000) will be compared with the situation after the institutional changes (as of 2000) (sections 6.2 and 6.3) and the effect of the

change will be indicated based on statistical data on the development of brownfield management in Saxony-Anhalt (section 6.4). In section 7, we will attempt to provide insight into how these institutional changes, the lump sum payment of the Bundesrepublik and the establishment of the SECL, were realized. For this purpose, we will reconstruct the political process towards the creation of these institutions, based on interview statements of the political key players collected in the field throughout the years 2008 and 2009. Finally, in section 8, we will summarize and discuss our findings.

2 The Concept of Stocks

The analysis of temporal structures is essential for conceptualizing policy in general but it is of particular relevance for policies that aim at sustainable development. The primary objective of sustainability policy is to realize intergenerational justice while preserving natural and intellectual resources in the long-term. This implies that present political decisions have to account for consequences for current and future generations. For this, it is requisite that desirable future states of nature and society as well as the means and actions necessary to achieve them are defined prior to the actual political decision. The concept of stocks, as introduced by Schiller (2002, also Faber et al. 2005) serves as an approach for obtaining the knowledge on which these states are defined and their consequences are identified.

Time as a notion represents the conceptual essence of the concept of stocks and has three dimensions:

- The dimension of *absolute time* denominates the time that can be measured (in years, hours, etc.) and is visualized with a time line. Absolute time remains unaffected by the altering world.
- The dimension of *inherent time* denotes the typical duration of objects and processes. In many cases, it cannot be assessed precisely but by approximation, e.g. the life expectancy of human beings, the regeneration time of a forest or radioactive decay. The notion of inherent time is employed when appraising the uninfluenced behavior of objects and processes in time as e.g. slow, fast, etc.
- The right moment to act denotes the ideal point(s) in time for achieving a certain purpose, e. g. realizing a political objective. Necessarily, the right moment to act needs to be based on the inherent time of things and processes. The right moment is when action is taken neither too early nor too late in order to achieve the objective.

We argue that the conception of any feasible policy needs to be based on these three dimensions. However, it is the inherent time of things and processes that we hold as the key dimension on which the policy design should be based, since it is the inherent time of things and processes that ultimately limits human influence on nature and society. With the concept of stocks we obtain a tool that allows us to detect these limits in a systematic way.

A stock is defined as an entity that is durable.[5] This could be, for instance, the stock of coal in a region, the number of species in a habitat, stock of population in a town or of machines in a company. A stock is characterized by its temporal dynamics, i.e. the stock increases, decreases, stagnates or fluctuates over time.[6] The number of inhabitants can be predicted given the typical mortality, fertility and migration rates, and the machines in the company will be amortized given the pattern of utilization. Since immaterial factors are as relevant to sustainability as material factors we suggest the evaluation of temporal dynamics of immaterial stocks such as institutions (e.g., laws, habits, consumption patterns) and technologies in a manner analogous to the analysis of material stocks (see Faber et al. 2005).

By describing a problem in terms of stock, i.e. as a set of stocks, policy makers are able to recognize the problem's temporal dynamics which is an essential basis for conceptualizing any policy in line with sustainable development. The analysis can be divided into three steps, although the process itself can contain iterative loops.

- *Identifying relevant stocks*: There are three criteria for evaluationg the relevance of a stock for a specific problem at hand. First, stocks are relevant because their state has a positive or negative impact on the realization of the sustainability objective. They can be either desirable and should thus be sustained or raised (e.g. endangered species, greenfield) or undesirable and are thus to be reduced (e.g. toxic substances, brownfield). Second, there can be stocks that exert influence on the growth, stability, or decline of the desired and/or undesired stocks (e.g. bacteria that can degrade toxic substances via metabolism). Causal

[5] Because of the characteristic "durability" a stock existing at the present will last beyond the present. By focusing on stocks, we can use this characteristic for gaining information about temporal dynamics in the future.
[6] The idea of stocks has been introduced into Ecological Economics by Georgescu-Roegen (1971). He used the term primarily in conjunction with flows for describing and modelling processes in economic and natural systems (Stagl/Common 2005: 88). In his words "a flow is a stock spread over time" (Georgescu-Roegen 1971, Chap. 9). Scientific theories on dynamics typically employ the term "flow". Here, however, the term "stock" is employed in order to emphasis the persistence of things and processes over time and to acquire information about their long-term behaviour.

relation ties between stocks are generated by applying scientific theories and drawing on practical knowledge. Third, from the policy-maker's al point of view, it has to be determined whether the relevant stocks –material and immaterial – can be influenced by human action to facilitate sustainable development.

- *Describing stock dynamics*: Statistical data and information about past dynamics as well as insights from scientific theories and expert knowledge is evaluated in order to generate statements about verisimilar developments. By this means, the inherent time of objects or processes is estimated. Where stock dynamics cannot be not sufficiently identified probable scenarios are developed as a supplement.

- *Comparing stock dynamics*: The comparison of the dynamics of relevant stocks allows to identify the room to maneuver, i.e. the possible influence on the relevant stocks and the favorite moment(s) for human intervention according to their inherent time (life-cycle, growth, decay, etc.). In most cases, we suggest, the room to maneuver cannot be derived directly from comparing stock dynamics but requires the hands-on experience based judgments of the policy maker.

The analysis along the temporal dimension allows for integrating heterogeneous matters in question and therewith the knowledge gained by different scientific disciplines.

The concept of stocks is an attempt to verbalize "dynamics" as an essential factor for problem-oriented and holistic policy-making. Furthermore, we argue that it reduces the explanatory deficit of abilities that fall in the category "political instinct". The insights gained via the stock's concept cannot, however, claim the same rigor as mathematically based dynamic and systemic theory, because the concept of stocks also contains subjective sources of knowledge derived from individual hands-on experience and know-how.[7] We can say that stock's concept is a policy-maker's way of systematically perceive the temporal dimensions of the problem at hand that allows him to reduce its complexity. Furthermore, we argue that it is indispensible for any feasible sustainability policy.

[7] The concept of stocks makes the need to render judgements transparent. Therein, we see another accomplishment by the stock approach. In many alternative approaches such as modelling and cost-benefit-analysis, the judgements are not made explicit or even "disappear" in the assumptions and definitions.

We suggest that in our case the political key players applied the concept of stocks to the brownfield problem. Although they did not use this term to explain and describe their actions, this becomes apparent in the temporal perspective that prevails in their interview statements. We applied the concept of stocks here in order to explain their actions and perspectives from a theoretical standpoint. In particular we will show (i) that the political key players had a sense of time and applied it in their decision-making process and (ii) how obstacles were tackled and windows of opportunity were taken advantage of.

Furthermore, the interview statements also confirm the importance of other factors for successful political action which have been suggested by earlier works. These are (a) the ability to utilize well one's own competences (Faber et al. 1997: 459), (b) the ability to obtain majority approval (Sabatier 1988, Olsson et al. 2006) and (c) the ability to adequately define the problem at hand (Baumgartner/Jones 2002, Faber et al.).

3 Political Action and Institutional Change

For the basic notions of our study, such as "political action", "institution" and "institutional change" we will assume the following definitions:

We understand "political action" according to Faber et al. (1997: 459) who restrict the notion to "those decisions and actions in the area of politics which are not completely predetermined by legal rules and decrees" (ibid.). Thus, they "refer to those situations, where there is a certain scope for free action, and where the outcome is open" (ibid.). Political action in this sense does not include mere administrative or bureaucratic measures, which are carried out according to existing laws and rules. Political action in this sense has traits of creativity and in particular involves the change of existing political rules (ibid.).

According to Hodgson (2006: 18) we employ the term *institutions* as "systems of established and embedded social rules that structure social interactions". These rules[8] include laws and the legal provisions (regulations) about the procedures and responsibilities for their implementation and enforcement. For this paper we will focus on institutions with *legal*

[8] *"Rules in this context are understood as socially transmitted and customary normative injunctions or immanently normative dispositions that in circumstances X do Y."* (Hodgson 2006: 18)

character.[9] Furthermore, we denote for *institutional change in public administration* a deliberative and premeditated modification of organizational structures and procedures aimed at establishing a new combination of rules and standards for policy implementation and enforcement.[10]

Using these notions, this study contributes to the scientific discussion on environmental governance on two different levels. Foremost, the illustration and reflection upon the established institutions for brownfield management in Saxony-Anhalt provide examples and guidelines for policy-makers tackling brownfield issues in their country, province or region. On a broader scale, the analysis here distills the important elements of institutional change and the factors for its success.

[9] In the systematic suggested by Williamson these are institutions of the *"second level"* and they comprise a society's *"institutional environment"* (Williamson 2000: 598) which go beyond level 1 institutions, i.e. the level of *"embeddedness"* which includes norms, customs, mores, traditions (Williamson 2000: 596): *"The third level is that of the 'institutions of governance', at which the set of rules ('governance structures') which govern day-to-day interactions ('contractual relations') are assumed to adjust so as to minimize transaction costs. Adjustment at the third level typically takes years. Finally, at the lowest level [i.e. level 4, A/N], the prices and quantities specified in individual contracts adjust continuously."* (Williamson 2000: 596, summarized here by Kingston/Caballero 2009: 167). According to Williamson level 2 institutions are *"structures"* which *"are partly the product of evolutionary processes"* but for which *"design opportunities are also posed"* (ibid.). Respective *"design instruments at level 2 include the executive, legislative, judicial, and bureaucratic functions of government as well as the distribution of power across different levels of government (federalism)"* (ibid.). Changes on this level take decades or centuries whereas institutions on the level 1, the level of *"social embeddedness"*, typically change on the order of centuries or millennia (Williamson 2000: 596). That the attribution of time periods for change to the different institutional levels is somewhat arbitrary and that counter-examples are easy to find, does not change its usefulness in principle. Level 1 and 2, however, address the fundamental order of societies in its formal and informal aspects. Culture as well as the political, legal and economic framework of a society lay beyond the political daily business. Indeed are systematic interventions on these levels possible, but they require a long wind and much attention or happen due to *"rare windows of opportunity"* which usually are the result of *"defining· moments"*, e.g. societal breakdown, crisis or wars (Williamson 2000: 598). This hypothesis by Williamson might well apply to the institutional changes and adjustments in eastern Germany during the political turn in 1989/90. The Environmental Frame Act, for example, was enacted on July 1, 1990 by the East German Parliament and in view of the German re-unification (http://bmu.eu/ministerium/doc/45187.php, retrieved at 05.09.2010). Its purpose was to enter into effect the essential environmental regulations of West Germany on the territory of the GDR. According to its immission control regulations, for example, new facilities in the GDR were required to meet the same standards as in the FRG as of September 1, 1990.

[10] And in line with Hodgson (2006: 18), we conceive organizations as *"special institutions that involve (a) criteria to establish their boundaries and to distinguish their members from nonmembers, (b) principles of sovereignty concerning who is in charge and (c) chains of command delineating responsibilities within*. With regard to public administration and government, that includes among others ministries, public authorities and agencies on the regional, i.e. state, and the national, i.e. federal level, as well as private businesses. For our purposes, we hence observe organizational change as a special form of institutional change by a modification of at least one of the following three features: (a) boundaries and membership criteria, (b) the attribution of responsibilities as well as (c) the chain of command. The establishment of a new administrative entity in the public realm, for example the establishment of a new department within a local authority or the foundation of a new public office or agency, such as in our case the formation of the State Agency for Exemption from Contamination Liability in Saxony-Anhalt (SECL), involve changes of these features.

4 Historical Background of Brownfields in East Germany

4.1 Environmental Problems of the GDR

The GDR (1949-1990) had inherited a diverse industrial infrastructure from the Third Reich which included innovative mechanical engineering, electronics, aircraft industry and major chemical industry complexes (Ritschl 1995: 17). The industry was self-sustained by its own natural resources including one of Europe's largest brown coal deposits as well as copper and other ores (ibid.).

The GDR economy focused on the expansion of the heavy and chemical industries which were given priority over the growth of consumer oriented light manufacturing (Ritschl 1995: 26). Throughout the 1960s and 1970s, a major concentration and centralization of the heavy and chemical industries took place which resulted in enormous state conglomerates that usually held major shares in their market (ibid.).[11] In particular coal, petrol and gas processing industries including synthetic fiber production, and mechanical manufacturing featured the highest net production growth rates in the GDR (Steiner 1995: 101-118).

The respective methods of production were extremely resource intensive. In the 1980s the real capital stock was based on technologically out-dated facilities which could no longer be rehabilitated to meet international technology standards (Komar 1992: 116). A striking example is the production of synthetic gas[12] with carbon chemical processes in the Leuna[13] factory with the so-called Winkler generator. This technology originated from the 1920s and was in operation until 1989 and featured very inefficient performance ratios, i.e. of the carbon input only 67% could be processed into synthetic gas or alternatively 42% into Acetylene (Komar 1992: 118).[14]

[11] Petschow et al. (1990) refer to the GDR's economic structure as a result of the self-reliance policy, the isolation from the world economy and its inclusion in the *Council for Mutual Economic Assistance* (Comecon, 1949-1991) the economic union of the socialist states under command of the Soviet Union. Comecon had been established in order to promote economic specialization and division of work among the socialist economies as well was the gradual harmonization of diverse economic conditions. Strong mutual dependencies between the Soviet Union and the other Comecon states were the result of this policy.

[12] Methanol was manufactured from coal.

[13] The Leuna state combine was one of the largest industry sites in the GDR located near the city of Halle in Saxony-Anhalt.

[14] The processes were extremely energy intensive. The carbide furnaces operated at a temperature level between 2,200 and 2,300 degrees Celsius. For the production of 1 ton calcium carbide between 3,500 and 3,600 kWh were necessary.

The carbon based chemical production processes generated high levels of dust and SO_2-emissions.[15] More than half of the pollutant discharge, such as chlorinated hydrocarbons, mercury, tensides, cyanides, and heavy metals, was released into water bodies without treatment (Behrens 2007: 3, Environmental Report of the GDR 1990: 69). Of all water supplies 47% were unsuitable for drinking (ibid.).[16] The intensive use of agro-chemicals led to pesticide and fertilizer input, e.g. nitrate, to ground and surface waters (Behrens 2007: 4, Environmental Report of the GDR 1990: 36). By 1988 91.3 million tons of industrial solid waste were annually produced of which only 39.9% were recycled; the majority was released to the natural environment (Environmental Report of the GDR 1990: 8).[17] The continuous expansion of brown coal mining generated a major reduction of arable land. Between 1971 and 1985 45,729 hectares were abstracted for brown coal mining alone (Behrens 2007: 3).[18]

In the process of reunification, the acute environmental hazards did not allow for delays of environmental measures. Therefore, in the preparation of the re-unification the two German Ministers for Environment established a conjoint environmental commission as early as in February 1990. Among other things, the commission was responsible for the production of strategic remediation and development plans.[19] Major progress was made with the Environmental Frame Act (EFA) in June 1990, including fundamental regulations for brownfield management in East Germany.

In the following sections 4.2 and 4.3 we will outline the German brownfield policy concerning the remediation and redevelopment of brownfields in the new eastern German states after the political turn. This policy has been based on the German EFA of 1990 including an investor exemption from environmental risks (section 4.2). An organizational

[15] The carbide production in Buna, one of the chemical state combines and the GDR's chief producer of polymer plastics, alone discharged 41 kilotons per year (Komar 1992: 120). With annual emissions of 2.2 million tons dust and 5.2 million tons SO_2 per unit area the GDR ranked no. 1 in Europe. Its main emitter were the industry with 58% SO_2 originating from the coal and energy industry and 41% dust originating from the chemical industry.

[16] This is, however, not entirely due to industrial use, but results also from agricultural influences in particular from nitrate immission.

[17] In 1988 at least 13,000 landfills existed of which 2,000 were for industrial solid waste (Behrens 2007: 4). The Institute for Environmental Protection (Institut für Umweltschutz 1990: 53) identified 570 landfills where toxic and contaminant by-products had been deposited. The majority of these landfills did not provide the basic leachate sealing or sockets and thus contributed to severe ground and surface water damages (Institut für Umweltschutz 1990: 55).

[18] Between 1971 and 1975 only 35% and 19% between 1981 and 1985 were restored for agricultural use (Behrens 2007: 3).

[19] http://bmu.eu/ministerium/doc/print/45187.php, retrieved at 09-15-2010.

body – the Treuhand Agency (German: Treuhandanstalt) – was assigned to administer the funds provided by the Bundesrepublik for implementing that clause (section 4.3).

4.2 Exemption for Investors from Liability for Residual Pollution

For the purpose of overcoming the obstacles to privatization and investment as soon as possible the RPEI as part of the EFA was passed on June 29, 1990. The RPEI allows for the exemption from those contamination risks for investors which were generated before July 1, 1990 (Article 1, §4, section 3, EFA[20]). This implies that the Bundesrepublik and the Länder, not the private investor, bear the cost of complying with the laws for soil and ground water protection for any risk on sites contaminated before July 1990. The exemption clause applies only to private investors who are not responsible for these hazards and only in cases of economic investment which includes the privatization of business and the creation of employment. Aside from the goal of environmental protection and preservation, its purpose is to eliminate hindrances to investment and to promote economic development.

As supplement to EFA provisions, 21 so called Major Ecological Projects (MEP) were defined. These are industrial mega-sites on the territory of the former GDR. They feature:

- A high potential for ecological hazards (indicated by major industrial activity in the past with high potential for heavily contaminated sites)
- A large volume of estimated total decontamination cost (min. 100 million DM ~ 50 million Euros), and
- A major impact on the region's economic development.

The exemption clause, however, did not automatically secure the financing of decontaminations. In addition, the new Länder were already overstrained by their limited budgets. Therefore, a *General Administrative Agreement* between the Bundesrepublik and the Länder to finance remediation measures was stipulated in 1992. Among others the agreement stipulated cost shares for exemption related remediation projects. For non-MEP projects they were 60% for the Bundesrepublik and 40% for the Länder whereas for MEPs they were 75%

[20] Officially the EFA is referred to as „Gesetz über ergänzende Vorschriften zu Rechtsbehelfen in Umweltangelegenheiten nach der EG-Richtlinie 2003/35/EG, Umwelt-Rechtsbehelfsgesetz" (Act about the supplementary provisions for appeals in environmental matters according to the EG directive 2003/35/EG, Environment-Appeal-Act)

for the Bundesrepublik and 25% for the Länder.[21] The financial commitment of the Bundesrepublik was managed by the Treuhand Agency.

4.3 The Treuhand Agency and the FAUST

On March 1, 1990 the Council of Ministers of the GDR established the "Institution for the fiduciary administration of public property" (German: Anstalt zur treuhänderischen Verwaltung des Volkseigentums, short: Treuhand Agency). The Treuhand Agency was to preserve the public property and to administer it according to the interest of the general public. Stipulated in the Treuhand Act its main tasks were (Grosser 2003):

1) The privatization of public property in line with the principles of the social market economy.
2) The facilitation of the structural economic adaptation according to market requirements and in particular the restructuring of businesses.
3) The retirement and liquidation of those businesses which were not possible to restructure.

Hence, its task was to demerge the state conglomerates and to transform their successor companies into incorporated capital businesses, i.e. the restructuring and selling of roughly 8,500 firms with initially more than 4 million employees. The Treuhand Agency also became mainly responsible for administrating the federal funds related to the exemption clause.

As of January 1, 1995 the Treuhand functions were reorganized and the agency's duties were taken over by three organizations. The *Federal Agency for Unification-derived Special Tasks*[22] (hereinafter referred to as FAUST) succeeded the Treuhand among other tasks in the responsibility for administrating the exemption related federal funds. Though the FAUST still exists today most of its operative functions were delegated as of December 31, 2000 to a liquidator.[23]

[21] See General Agreement about the Financing of Brownfields (German: Verwaltungsabkommen über die Finanzierung ökologischer Altlasten) from December 1, 1992, supplement 1, number 5.
[22] German: Bundesanstalt für vereinigungsbedingte Sonderaufgaben (BvS)
[23] http://www.bvs.bund.de/003_menue_links/03_portrait/index.html, retrieved at 09-15-2010.

According to the FAUST, a total of 2.565 billion Euros were spent by the Treuhand/FAUST until the end of 2009 for brownfield remediation in eastern Germany.[24,25] For the current period from 2010 to 2014 another 132 million Euros are available.

We will now turn to the actual implementation problems on the Länder level. We will differentiate between (i) problems of implementation due to coordination failures between the Bundesrepublik and its representatives (Treuhand Agency/FAUST) (section 5.1) (ii) and problems on the level of public administration in the Länder (section 5.2).

[24] Source: letter from the FAUST to the authors dating from February 12, 2010.
[25] That does not include the restructuring of brown coal mining sites, stow mining of potash and ores as well as nuclear power plants.

5 Brownfield Exemption: The Problem of Implementation

5.1 Problems between the Bundesrepublik and the Länder

On 30th March 1992, the application deadline for investor exemption, over 70,000 applications had been submitted of which 15% referred to formerly state-owned industry sites (Eisenbarth 1995: 34, Wolf 2003).[26] Besides the number of applications being overwhelmingly high, the environmental administration units[27] throughout eastern Germany were particularly challenged by the following circumstances:

1. Every exemption application was to be decided on a case by case basis by the administrative district authorities (ADA).
2. The authorities were seriously understaffed for the amount of applications they were confronted with and they were also overstrained with applying the exemption clause to an extremely wide range of case types which included the land of single and small-sized farmers as well as industrial mega-sites. The main source of overstraining was the ADA's lack of experience with the application of the law since no former experiences had been made elsewhere in Germany from where expertise could be drawn.
3. The decision for exemption was not based a mandatory regulation but was discretionary. The public administration had to carefully the exemption related financial burdens on the one hand and advantages for the community on the other (land recycling, preservation or creation of employment, remediation of environmental pollution, creation of tax revenue, etc.).[28]

[26] On June 2, 1997 the Mitteldeutsche Zeitung (English: Middle-German Newspaper) quotes the figures stated by the Bundesrepublik's State Secretary, Walter Hirche: 71,405 applications for exemption of which by 1997 15,843 were granted, 25,807 rejected and 29,755 pending. (Mitteldeutsche Zeitung, 02.06.1997, Comment, page 2).

[27] For the following it is important to know that the basic structure of the German public administration consists of three independent levels: (i) the administration of the Bundesrepublik, (ii) the administration of the 16 Länder and (iii) the administration of the districts (German: Landkreise). Altogether there are 545 districts and independent municipalities or urban districts (German: kreisfreie Städte). Each of these administrative levels has, in principle, its defined group of functions and responsibilities. There is no hierarchical pyramid of agencies from local administration through the respective Land to the Bundesrepublik.

[28] Therefore, the applicant usually has to provide the decision-making public authority with investments plans and details as well as the estimated number of jobs to be created. The invested amount as well as the number of jobs can be stipulated in the exemption notification as well as a respective annual reporting obligation on the part of the investor (Faensen-Thiebes/Müller 2008: 4-5).

Furthermore, it followed from each granted exemption that the Länder, and in particular their ADA, became responsible for the execution of the decontamination projects. Treuhand/FAUST was responsible for the assessment and the coordination of the Bundesrepublik's financial contribution to each decontamination project. For MEP decontamination the shares were 75% for the Bundesrepublik and 25% for the Länder. Likewise for non-MEPs they were 60%/40%. In both cases was the Bundesrepublik's contribution was larger than the Länder's. Many problems were caused by the highly complicated communication process between the Treuhand/FAUST and the Länder. The main conflict soruce was a consequence of the opposing incentives between the parties. The Länder were bound to a strong interest in thorough and sustainable remediation measures, whereas the Bundesrepublik was mainly concerned with avoiding 'luxurious decontamination' measures at the cost of the tax payer (Seibel 2005: 392). Each exemption case had to be negotiated between the ADA representatives and the Treuhand/FAUST representatives (Seibel 2005: 392). Treuhand/FAUST, as a federal agency, had more human resources, expertise, and experience than the ADAs.

Between the three main counterparts, Treuhand/FAUST, the investor and the responsible ADA the coordination was highly dysfunctional. The exemption verdict for the investor from the district authority and the privatization contract between Treuhand/FAUST and the investor could contain different demands. For example, in case the stipulated exemption sum from the ADA did not entirely cover the decontamination cost, Treuhand/FAUST, had in principle to cover the difference (Seibel 2005: 393).[29] Hence, Treuhand/FAUST tried to intensively influence the Länder's practice of exemption (ibid.). The Länder and their ADAs acquiesced to the Treuhand's/FAUST's interference only because of their superiority in competence and capacity (ibid.).

The assessment of the actual decontamination expenses, and further the direct entanglement of the Bundesrepublik and Länder interests, lead to severe delays (Seibel 2005: 394). In order to accelerate the implementation of the exemption clause, the states agreed that the Bundesrepublik should fulfill its financial obligation by a lump sum payment stipulated in individual agreements between the Bundesrepublik and the Länder, thus replacing the General Administrative Agreement of 1992. Thuringia reached a lump sum agreement with the Bundesrepublik as early as 1999. Saxony-Anhalt came to an agreement in 2001,

[29] In practice this was generally managed otherwise. The FAUST and the state then usually agreed on an increase of the contribution caps.

Mecklenburg-Western Pomerania followed in 2003, and Saxony in 2008. With the lump sum agreement an essential precondition for exercising autonomy with regards to exemption related brownfield projects has eventually been established.

5.2 Problems on Länder and District Level

A severe problem of the Länder was of a technical nature: All expenditures in public administration were to be allocated in the preceding year and changes in a current year which exceeded a certain amount, normally 50,000 Euros, required an adjustment of the previous allocation. The adjustment was complex and time-consuming, since it required the approval from all administrative levels, i.e. from the ADA to the State's Ministry of Finance. The actual extension of a brownfield contamination is difficult to assess up front. Changes in the on-site conditions such as new contaminant sources or new pollutants detected after commencing the decontamination process occur frequently. Due to this the cost of remediation measures could not be predicted precisely in order to allocate well the finances. Brownfield projects typically involve 6-digit or even 7-digit sums and thus easily exceeded the 50,000 Euros threshold and corrections were frequently required.

The institutional problems described in the previous and the present sections were significant also for the state of brownfield management of Saxony-Anhalt in the 1990ies. In order to significantly improve the implementation, the following two objectives had to be accomplished:

(a) Replacement of the General Administrative Agreement by another financial arrangement that would eliminate the coordination with the FAUST in order to solve the problem of dysfunctional coordination between the ADAs and the FAUST.
(b) Outsourcing of the exemption procedure from the regular Länder administration in order to solve the problem of unsuitability of the Länder administration for managing brownfield projects.

In Saxony-Anhalt these objectives were addressed by stipulating a federal lump sum payment and by establishing the so-called State Agency for Exemption of Contamination Liability in Saxony-Anhalt (SECL). It was necessary for the political key actors had to *interfere* with the given institutional structures, i.e. they had to deliberately create institutional change:

1) The government of Saxony-Anhalt would have to be convinced of giving up the financial security resulting from the General Administrative Agreement.
2) The public administration in Saxony-Anhalt to be convinced of relinquishing its chief competences in brownfield management.

Whereas the former was an institutional change which involved the Bundesrepublik the latter was an independent solution on the Länder level. We will now turn to the pre-post comparison of brownfield exemption in Saxony-Anhalt and will begin with a brief and structured outline of its initial brownfield situation.

6 Pre-Post-Comparison of Brownfield Management in Saxony-Anhalt

6.1 The Initial Brownfield Situation in Saxony-Anhalt

In Saxony-Anhalt the initial brownfield situation was mainly a result of four major industrial activities before 1990:

1. Large-scale mineral mining, surface and deep (brown coal, copper shale or potassium salt) with profound intrusion into the hydraulic systems of the region.
2. Concentration of finishing industry based on these natural resources, in particular energy production, brown coal refining, metallurgical industry, potash industry, and chemical industry, in connection with old waste and industrial deposits, frequently in hollow moulds.
3. Formation of industrial agglomerates such as Bitterfeld/Wolfen, Halle/Merseburg (including Leuna), Mansfelder Land, and Zeitz/Weißenfels.
4. Industrial agriculture and factory farming.

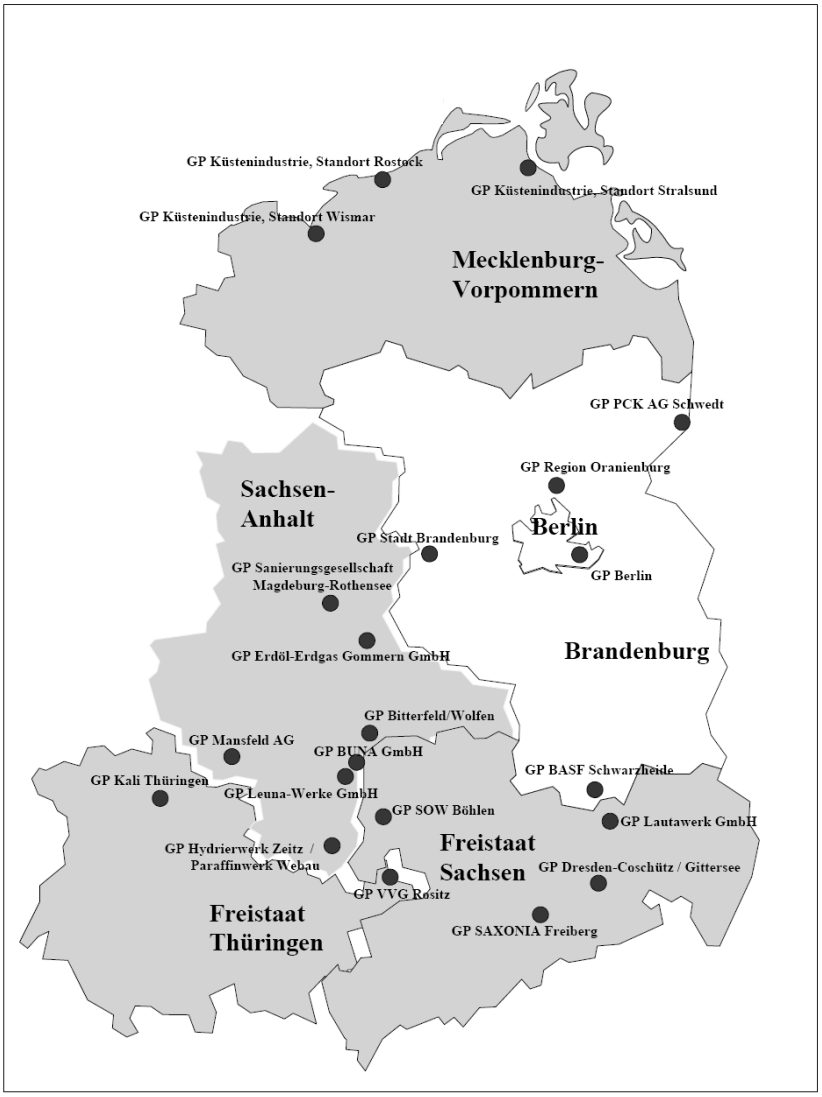
Industrial brownfield sites cover roughly 50% of all brownfield sites in Saxony-Anhalt and include among others chemical, metallurgical, petrol, plastics, food, mining, timber, paper, machine, and electronic industry sites. The inhomogeneous group of trade, services and utility services represent ca. 40% of all brownfield sites. The rest, roughly 10%, are agro-industry sites.[30]

The definition of "brownfield" (German: Altlast) in the German legal context is based on the notion of "harmful change to soil"[31] (§2 Abs. 6, German Soil Protection Act, German: Bundesbodenschutzgesetz). The definition includes former landfills (German: Altablagerungen) as well as abandoned sites (facilities, plants, etc.) where hazardous substances were handled, the latter ranging from industrial mega-sites to gas stations. Currently there exist 17,296[32] sites in Saxony-Anhalt which are suspected of harmful change to soil. This number includes 5,264 former landfills and 12,032 abandoned sites both which

[30] http://www.sachsen-anhalt.de/LPSA/index.php?id=36392, retrieved at 09-15-2010.
[31] German: schädliche Bodenveränderung.
[32] Since new facilities which bear the risk of harmful change to soil need to be approved of, new "entries" of brownfield cases stem from accidents and thus account for a fraction of the total amount of brownfields.

may be considered as pending cases of potentially contaminated land. Apart from these cases there are 3,202 cases of formerly suspected brownfields with a completed hazard assessment. Of them, 1,578 were assessed as brownfields and 1,624 excluded (Altlastenstatistik November 2009, Landesamt für Umweltschutz Sachsen-Anhalt[33]).

Figure 2: The Major Ecological Projects in East Germany[34]



Source: http://www.bmu.de/files/pdfs/allgemein/application/pdf/karte_altlasten_grossprojekte.pdf, retrieved at 09-15-2010.

With seven Major Ecological Projects (MEP)[35] Saxony-Anhalt features the highest concentration of brownfields among the new Länder. They cover an area of approximately

[33] http://www.sachsen-anhalt.de/LPSA/fileadmin/Elementbibliothek/Bibliothek_Politik_und_Verwaltung/Bibliothek_LAU/Bodenschutz/Altlasten/Dateien/altlastenstatistik.pdf, retrieved at 09-15-2010.

[34] The differences in color for Berlin and Brandenburg in this map have no significance in the context of this paper.

[35] Gommern, Buna, Magdeburg-Rothensee, Leuna, Mansfelder Land, Zeitz, and Bitterfeld-Wolfen.

47.83 km^2. In addition there are a number of larger non-MEP remediation projects[36] that cover 10.79 km^2 as well as numerous exemption related brownfields mainly former brown coal mining sites and non-exemption related brownfields.[37] According to the available land statistics for Saxony-Anhalt, it can be assumed that not more the 5.5% of the territory are covered with brownfields, potential brownfields or land suspected of harmful change to soil.[38,39] Of a total land of 20,446 km^2 the brownfields in Saxony-Anhalt extend to a maximum of 1,124 km^2. That is a square of side of approximately 33.54 km and much larger than the German capital Berlin which extends to roughly 892 km^2.

The contaminant situation of MEPs involves a highly differentiated variety of hazardous and harmful substances (contaminant cocktail) of dangerous contaminants which have extended vertically into the subsoil as well as horizontally over several kilometers via ground water aquifers.[40] The actual contaminant situation is often difficult to accurately assess because new sources may be discovered in the decontamination process. It is therefore in many cases not possible to predict the time needed to their completion. The decontamination of these sites often takes years and even decades because of their complex contaminant conditions, such as mixed and ultimately not quantifiable amounts of contaminants in the environmental matrices or because of hindered access to the hazard source due to, for instance, the coverage with construction.

[36] This group consists of three projects: 1) the large former landfills (German: Deponie) at Bitterfeld-Wolfen, Wittenberg-Piesteritz, Leuna and Buna 2) the so-called Addinol project of which one part is a former brown coal mining site and the other a former mineral industry site and 3) the brown coal mining hole Großkayna, now Runstedter See.

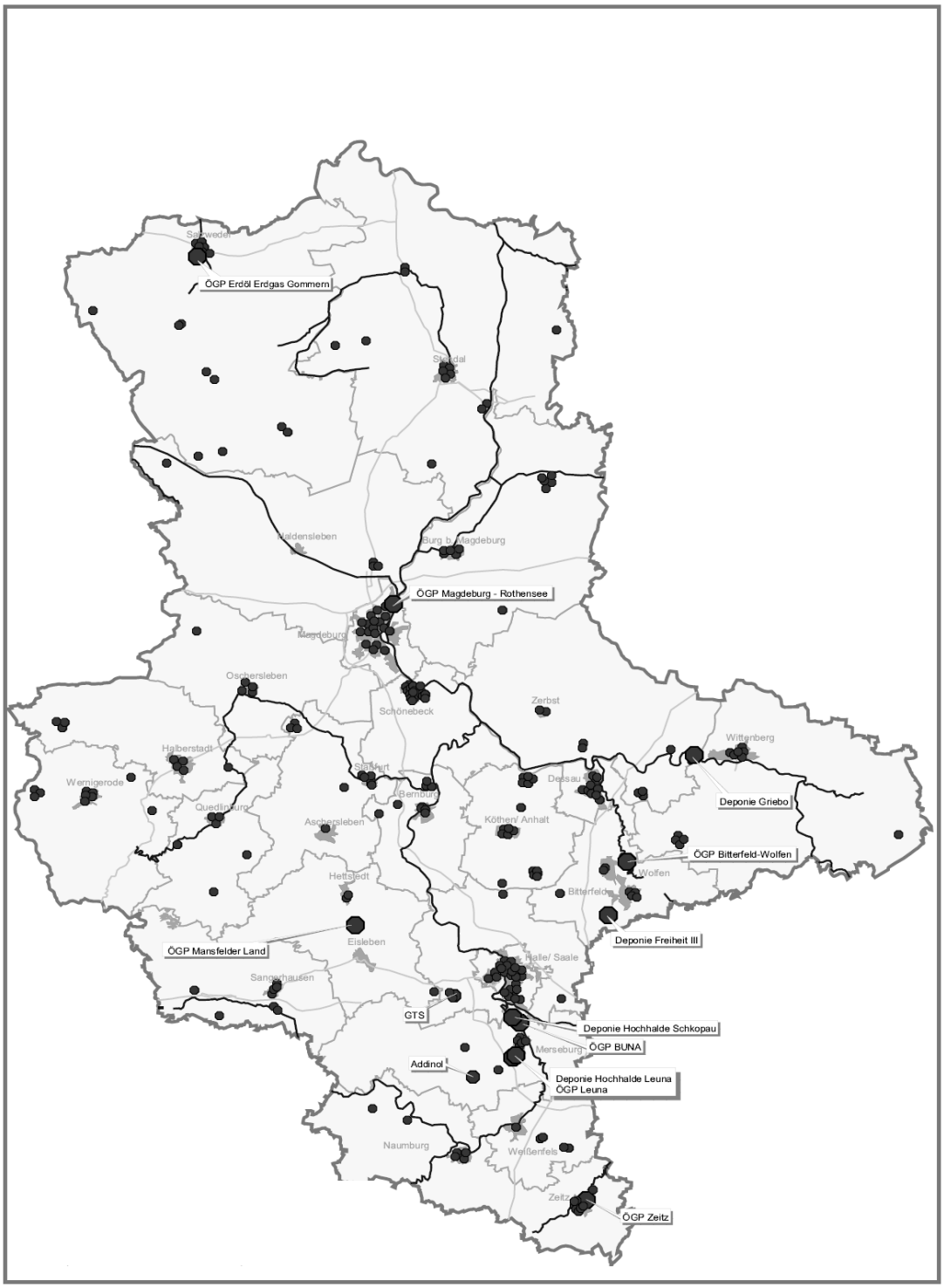
[37] A total of 10,860 applications for exemption were submitted in Saxony-Anhalt of which 6,513 were withdrawn and 2,259 settled. So far 1,004 exemptions have been granted and 971 declined. Currently there are 26 applications pending which are mostly related to the transfer of granted exemptions to another investor, i.e. a new applicant. A total of 87 cases are in suspension, mostly due to the absence of economic activity of the investor or unsettled property issues.

[38] This information was provided by the division of soil protection and brownfields of the State Office for Environmental Protection of Saxony-Anhalt.

[39] This includes exemption related cases as well as cases which occurred after 1990, the latter though registered as brownfields not being eligible for exemption.

[40] Among others these are phenol, sulfuric acid, oleum, sodium hydroxide solution, benzene, paraffin, dust of dump carbide sludge, mercury containing catalysts and other mercury compounds, and oils as well as a variety of chemical compounds such as DDT, HCH, Wofatox, Paraoxon, Parathion, PCDD/PCDF, heavy metals, hydrocarbons, herbicides, fungicides, etc. resulting from leakages, averages and war damages (Landesamt für Umweltschutz Sachsen-Anhalt 1996, vol. 20, pp. 19-22).

Figure 3: Focal Points of Examination and Remediation of Brownfields in Saxony-Anhalt



Source: http://www.sachsen-anhalt.de/LPSA/fileadmin/Elementbibliothek/Bibliothek_Politik_und_Verwaltung/Bibliothek_LAU/Bodenschutz/Altlasten/Dateien/laf_sanierung.pdf, retrieved at 09-15-2010.

6.2 Initial Decision-Making Structure for Brownfield Exemption in Saxony-Anhalt

Brownfield exemption for investors is a major task for the public administration. It involves large sums of money, has significant long-term effects on environment and economy thus requires a very high degree of professional expertise. In acknowledgement of the challenges the administration in Saxony-Anhalt has been subject to fundamental change, namely the federal lump sum payment and the establishment of the State Agency for Exemption from Contamination Liability (SECL). In order to bring about the effects of this change we will now compare the decision-making structure before and after the institutional change (sections 6.2 and 6.3).

6.2.1 The Responsible Parties for Exemption Related Projects

During the 1990s, Saxony-Anhalt was organized according to the model of the so-called "regional middle authority". The responsibilities of the exemption procedure were administered on three levels, the state government (German: Landesregierung), the ADAs in Halle, Magdeburg and Dessau, and the local governments (German: Kommunalverwaltungen).

In the initial decision-making structure, at least five parties were involved: (i) the state government, (ii) one of the ADAs[41], Dessau, Halle or Magdeburg, (iii) the local government, e.g. the city of Leuna, (iv) the investor, and (v) the project controller.

The *State Ministry for the Environment* in Saxony-Anhalt, was the supreme enforcement authority for exemption procedures. It had the supervisory control over the actual implementation and was supported by the affiliated *State Office for Environmental Protection* (German: Landesamt für Umweltschutz) in particular through technical knowledge and other brownfield specific services, such as collecting and administrating brownfield statistics. The ministry was also responsible for securing the Bundesrepublik's co-financing via Treuhand/FAUST. The ministry itself, however, did not administer or decide which applications were approved for exemption.

[41] From 1994 to 2003, Saxony-Anhalt was divided into 21 districts (German: Landkreise). Above this level, there were three ADA (German: Regierungspräsidien) in Dessau, Magdeburg and Halle. Each of them was responsible for a number of districts which were clustered into administrative regions (German: Regierungsbezirke). On January 1, 2004 these three administrative district regions were abolished by means of the act "Kreisreform Sachsen-Anhalt 2007" which has come into effect on July 1, 2007. It outlines a reform which among other things reduces the districts (German: Landkreise) from 21 to 11.

The three ADAs[42] were comprehensively responsible for the implementation of soil protection legislation and the actual exemption procedure (application, approval/refusal, administrative appeals, etc.). The ADAs acted as the *higher soil protection agency* (German: Obere Bodenschutzbehörde) and was thus responsible for the clarification of case-specific problems with respect to the responsibilities, duties and rights in the context of the execution of exemption projects as well as the assessment of the related economic investment schemes. They were the ultimate authority in cases of dispute between the involved parties, e.g. investor and project controller, of an exemption case. Furthermore, the ADAs were responsible for the project conceptualization and financial planning. For exemption related remediation projects they also acted as the contracting-party to the project controllers, the latter being usually consulting engineers.

The ADAs were the responsible institution for the local enforcement of the Federal Water Resources Act (German: Wasserhaushaltsgesetz) and the Federal Soil Protection Act (German: Bundesbodenschutzgesetz) and their implementation according to the respective statuary regulations of the Land. They acted as the *lower water and soil protection authorities* (German: untere Wasser- und Bodenschutzbehörden). Hence, they assessed the compliance of the remediation with these legal provisions.

Although the *investor* was exempt from the financial aspect of the liability, he remained the responsible party in the sense of §4 of the Federal Soil Protection Act and with respect to the realization of the decontamination and risk prevention measures. That is, he remained the contracting party for clean-up services and payments while the exemption notification entitled him to get reimbursement for his expenses.

The *project controller* – usually a contracted consulting engineer – acted as the on-site manager for exemption related remediation projects. He supervised the technical and financial details during the actual project and coordinated the activities of all concerned parties (ADA, contracted firms, local water authorities, and exempted investor). He had a significant part in the process of project financing, as he prepared the respective statement upon which the actual payment to the investor was approved of.

[42] As of January 2004 these three ADA (German: Regierungspräsidien) were replaced by the so-called State Administrative Authority located in Magdeburg, the state's capital.

6.2.2 Coordination among the Concerned Parties

The distribution of tasks and responsibilities among the concerned parties lead to a high level of frequent and simultaneous coordination in particular in the following areas:

The environmental risk analysis and determination risk prevention measures required the approval of the State Office for Environmental Protection, who was the technical expert for environmental issues as well as the approval of the ADA and the local authorities, who was responsible for assessing the measure's compliance with the legal provisions. The respective remediation project plan was to be developed by the project controller. Furthermore, it was required that the ADA gave its approval to the remediation project plan. In the case of dissent among local authorities and the State Office, the ADA had the last word on the remediation measures to be realized. It was necessary that Treuhand/FAUST was consulted about the remediation plan in order to secure the Bundesrepublik's financial contribution. In practice, for each remediation project approval was required from Treuhand/FAUST, the ADA and the local authorities.

The decision-making structure outlined above involved a high potential for dissent among the concerned parties and was thus an obstacle for an effective implementation of the exemption clause.

The federal lump sum payment implied the exclusion of FAUST as the decision-making authority. The establishment of the State Agency for Exemption from Contamination Liability (SECL) further reduced the intra-regional coordination requirements by means of bundling most exemption related responsibilities.

6.3 The SECL and the Federal Lump Sum Payment

The SECL is an incorporated institution under public law and hence under state government control of Saxony-Anhalt. Furthermore, it is subordinated to the supervisory and legal control of the State Ministry for Environment. Its core responsibilities are the "overall oversight and management of financing sources for *the remediation of contaminated sites in addition to the task of exemption from liability for residual pollution"* (Keil 2007: 2). Its objective is

eliminating hindrances to investment[43] by securing, remediating and dismantling brownfields according to the legal provisions for nature protection.

The specific rights and duties of the SECL are regulated in the *Act about the Entailment of an Agency for Exemption from Residual Liability* of October 25, 1999[44]. They comprise the following: the decision to grant exemption from liability for residual pollution, the development of remediation schemes, the assessment and determination of remediation measures, the supervision of the implementation of remediation measures and their financing as well as comprehensive financial planning (Keil 2007: 2). In short, the SECL has the power to decide upon all measures related to brownfield decontamination and revitalization in the context of support for private investment.[45]

The financial resources for the remediation measures are taken from special assets (German: Sondervermögen) which are mainly based on the Bundesrepublik's lump sum payment of 1.0 billion Euros. The financial resources are augmented by interest income from these assets, which have been invested into the capital market and produce returns that are skimmed periodically. [46] (Keil 2007: 3, LAF 2010) In addition there is an annual co-financing by the Land. The existence of such assets secures the financial requirements for remediation in the long-term and thus complies with the nature of remediation which in some cases takes decades to be completed (Keil 2007: 3, LAF 2010). This financial autonomy entails the full responsibility for allocating and administrating the assets which though invested are ultimately limited. Hence, the overall cost situation must always be taken into account alongside the financial planning of each single remediation project (ibid.).

The SECL's administrative council consists of two members of the Ministry for Agriculture and Environment, members of several state agencies as well as one member of parliament of each political fraction. The council provides the directives for the SECL's activities and supervises its management. The SECL is lead by one executive manager, Martin Keil, who

[43] http://www.sachsen-anhalt.de/LPSA/index.php?id=2492, retrieved on 09-15-2010.
[44] German: Gesetz über die Errichtung einer Landesanstalt für Altlastenfreistellung, http://www.landesrecht.sachsen-anhalt.de/jportal/?quelle=jlink&query=AltLastLAErG+ST&psml=bssahprod.psml&max=true&aiz=true, retrieved at 09-15-2010.
[45] The decision about liability exemption, however, can only be granted under reserve by the SECL and remains subject to ministerial agreement.
[46] All matters concerning these special assets, their purpose, administration, etc. are stipulated in the Act on the Special Assets "Brownfield Remediation Saxony-Anhalt" (German: Gesetz über das Sondervermögen „Altlastensanierung Sachsen-Anhalt") of December 5, 2000, http://st.juris.de/st/AltLastSoVermG_ST_rahmen.htm, retrieved at 09-15-2010.

represents the agency internally as well as externally, and who reports to the council. The SECL particularly employs experts with many years of professional experience in the environmental realm. Having started in 2000 with 36, the SECL now operates with 26 employees.

The current decision-making structure for brownfield exemption excludes FAUST as a decision-making body in financial matters. The district and local authorities remain responsible for the enforcement of the water and soil protection legislation.

6.4 The Performance of the SECL

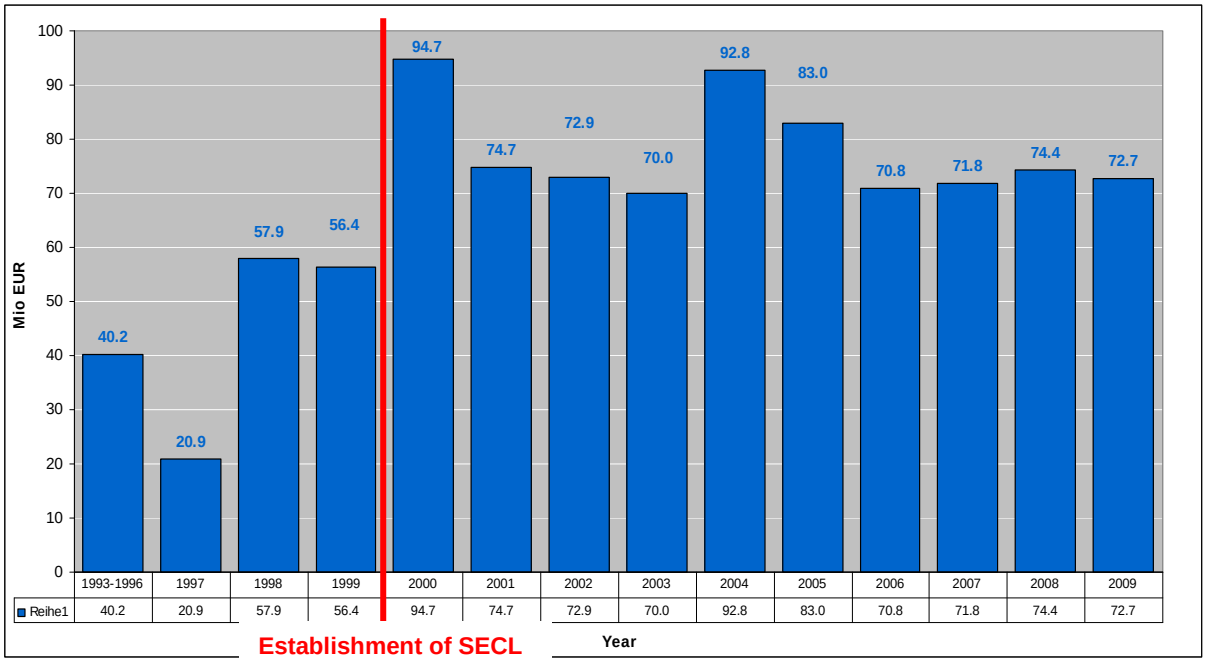
6.4.1 Success Indicators of the SECL

There are a couple of indicators for the SECL's successful work: the continuous and leveled funds flow and the progress in implementing exemption related remediation projects.

From 1993 to 2009, 953.2 million Euros were spent on brownfield remediation and revitalization of which 70% were of federal origin and 30% contributed by the Land. By the end of 2010 approximately 1.020 million EUR will be spent for exemption related brownfield management.[47] The SECL's funds flow in comparison to the funds flow prior to its establishment is a good indicator for the improvement of effectiveness. After the enactment of the EFA in 1990, the annual expenditures for exemption and remediation in Saxony-Anhalt did not exceed 57.9 million Euros. Since the SECL has taken up its work in 2000, annual expenditures have been established at an average of 71 million Euros. From the total expenditures, less than 20% were spent in the nine years prior to the establishment of the SECL:

Figure 4: Funds flow between 1993 and 2009 in million EUR

[47] http://www.sachsen-anhalt.de/LPSA/index.php?id=sanierungsschwerpunkte, retrieved at 09-15-2010.



Source: SECL (LAF 2010: 30)

Of the 1,578 cases which have been positively assessed as brownfields, 1,406 (89%) were considered remediated by November 2009 in the sense that their state complied with the requirements of the German Soil Protection Act. A number of 172 cases positively assessed as brownfields are yet not concluded (Landesamt für Umweltschutz Sachsen-Anhalt, Altlastenstatistik November 2009[48]).

There exist no probative statistical data about remediated sites before April 2003. There exists however a data cluster about sites which are no longer considered brownfields because they could either be excluded after detailed examination or because their remediation is concluded. The data is provided by the State Office for Environmental Protection (German: Landesamt für Umweltschutz), but has not been approved for publication in detail. They show, however, that roughly 21.7% of all so far registered potentially contaminated areas[49] were processed in

[48] http://www.sachsen-anhalt.de/LPSA/fileadmin/Elementbibliothek/Bibliothek_Politik_und_Verwaltung/Bibliothek_LAU/Bodenschutz/Altlasten/Dateien/altlastenstatistik.pdf, retrieved at 09-15-2010.

[49] In 2000 all potentially contaminated areas had been identified and registered. They amounted to a total of 20,988 cases and have been decreasing since then to 17,529 potentially contaminated areas in Saxony-Anhalt. This group, however, does also include contamination cases which occurred after 1990, but the number of 'new' contaminations as a consequence of accidents involving hazardous substances is comparatively low. Between 1996 and 2008 a total of 91 cases occurred which involved a total of 103.4 m^3 of hazardous substance, mainly mineral oil products, which could not be recovered (http://www.stala.sachsen-anhalt.de/Internet/Home/Daten_und_Fakten/3/32/323/32311/Unfaelle_mit_wassergefaehrdenden_Stoffen_seit_1996.html, retrieved at 09-15-2010).

the period from 1991 to 2000.[50] The State Chancellery of Saxony-Anhalt states that until now 3,500 ha of contaminated land have been remediated and made available for industrial location (Staatskanzlei 2010: 1).

6.4.2 Success Factors[51] of the SECL

As for the success factors, we identify several structural characteristics in the organization of the SECL.

Compared to the initial brownfield management situation the number of actors involved has been reduced from six actors (ministry of environment, Treuhand/FAUST, ADA, local government, project controller and investor) to four (SECL acting on behalf of the ministry, local government, project controller, and investor).

The institutional setting of the SECL is rather unusual in the German administrative context since it features a comparatively higher degree of *decision-making and financial competence*, i.e. the authority to decide on exemption applications and the respective remediation projects together with more financial autonomy and flexibility. This enables the SECL to respond in a timely manner to *unforeseeable changes* in the remediation process. The required response may, for example, be a new clean-up technology or the extension of the project period. Any response can induce changes in the cost situation so that adjustments of the assets can be necessary at several stages of a remediation project and within a fiscal year.

Furthermore, flexibility is also created by the bundling of experts in a small team. This facilitates the *accumulation and concentration of knowledge* about technologies, clean-up costs, performance ratings of clean-up technologies and engineers and the economic potential of investment schemes. Reducing the complexity of deliberation and thus time and effort is a prerequisite for quick response and an efficient decision-making process (reduction of transaction cost). In addition, a small team, currently 26 employees, and the means to contract

[50] The data was provided by the division of soil protection and brownfields of the State Office for Environmental Protection of Saxony-Anhalt.

[51] In this paper we will not discuss the potential pitfalls of such an institutional setting. Nevertheless it should be mentioned here, that the autonomy and the authorities given to the SECL do seemingly enable it to overrun other important interests in politics and industry. The SECL as part of the Ministry for Environment is, however, not completely autonomous. It is subordinated to the supervisory and legal control of the State Ministry for the Environment. Thus liability exemption can only be granted by the SECL under reserve and is always subject to ministerial approval.

external services where needed, contributes to preserving a relatively low level of operational cost.

A prerequisite for a functioning of such an organization for public tasks is a *clear definition of responsibilities* which in the case of the SECL are specified in the SECL act. It includes the definition of the responsible body, the sphere of responsibilities, i.e. all exemption, remediation and revitalization matters, as well as the limits of responsibilities, i.e. financial limits, organizational supervision by the executive council, annual budget approval by the state's parliament, and the coordination with other public authorities such as the communities and other authorities. The responsibilities involve in particular, the assessment of private investment proposals for brownfield sites, the power to directly deal with investors about remediation measures and investment schemes, and the power to independently contract remediation related services, such as e. g. the project controllers.

7 Bringing About Institutional Change in Brownfield Management

In the following, we will attempt to trace the institutional change processes in brownfield management in Saxony-Anhalt based on a qualitative interview study with its key players. Both changes emerged from inside Saxony-Anhalt's Ministry for the Environment and were created by civil servants working in the brownfield area.

In our study, we chose a narrative approach to aim at gathering the key player's perspective. We focused on their individual perspectives, opinions, personal experiences and considerations. With this we have intended to make a contribution to a better understanding of the reality of policy-making. Although the small-scale qualitative approach such as the present one cannot claim statistical validity, it can provide useful insights into social phenomena. Narrative approaches can enhance our understanding because they focus on motives and are thus essential to comprehending real world complexity (Tsoukas and Hatch 2001: 982). The particular circumstance of time and place of practice are taken into account, both which cannot be provided by standardized data which focuses on connecting types of behavior to types of situations (Redding 2005: 128, Tsoukas/Hatch 2001: 993).

The following is based on interviews which were conducted throughout the years 2008 and 2009. The interviewees were Vera Gäde-Butzlaff, Ingrid Häussler, Dr. Birgit Harpke, Eyk Hasselwander, Martin Keil, Helmut Peter, Dr. Michael Polk, and Klaus Rehda. Vera Gäde-Butzlaff is currently chief executive of the Berliner Stadtreinigung. She started working at the Ministry for the Environment in Saxony-Anhalt in 1998. Until 2001 she acted as department head "Brownfield, waste management, energy and emission and from 2001 to 2002 as State Secretary. Ingrid Häussler, member of the Social Democratic Party of Germany (SPD) was Minister for the Environment in Saxony-Anhalt from 1998 to 2002. Dr. Birgit Harpke is project manager in the SECL since 2000 and is currently responsible, among other tasks, for the MEPs Leuna and Zeitz as well as mining brownfield sites. Eyk Hasselwander is working with G.U.T. mbh, an engineering consulting company which focuses on remediation projects. Among other activities, the company has for many years been very active as project controller for MEPs. Martin Keil is executive manager of the SECL since 2000. Before he was director for the area of privatization at the Treuhand Agency and later the FAUST. Helmut Peter and Klaus Rehda were both working from the early 1990ies on with the ADA of Dessau. Klaus

Rehda was head of the department for water, waste and brownfield issues which was also responsible for the implementation of the exemption clause in the district of Dessau. In 1995 he became department head in the Ministry for the Environment of Saxony-Anhalt responsible among others for the entire brownfield area. Since December 2008 he is president of the State Office for Environmental Protection in Saxony-Anhalt. Helmut Peter is currently working with GICON GmbH, a consulting and engineering company, which among other things is specialized in the field of soil and water remediation management. Dr. Michael Polk is managing director of the Preiss-Daimler ChemiePark Bitterfeld Wolfen GmbH since 2002. The company is the chief provider for infrastructure and site-specific services for the businesses located at the industrial park Bitterfeld-Wolfen.

The following in particular focuses on the course of actions, thoughts and attitudes of the key players, namely Ingrid Häussler, Vera Gäde-Butzlaff, Klaus Rehda, and Helmut Peter. The reports and statements of the other interviewees serve as background information and in some cases as confirmation of our findings.

We will structure the interview study results alongside the following topics: the initial situation of brownfield administration (section 7.1), towards establishing the SECL and the lump sum agreement (section 7.2) and the result of the institutional change (section 7.3).

7.1 The Initial Situation

The first stage of implementing the EFA and in particular the exemption clause consisted chiefly in administrating applications for exemption. For the regional administrative authorities several problems arose from this process. On the one hand had the three ADAs in Dessau, Halle and Magdeburg to deal at once with a total of 10,860 applications which had been submitted by March 30, 1992. After the deadline, the applications were to be decided upon quickly in order to promote the privatization of brownfield sites.

That turned out to be rather difficult since brownfield exemption was a novelty and entirely unfamiliar throughout the German public administration. The authorities in East Germany could not draw on any former experience for important problems such as, for example, eligibility criteria which were in line with the law and would help assess investment schemes or remediation measures. The general conditions were also unfavorable since the administrative entities of the new Länder were still in formation and yet short of personnel that was familiar with administrative procedures in a federal state. Helmut Peter describes the early stage at the district authority in Dessau as follows:

> *The first stage was an administrative act – we had to implement the exemption from residual pollution. We had – I believe – 2,100 applications until the deadline. And at this stage we completely broke new ground. […]During the initial phase of building up the administration in East Germany there was administrative cooperation with the western states. For Dessau we had […] Kassel[52] and many approaches which were established here had been derived from there. But in the area of brownfield exemption there was no experience available at all. It had never existed in the west. No. And things certainly weren't very easy in the beginning. It [the first stage] was affected by legal issues and the businesses brought their lawyers and we were – let's put it this way – rather challenged. This stage, let's say, until 1994, 1995 everything was affected by obtaining exemption notifications as fast as possible and they could only be given to potential investors and came with obligations, etc. (Peter, interview on 06-10-2009, lines 77-85, 89-100)*

Klaus Rehda describes the situation as follows:

> *And it was a very exhausting time. And then we, the administrative district authority (ADA), had been left alone a little by the Ministry for Environment, because the Land thought: "Oh, well things will work out somehow." And the brownfield area in general at the ministry as well as at the administrative district authority (ADA) wasn't properly staffed. It had been underestimated from the outset. […] The brownfield unit was originally staffed with Mr. Peter only, who then wore himself out. And it could be achieved only with great trouble to*

[52] Kassel is an important municipal of Hessen, one of the larger West German Länder.

deploy people from other units now and then and again. It was a constant annoyance and we could not keep up in terms of personnel. (Rehda, interview on 06-22-2009, lines 111-125)

It was apparently also difficult to judge every case in line with the intention of the law:

This decision to grant only to investors who would generate jobs and who would not go to the open country side but realize their investments at brownfield sites, had to be established first because one would have liked nothing better than to keep every investor. (Peter, interview on 06-10-2009, lines 142-45)

In addition to the workload within the ADAs, there were also many implementation issues resulting from the cooperation between these authorities and the Treuhand Agency, later the FAUST, who were managing the financial contribution of the Bundesrepublik.

7.1.1 Cooperation Problems

The Treuhand Agency/FAUST dealt directly with the ADAs in order to come to consensual decisions about the measures and financial volumes of remediation projects. The situation, however, was affected by contradicting incentives between the parties and became in general quite controversial.

Since 1991 we were, I'd say, in a constant feud with the Treuhand and the FAUST when discussing about what should be done in terms of remediation on-site. And this was an endless process, because each time, the administrations blocked one another. (Rehda, interview on 06-22-2009, lines 55-58)

When I started [at the ministry] the old regulation still existed, i.e. a larger share of remediation projects is contributed by the Bundesrepublik, respectively the FAUST, and a smaller by the Land. […] And the observation was indeed that the question "What is necessary?" was mainly argued, so that remediation virtually did not take place. Instead expert reports were issued. An awful lot of time was consumed with these discussions where the Bundesrepublik, may be naturally, focused mainly on the money, while the Land wanted to push the issue. (Gäde-Butzlaff, interview on 11-18-2009, lines 104-114)

There existed a sort of project working group. Bitterfeld was a Major Ecological Project. That was a progress. The establishment of these MEPs was a big progress compared to the general practice of remediation, because they, as an area, – and Bitterfeld has an area of 13 km^2 – are completely subject to brownfield exemption. […] The entire MEP had been assessed as in need of remediation and with this the necessity for remediation was approved by the Bundesrepublik. For the implementation of measures this wasn't very useful though, because we had to coordinate every single measure with the Bundesrepublik. And each time the same argument was brought forward: "Is this really necessary? Does it serve averting a danger?" And so on. And when it came to these MEPs, they didn't focus on single site areas. It became very difficult to prove for example that any single measure, e.g. to extract any contaminant, was necessary for only one area, because then they said: "Yes, but to extract anything from this small patch will be immaterial for the overall contamination of Bitterfeld. It will not make any difference to the entire state [of the site]. Insofar this measure is actually not necessary at all." And we found ourselves for years in a conflict with each other, which of

course we intended to resolve by commissioning a master plan for remediation from consulting engineers. Still we had to negotiate every year with the Bundesrepublik: How much money will be provided for this? Even the number of monitoring points was debated, and, and, and. Well, it was a constant point at issue with the FAUST. And well, there were also very specific legal issues. We always had the impression that the Bundesrepublik wanted to economize massively. At the beginning of the 90ies expert reports from renowned consulting engineers estimated for Bitterfeld alone expenditures of several hundred million Euros for remediation measures. And the Bundesrepublik of course, levered this out by legal opinion from renowned law firms which stated: "Now, the ground water is not worth protecting in general. And specific measures cannot be derived from contaminated ground water as such. We need prove for the extension of ground water and for imperilment of sanitary zones of well protection, and, and, and." […] The Bundesrepublik, also in terms of money, with the FAUST in its background, had very much the advantage over us, both, as regards to the lawyers as well as with regards to the consulting engineers. They simply had more money and with this they could to some extent buy better expertise. It is as simple as that. […] And on our side the whole problem in the beginning had been underestimated a little, also by our Land's government. It was believed that this is something that runs by itself. It is put down in the German Unification Treaty and will work out alright. But it simply wasn't like this. And it quickly came to the point when the firms on-site were very unsatisfied. They figured out quickly that although they had an exemption nothing actually really happened towards remediation. And of course had they imagined things differently. And there were these issues at point: "Well, when does remediation begin? When does it end?" for example tearing down contaminated buildings: "Is that part of brownfield remediation? Or is it simply a reconstruction measure, which falls within 'investment subsidies'?" And nothing but such issues was disputed. And it was, I say, a grueling time. (Rehda, interview on 06-22-2009, lines 62-111)

And that was the big problematic – also at Buna – and it was very decisive for the privatization process: How is that brownfield problematic handled? Does the future investor have to put money into this or are there funds from the Bundesrepublik or is there an exemption or what is the solution? The private investments suffered from this. It took way too much time, because the brownfield exemption wasn't resolved. Though even the exemption had been granted, the process – how does the process work in order to make things happen in practice – was indeed very complicated. And I experienced that closely. And we had – I believe – seven decision making steps before one came to an actual decision – [it] was all decided in Berlin – that the remediation concept could actually be realized. And that the people from Berlin were always involved in the decision, deferred things tremendously. The meetings had been simply postponed because one person could not attend etc. so that I said to myself, when I transferred to the ministry: We definitely have to cut short the process. And that was actually the driving force. (Häussler, Interview on 12-21-2009 lines 225-239)

The cooperation between the ADAs and the FAUST apparently suffered from the uncertainty about the appropriate application of the legal provisions on both sides which was on the one hand caused by the technical complexity of brownfield remediation projects and on the other hand by the sheer novelty of the exemption clause. Since the Bundesrepublik's financial obligations were larger in proportion – 75% for MEP projects and 60% for all other remediation projects –, it had very strong incentives to moderate project volumes. The issues between the ADAs and the FAUST were caused mainly by a structural incongruity so as to inhibit a material improvement of their cooperation.

7.1.2 Financial Inflexibility

Another issue of high importance to the implementation of the exemption clause and in particular to bringing forward remediation projects was the access to financial funds. We have introduced the problematic in section 5.2 and have identified that the involvement of the various administrative levels makes it extremely time consuming to manage changes in financial needs. This inflexibility posed a serious problem for remediation projects since they were frequently subject to substantial cost changes:

> *A brownfield remediation is not a straightforward matter. From the preliminary examination to the actual remediation measure to completion it is subject to many changes. Usually it costs a lot of money and there may be many changes also in the financial requirements. For an administration this is one of the worst scenarios to be posed, because it always acts within cameralistics […]. That much money is assigned and then as less changes as possible should occur. For brownfield remediation this is a poor state. One may assign the moneys rather highly, even when only half of it is spent in the end. […] And then critics arise of course, since this certainly leads to considerable distortions of the Land's and the federal budget. (Rehda, interview on 06-22-2009, lines 270-283)*

The financial system's inflexibility could seriously obstruct ongoing remediation measures:

> *At first we often made a plan. The consulting engineers said: "Yes, well, this will cost 10 million." Then the dredger dug and it turned out that things were a lot worse and that special protective actions had to be taken and this and that, and then it were easily 20 [million Euros] and this could not be planned budget-wise. And to approach the finance guy and tell him I need 10 million more is an incredible disaster for him. In this respect it was already clear for us that we would not manage with normal administrative procedures. Particularly since the normal administrative procedure stipulates specific sums – they are comparatively low – for which the approval of all administrative levels is required. […] Now, if the regional administrative office plans a measure und it turns out that instead of 5 million the measure costs 5 million plus 50,000 more, an additional request would be necessary, which would have to pass the department head in the regional administrative authority, who'd have to approve of any sum starting from 50,000. Then it would have to pass the State Ministry of Finance. There it had to be signed and only this one process, to have these 50,000 authorized, required several months. But on-site they could not wait for the money to get authorized, because the dredger was there and had to complete its work and could not be paused until it was clear whether the money would be provided or not. […] There is also a rent charged for the dredger. It could not be brought back into operation later, and, and, and. There are all kinds of obligations attached [and] to response quickly and flexible in the case of these measures – the administration was not really made for this. The more so as there also prevails a strong separation of responsibilities: Well, there are the budget people, who actually plan these financings and then there are the specialists, who plan the projects and they are strictly separated from each other and so everything has to go through all hierarchy levels. Meaning that, the specialists by submission have to carry their projects through to their department head and then it is passed to the budget department. And there it has to pass from top to bottom. It takes a lot of time and a lot of energy to justify again and again: Now why this and that way, etc. It is simply impossible to get every change in the ongoing process through this procedure. It just takes too long and the system is simply too inflexible. It works when one needs to buy new paper or office furniture or other things to which whether it takes*

three weeks longer or not is inessential and of which constant changes are not to be expected. But for these brownfield remediation measures this system was really very inefficient. That simply has to be acknowledged. (Rehda, interview on 06-22-2009, lines 289-329)

The incompatibility problem albeit several efforts could not be solved within the existing administrative structures:

Because of this problematic, that is, that we could not get the matter under control budget-wise – and with tender one is obliged to enter into certain contracts and to comply with certain regulations – it had become more and more difficult to deal with this in the regional administrative authority. I had tried several times to make a submission for an independent budget plan by which we could have operated on a year transcending basis. (Peter, interview on 06-10-2009, lines 203-208)

The financial issues became serious not only for Sayony-Anhalt's administrative budget. It also extended to the Land's finances and even lead to distortions of the federal finances.

We [the State of Saxony-Anhalt] had to finance a Länder share to complement the Bundesrepublik's share and in the beginning that share had been determined to be rather high. […] We had about 20-25 million Euros assigned in the Länder budget and they were never used. We usually got to spend 4 to 5 million at most, but for a fiscal policymaker this is always some kind of result […]. They could have disposed the money otherwise, because in the end a money heap is left and then every year we had the discussion. It was an urgent issue and that was also understood by the state parliament (Rehda, interview on 06-22-2009, lines 485-495)

The FAUST realized this as well. The funds which had been forfeited on our side had of course been planned on their side as well. They always had to co-finance and naturally we always had arguments: "What are you doing to us? Our money is gone now. Your money is gone now." The main argument was not about the substantial matters any more. It was all about money and how much we should plan for next year and whether that was really reliable. (Peter, interview on 06-10-2009, lines 264-268)

7.2 Towards Establishing the SECL and the Lump Sum Agreement

The problems arising from implementing the exemption clause for the ADAs in Saxony-Anhalt generated an enormous pressure towards an improvement of all brownfield related processes:

> *It was a pressing matter and that was also understood by the [Länder] parliament. Something had to happen in this area. Above all since the businesses had started to complain. People in the districts were displeased. Things did not make progress and so on. (Rehda, interview on 06-22-2009, lines 489-492)*

In the following section we will reconstruct the actual political process which led to the federal lump sum payment and the establishment of the SECL. Both institutional changes were results of policy-making of a few political key actors. Contingent factors, however, i.e. favorable political circumstances, such as e.g. a fortunate political climate for environmental concerns in Saxony-Anhalt, made a window of opportunity for institutional change and were thus crucial for the success of these key actors.

7.2.1 The Contingent Factors

One of the contingent factors favoring the federal lump sum agreement was the impending closure of the FAUST – as of January 1st, 2001 – which entailed that the Bundesrepublik's financial engagement in brownfield management had to be reorganized.

Another factor favoring the establishment of the SECL was the transfer of Klaus Rehda in 1995 to the State Ministry for the Environment who since 1992 had been department head of water, waste and brownfields in the ADA at Dessau. In the ministry he became head of division responsible, among other issues, for hazardous waste, brownfields, and soil protection.

A supporting factor was the political climate in Saxony-Anhalt in the late 90ies. From 1994 to 1998 a Red-Green-Coalition of the Social Democratic Party of Germany (German: Sozial Demokratische Partei Deutschlands – SPD) with the Alliance '90/The Greens (German: Bündnis 90/Die Grünen) governed in Saxony-Anhalt. One of the consequences of the Land's election was that in July 1994 Heidrun Heidecke, a green politician, was appointed minister for the environment. Furthermore, did Wolfram König, also member of the Green party act as the State Secretary of the Ministry for the Environment in Saxony-Anhalt (1994-1998).

Thereafter a minority government by the Social Democratic Party of Germany governed Saxony-Anhalt from 1998 to 2002 and the Ministry for the Environment was headed by Ingrid Häussler, member of the SPD from 1998 to 2000 and then by Konrad Keller, also member of the SPD, from 2000-2002. [53]

The establishment of the SECL and the lump sum agreement took place almost simultaneously and were concluded between January 2000 and October 2001. Both were brought forward by a group of individuals working on several hierarchal levels within the Ministry for the Environment. They were united in the strong interest in resolving the state's brownfield management issues. Among these were Klaus Rehda and Vera Gäde-Butzlaff the driving forces supported by the ministers Heidrun Heidecke and Ingrid Häussler.

For a temporal overview a chronology of the brownfield related events is provided below:

[53] To simplify matter we refer to the Ministry for the Environment. That is, however, not the formal designation for the ministry responsible for environmental matters at a time. Between 1994 and 2002 some changes in the organization of ministerial functions took place in Saxony-Anhalt which resulted in changes of responsibilities for the environment: 1994-1998: Ministry for Environment, Natural Protection and Regional Planning, 1998-2000: Ministry for Regional Planning and Environment, 2000-2002: Ministry for Regional Planning, Agriculture and Environment. The latter was the result of the merger of the Ministry of Regional Planning and Environment with the Ministry of Agriculture which had already been assigned to Konrad Keller.

Figure 5: Chronology of Brownfield Administration in Saxony-Anhalt

Time		Germany	Saxony-Anhalt		
			Administration		Government
1990	June 29	Environmental Frame Act (EFA) (*exemption clause*)			
	August 31	Unification Treaty between the two German Nations			
	October 3	German Reunification			
1992	March 30		Deadline for application for exemption from residual contamination liability for investors		
	December 1	General Administrative Agreement between Bundesrepublik and Länder on the financing of brownfield issues	Klaus Rehda and Helmut Peter work at administrative district authority in Dessau		
1994	December 31	Discontinuation of Treuhand Agency operations			1994-1998 Red-Green Coalition Heidrun Heidecke (Greens) is Minister for the Environment
1995	January 1	Establishment of FAUST			
1996			Transfer of Klaus Rehda to Ministry for the Environment	Political process towards SECL	
1998			Vera Gäde-Butzlaff department head "Brownfield, waste management, energy and emission control" in the Ministry for the Environment		1998-2002 Minority Government by the Social Democratic Party of Germany (SPD) 1998-2000 Ingrid Häussler (SPD) is Minister for the Environment
1999	Sept. 17		Parliament Majority in Saxony-Anhalt for Establishment of SECL		
	October 25		Act about the Entailment of an Agency for Exemption from Residual Liability		
2000	January 1		Establishment of SECL		
	December 5		Act on the Special Assets „Brownfield Remediation in Saxony-Anhalt"		
	December 31	Discontinuation of FAUST operations			
2001	July		Vera Gäde-Butzlaff appointed State Secretary in the Ministry for the Environment	Lump sum negotiations	
	October 23		Lump Sum Agreement with FAUST and Bundesrepublik		

Source: Own

7.2.2 Initiating the Political Process

As a consequence of his experience with brownfield management on the district level Klaus Rehda was convinced that personnel and expertise were the most important factors for tackling the brownfield issue and for negotiating successfully with the FAUST.

> *The FAUST had quickly built up strong structures. They hired people, and for Bitterfeld alone they had the double or three times more regular employees than we [had] in the regional administrative authority. They were vastly superior in all matters and of course tried to dominate the state [Saxony-Anhalt]. I brought this experience with me when I came to the Ministry for the Environment. (Rehda, interview on 06-22-2009, lines 125-131)*

> *Well, for one it was clear that we had to achieve to be on par with the FAUST. That is, the first step was that in the ministry we managed to assign budget money and to buy more expertise from outside. For example we commissioned the renowned law firm Gaßner, Groth, Siederer & Coll. who then advised us legally. (Rehda, interview on 06-22-2009, lines 175-181)*

With the perspective of the closure of the FAUST the idea of an organization for brownfield management for Saxony-Anhalt was generated:

> *The first step we made in the ministry was to acquire external expertise – law firms. And secondly, we commissioned a type of study from Pricewaterhouse Coopers on the appropriate institutional form for management of brownfield remediation on the whole. How should it be executed? What would be feasible, if something is to be brought about by the Land? That is, if brownfield remediation is operated on a large scale. What would be the best way to organize this? We realized that the administrative district authorities (ADA) as middle authority were to some extent overwhelmed with the entire process […] (Rehda, interview on 06-22-2009, lines 265-274)*

> *[Pricewaterhouse Coopers] suggested an independent organization. Whereas we had instructed them […] we did not just let them get started. We said: "We would like to have some kind of institution, which would be attached to the state and not completely autonomous." Well, we did not say: "You may plan in the free space." But said: "It would be good to have a limited (German: Landes-GmbH) or some kind or organizational form subordinated to the state which provides specific services for the state. (Rehda, interview on 06-22-2009, lines 336-342)*

Initiating the actual political process itself required convincing all important individuals on the Länder level.

> *How does this work? Firstly, one has to convince the top of the house. One has to approach the state secretary and the minister and has to convince them that this is a good solution for the state and worth while to fight for. The next step is to communicate this to the prime minister and the minister of finance, so that they were also convinced of the concept (Gäde-Butzlaff, interview on 11-18-2009, lines 185-191)*

And a public-law institution which operates independently, precisely a state agency, seemed a very good legal form and then we established a dialogue toward this. That was, of course, not so easy, because first of all, there are always these positive authority conflicts: "We can do that as well!" It was of course important for us to make explicit that this is really a complex and particular task. That it cannot be carried out neither within the normal ministerial bureaucracy nor by the administrative district authorities (ADAs) (Gäde-Butzlaff, interview on 11-18-2009, lines 144-151)

Furthermore, the knowledge about how to raise the attention of political-decision makers proves to be an essential ability. The key actors had realized that external expertise was necessary in order to emphasis the urgency and importance of the brownfield issue. Moving the brownfield problematic on the parliament's agenda required that it be distinguished from the many other problems which were also waiting to be addressed by the parliament.

And we then conveyed that to the political sphere. And it must be said, that this is always interesting. When one – as an administration – writes something down by oneself, making a referral or something like that, as Ministry for the Environment, it certainly has importance … some importance. But if you commission an external expert opinion from renowned law firms or Pricewaterhouse Coopers and refer that, it has a very different importance. Well, it is rated much higher. Yes, that is really the case. Well, a member of the state parliament, who finds such an expertise on his table, says: "Ah, there must be something to this, if even the externals say it." If a ministry official writes it down, they rather raise their eyebrows. But with an external expertise one can often achieve more. From my experience it has been often the case that we could achieve more with an external expertise than with our own thoughts, which were just as good. We could have written the same thing by ourselves. But if we had let externals write it down, it was more effective. And that lead to this discussion right up to the state chancellery and it was also debated in the state parliament. (Rehda, interview on 06-22-2009, lines 381-396)

In the process flexibility and creativity were required in order to keep the process ongoing and to bring it to a parliament decision. That required in particular reacting to developments which influenced the process but which had no thematic similarity with the actual brownfield issue.

Meanwhile the discussion about whether a limited (German: Landes-GmbH) would at all be the appropriate legal form emerged. […] That was because state-owned limited enterprises had by then fallen into disrepute. There had been a scandal with a limited. Well, the state had established a limited in Wittenberg for the promotion of some [Martin] Luther memorials and funds – they had not been peculated – but something went wrong, some moneys had drained away and, and, and. And there had been a big scandal in the press and seesaw. And after that the word 'state-owned limited' was more or less a red rag to all concerned parties. And back then, together with [Mr.] Gaßner [senior partner of the law firm Gaßner, Groth, Siederer & Coll.], we looked for a solution. How can we save this, abandoning the limited but preserving its advantages? […] And then we stroke on the idea of the 'agency'. Okay, that is actually something which is equivalent and it has indeed similar features […]. (Rehda, interview on 06-22-2009, lines 397-423)

7.2.3 Putting the SECL-Bill Through

Putting the SECL-bill through parliament involved a highly complex and intense process. In order to secure the passing of the bill a pro-active dialogue with all decision-makers and other concerned parties was necessary, such as the Audit Office of Saxony-Anhalt (German: Landesrechnungshof Sachsen-Anhalt) and the Federal Ministry for the Environment.

> *And then [Mr.] Gaßner simply wrote down various alternatives and then we just discussed and then it had to be conveyed to the parliament. And that to begin with is not a very popular discussion in parliament, that the parliament should significantly lose ground in any matter. And therefore the agency alternative was also the easier option for us to argue for in the parliamental sphere. (Häussler, interview 12-21-2009, lines 393-398)*

> *And then we said: "Agency is also fine. We can also live with that." And then of course an agency law had to be made. A proper law was […] for now to be worked out. That was also done for us by Gaßner, this SECL-bill. And in order to get this bill right for the political arena – the parliament – it was necessary to talk to all involved persons. It was not the case that we – the Ministry for the Environment – went to the market with that bill and said: "So, this is it and now you may deliberate about it", but there were rather intense discussions. Well, the secretary stood well behind us in all these questions and […] handled the dialogue with each fraction, SPD, CDU, Linke etc. represented in the parliament. Very important was the discussion with the state's audit office because they had always been very critical towards these things. The discussions even extended to the FAUST and to the Federal Ministry for the Environment. To them it was presented also in the run-up so that they would not somehow be awkward about it or think that we would do something which would cause them trouble or whatever, so that they would be reassured. Well, it was very intensely prepared and when it came to parliament everything and what it [the bill] meant was clear. There were several readings. Well, it was then deliberated in various commissions. There were also a couple of changes. (Rehda, interview on 06-22-2009, lines 423-443)*

> *And, I'd like to say, that one had to assure oneself of one's own people, that they would support one, because it involved divesting the state parliament of a couple of competences. And then I had – let's say – delegates of other fractions, of whom I knew that one could talk with them about this. […] Well, in the first place I always turned to people of whom I knew that they were experienced with the practical side and that they could appreciate it and see that this was not a political …, no impulsive action, but with a real background. […] Many things [can] also happen in the parliament canteen. One runs into one another … Or there are a lot informal talks at parliament sessions. (Häussler, interview 12-21-2009, lines 722-738)*

The enactment also involved an institutional setting which allowed for protecting the different political interests which could potentially be affected by establishing the SECL. This was done by instituting an administrative council as supervisor of the operations of the SECL.

> *An administrative council was established. It had not been imperative. For the State Agency [SECL] the administrative council was not mandatory. But it was done and the council was provided with equal representation of members of the fractions. So they appointed a member of each fraction of the political parties. They also appointed someone from the administrative*

district authority (ADA), one from the local authorities, because these were all institutions which had been a little skeptical. […] We caught them of course by having the critics sit in the [SECL's] administrative council. It was headed by the state secretary so that it was relatively open and they discussed articulately and openly about its objectives. And quickly everybody was reassured and realized "Oh well, this is actually not a bad thing, we are rather well-placed with this." (Rehda, interview on 06-22-2009, lines 451-465)

For the time being it was also crucial for the actual passing of the bill to limit the existence of the SECL to ten years. This served as reinsurance for the political decision-makers, e.g. in case of its failure.

The offer was: "No, this [SECL] will be reviewed. This is not per se a permanent institution." Well, there was the concern that this would make itself independent and that they would not execute things in a timely manner, because they would not want to phase out their own jobs. But I did not consider this concern to be real, also because of the range of functions. But that was part of the committee meetings. And I think that this had been addressed with this clause. (Gäde-Butzlaff, interview on 11-18-2009, lines 165-171)

7.2.4 Solving the Funds Problem

The actual process of acquiring a lump sum payment from the FAUST's budget was triggered in the late 90ies by the pending closure of the FAUST and by the realization on the part of the state that in order to create an effective exemption and remediation procedure the funds need to be controlled by the state itself.

And then during discussions this idea came up – it was actually the FAUST's idea but I agreed – that the whole should be lump summed, so that the state would have the freedom to solve the brownfield issue in a justifiable manner and without this constant coordination process. (Gäde-Butzlaff, interview on 11-18-2009, lines 118-122)

The [lump sum] originated a little bit, I think, from both sides. Well, the Bundesrepublik was under pressure, since they had decided to remove the apparatus of the FAUST. […] And there were examples from other areas. For example in the brown coal area […] where large blocs of money had been given as a lump sum and so they said: "Can we not have a similar agreement with the Länder in the brownfield area"? And at the first attempt all Länder said: "For heaven's sake, that's completely impossible! No one can estimate what's in the subsurface. We hadn't even examined yet. No one can estimate what kinds of dangers lurk in the subsurface!" And so on and so on. With the result that for the time being the Länder were reluctant and after that the Bundesrepublik became the forerunner of the lump sum and always said: "Jesus, do it! Do it!" And the Länder always said: "No". Because of anxiety […] because they were anxious of selling less than fair value and that the money would not suffice. (Rehda, interview on 06-22-2009, lines 509-522)

The internal reservations of Saxony-Anhalt towards a lump sum payment were mainly caused by the uncertainty and unpredictability of the actual cost for exemption and remediation. In

order to overcome these reservations for the moment smaller lump sum payments were made as some form of a test phase for two Major Ecological Projects only.

> *The level of suffering was very high, I'd say. […] Well, hadn't we made the lump sum agreement we, albeit the establishment of the SECL, would still have quarreled constantly with the FAUST. That would not have been evitable and the organizational change on the part of the state only, would not have put an end to the conflict with the Bundesrepublik. And therefore we considered and said: "This lump sum offer by the Bundesrepublik is actually not so bad. If we can manage to get enough money out of it, this can only be good for us." Then we said: "Let's try this with one, two examples" and we preponed two Major Ecological Projects, Mansfeld and Rothensee-Magdeburg. We said: "We know the most about these two. We make a lump sum for them as single projects." And then we made, I don't know that anymore, I believe Mansfeld was 60 million and Rothensee 30 or 40 million. Well, we then made single lump sum agreements and figured: It didn't work badly at all. […] These two single projects were still in the hands of the ministry. The actual general [lump sum] agreement was handled by the SECL. But these first two projects were still supervised by the administrative district authority (ADA). They all said: "Goodness, don't do that! Who knows what we'll find or which waste dumps we'll have to remediate later, etc." Then, we in the ministry, said: "Oh well, that may all be, but in the end it's us, the responsible administration, who determines what is to be remediated and what not. In this respect this is after all to our advantage. Of course there are certain necessities and we'd have to comply with certain bench marks, when it's about achieving specific thresholds, […]. But on the other hand we also have scopes and we can use them." And we realized, from the lump sum examples that the FAUST was quite serious about the general lump sum and also willing to make concessions in order to move forward. Thus, one did not quarrel doggedly about every single point, the way we had to argue with the FAUST before about remediation measures. Also because the lump sum was of course negotiated on a completely different level. [Claus-Peter] Pietras[54] was director back then or one of the executive directors at the FAUST. He, of course, negotiated in a different way than the responsible commissioner […]. (Rehda, interview on 06-22-2009, lines 569-604)*

The primary interest of the state was to secure a long-term and solid financial basis for the operations of the SECL.

> *Then we said, after these two projects were concluded: "Now, let's make the general agreement, that is, a lump sum for the big picture" – The more so as we also still had the numbers of 1990 in our heads. There had been utopian notions of about how many millions that would cost and then we figured: It actually had been less expensive. Not as bad as we'd thought initially and exactly that [that it would not be as expensive as expected] might happen now as well and now exactly this has happened, to tell the truth. In this respect the lump sum agreement, which we made in 2001, was actually rather a success. (Rehda, interview on 06-22-2009, lines 606-613)*

> *And we fought there, because we said: "The Land is always short of money and there is a risk of being fettered again, of that the funds cannot be allocated. And if the money is once allocated so that one does not need to have that discussion each time." […] I believe that that was crucial for our agreement to the lump sum payment, that special assets*

[54] Claus-Peter Pietras was by then head of the department "Environment and Brownfields" at the FAUST.

[Sondervermögen] could be established. (Häussler, interview on 12-21-2009, lines 997-1007)[55]

In the actual negotiation process with the Bundesrepublik and the FAUST Saxony-Anhalt benefitted greatly from the Thuringian example.

And the first to do this were the Thuringians who from my point of view – I shall put it bluntly – concluded a relatively poor agreement. They were […] talked into additional services which the Land had to take over with this agreement. For example the remediation of the potash mines in Thuringia and so forth, which after the event turned out to be very, very expensive so that the money is nothing like enough. We were positioned differently. We said from the first: "If we make a lump sum we have to try to make this really adequate for the state. We have to get as much money as possible, but few responsibilities […]." The Bundesrepublik of course noticed that we seriously wanted to do this and was very interested and also tried to squeeze in as many items as possible. And each time we said: "Okay, we do that, but that will cost additional money." And we actually did that now and then and in addition there were also – let's say – various fortunate circumstances. The Bundesrepublik wanted to at last reduce the FAUST – massively. (Rehda, interview on 06-22-2009, lines 522-537).

It was also quite useful that the SECL had been already established while the lump sum negotiations were ongoing, because with it the group of experts which had formed under the roof of the SECL provided important support and background information.

During the tough negotiation period the SECL already existed and that was our luck, since with it we had an organization, which was also able to contribute to the process with subject-specific knowledge. […] In particular, cost estimates and that was also an argument which we had always made in the political sphere during the preliminary stages. […] It was foreseeable that the Bundesrepublik wanted to negotiate towards a lump sum. If we want to do this, we need an organization which corresponds with that and which will put us in the position to make adequate subject-specific estimates […]. And that was an argument which we brought forward for the establishment. The [SECL] was founded in 2000 and we were then amidst lump sum negotiations. And everybody said: "Yes, it's good that you are doing this now. Like this, we have at least the reassurance that experts come in who are able to negotiate at eye level with the Bundesrepublik." (Rehda, interview on 06-22-2009, lines 545-559)

In particular was the involvement of Martin Keil advantageous, the executive director of the SECL, who had worked for many years at the Treuhand Agendy and the FAUST:

[55] This precaution should prove to be vital for the long-term funding of brownfield management. In 2002 the serious financial deficit of Saxony-Anhalt brought the Land's audit office to recommend the liquidation and transfer of these brownfield special assets to the Land's budget. This turned out to be impossible because the general lump sum agreement with the FAUST and the Bundesrepublik did not allow for liquidation. The Land, however, did get the Bundesrepublik's permission to lend money on these special assets (Ministerium der Finanzen 2003).

And in 99 and 2000, let's say, the intense negotiations with the FAUST took place, in order to stipulate the lump sum agreement. That again was a phase. I wasn't present. I did support it, but it took place on the executive level. Mr. Keil was involved. He was an excellent expert. (Peter, interview on 06-10-2009, lines 296-301).

The progress in negotiating the federal lump sum payment was the initiation for establishing the SECL.

And then there were these [lump sum] negotiations and when it became foreseeable that they would be accomplished – it had indeed been a long process – the question was "How is this then to be reasonably organized?" […] Since the discounted volume exceeded one billion and it was clear that such projects had to be managed properly, on behalf of the state. But that overtaxes the ministerial bureaucracy. That was our notion, that experts were required. (Gäde-Butzlaff, interview 11-18-2009, lines 103-128)

7.3 The Result

Eventually by 2001 both institutional changes the lump sum agreement and the establishment of the SECL had been achieved. Whereas the SECL is an important expert institution for the actual management of exemption related brownfield projects the success of its work is made possible above all because of the financial flexibility which is secured in the long-term by the special assets generated from the federal lump sum payment.

Ultimately we achieved state sovereignty over the funds and that was, of course, one of the very essential fundaments for the SECL, in order to start in full with remediation and brownfield administration and then also – I'd say – to get started properly and independently from the normal administrative structures. Very shortly after the establishment of the SECL we managed to spend more […] and that was a giant leap compared to the previous years, when it was narrowly may be 20 [on average]. And everyone, the businesses on-site, the entire administration, [and] the political sphere also the Bundesrepublik itself realized: "Wait a minute! Now it is really moving forward." Investments were made. Remediation was realized. Businesses were commissioned which were located in the state. So, in principle everybody was satisfied with the solution found und with it the SECL's right to exist was not anymore debatable. Everybody said: "Gee! It's really great that this is working out now." That was a favorable constellation, of course. The establishment of the agency and the lump sum agreement at the same time, because with this the SECL quickly had a good start and could begin to operate very swiftly. (Rehda, interview on 06-22-2009, lines 507-635)

The result is remarkable because institutional changes were brought about on the Land's own initiative, thus willfully creating autonomy for brownfield management albeit it is high level of uncertainty. There are numerous indeterminate factors which arise from the impossibility of a precise assessment of the actual contaminant situation. It is thus difficult to plan remediation measures and to predict the time and money that will be required for a legally compliant state of the environmental matrices. The fact that brownfield management is rather

a long-term issue – e.g. in some cases the remediation is not likely to be completed within the next 30 years – further increases the difficulty of the issue.

> *We could have negotiated further and if for any reason the government had changed and someone had come and said "Such rubbish!" or "This is too high a risk for me" – there has to be someone to bear the risk. Well, it's been a convenient situation, not for those dealing with it daily though. But to say, "Oh well, this is by 75% or 60% federal money." With a lump sum one takes over the responsibility that it [the money] will suffice […] whereas, if that step would not have been taken, there had always been someone to pay the major share. Well, there have to be people who have a little bit of faith in those, who are negotiating […]. For weeks and months single measures were negotiated and assessed together with engineering consultants and many law firms. A minister needs to have a certain faith and needs to be convinced that one can live with the result. (Gäde-Butzlaff, interview 11-18-2009, lines 368-386)*

The personal commitment of individuals who have the competences and an earnest interest in bringing about change as well as a fair number of political decision-makers who do not interfere but are interested enough as to tolerate changes were essential for the success.

> *And I have to say that I was also lucky … I also wanted to stir things, but I also came upon people like my department head, Ms. Gäde-Butzlaff and also Mr. Gaßner, who were very committed and others, who all acted in concert. These activities, which we had developed within the department and the ideas we had, could have been easily choked off, had the top of the house [ministry] said "All this does not interest us. Let them write their referrals. We trash them or do not follow-up the matter." The process would quickly have come to an end. And that would have been a real shame. Well, one needs people on all levels, who are willing to allow changes and who play along. That was indeed important. (Rehda, interview on 06-22-2009, lines 923-934)*

Furthermore the political process itself can be seen as independent state politics which emerged from inside the ministry and involved the entire spectrum of democratic policy-making: identification of problem and the need for institutional change, conceptualizing a solution which serves the objective and is politically feasible, development of a respective bill, putting the bill through a comprehensive cross-party dialogue with the political stakeholders, and parliament enactment.

> *It was the first time that something had been generated and developed independently from inside the department. […] First of all [there was] the lump sum in relation with the assessment of the brownfield situation und an estimation of how much it will cost over decades – a prognosis for many years. And after this the consideration about how this task could be fulfilled properly […] and to bring through the legal form [of the SECL]… (Gäde-Butzlaff, interview 11-18-2009, lines 215-224)*

For this type of institutional change to be accomplished *time* has a fundamental relevance. In this case, the actors had been able to identify the right moments for their actions. The

experience that time matters and developments *'need their time'* and that therefore political success often requires waiting until *'the time has come'* or the *'time is ripe'* is essential. Judgments of perceived needs for time and urgency correspond with perseverance and patience for the long wind, and flexibility and quickness for windows of opportunity.

> *I think it was the first and presumably the only time to have the chance to get the entire spectrum and to bring it to a conclusion. (Gäde-Butzlaff, interview 11-18-2009, lines 224-225)*

> *And at many instances it was … not a lucky strike. But it is always like that in life. It happens frequently that certain windows open and then certain measures become possible. And if one takes advantage of these windows, one can accomplish things. And if one does not use them, the chance has passed. […] And we were lucky in the sense that we had taken advantage of certain opportunities. (Rehda, interview on 06-22-2009, lines 896-901).*

One such instance is the pending closure of the FAUST which the key actors recognized as a beneficial condition for lump sum negotiations and took advantage of. To identify the right time for action requires an accurate sense for the current political sentiment as well as a proper understanding of the general institutional and societal circumstances which are acquired through one's own experiences with the dynamics of politics.

> *Well, therefore the right moment can never be identified beforehand. […] I would never bring a major project to a public hearing five months before an election, because then one can bet on that it will be used. […] No matter what people think about it, politics would come too strong into play. And I think we somehow managed to keep the matter out of this. […] It is clearly not enough that the project is good. One also has to sell it. Well, the idea, that others have to understand it [the project], is – I believe – in the politics business not really something on which one should rely. (Gäde-Butzlaff, interview 11-18-2009, lines 368-406)*

Windows of opportunity are a prerequisite but are as such not sufficient for change. In fact are vision, competence and power of judgment needed in order to take advantage of fortunate circumstances, create better solutions and put them through the democratic decision-making processes. The competence and creativity of the key actors is reflected in the way they handled difficulties: When by events which had no similarity with the brownfield problematic the limited (German: Landes-GmbH) suddenly became discredited in the public realm they quickly agreed on the public agency (German: Landesanstalt) which had already been introduced for other public tasks and was very likely to be accepted. In order to keep the matter out of the highly contingent politics business, potential objections were given priority at an early stage through extensive cross-party and stakeholder dialogues in the run-up to the official hearings, debates and readings in parliament.

8 Discussion and Conclusion

By the example of exemption related brownfield management in Saxony-Anhalt, this study inquired into the success factors and conditions for institutional change which increased its effectiveness and thus contributed to a sustainable development in that area. Effectiveness in our case meant to secure adequate conditions on all administrative levels (federal, state, local) in order to facilitate an unimpeded implementation of investor exemption.

This case study provides important insight for policy-making in that it confirms the abilities for successful policy-making that have been suggested in earlier works. These are (a) the ability to utilize well one's own competences (Faber et al. 1997: 459), (b) the ability to obtain majority approval (Sabatier 1988, Olsson et al. 2006) and (c) the ability to adequately define the problem at hand (Baumgartner/Jones 2002, Faber et al.). The ability to utilize well one's own competences refers to the exploitation of legitimate means for realizing the objective, such as employing external and renowned experts, using formal and informal channels of communication, issuing submittals and recommendations, agenda setting, etc. The ability to obtain majority approval shows in the creation of coalitions, the connection of the solution to the collective good and the build-up of trust. The ability to define the problem means finding its adequate outline, i.e.

- determining what forms a part of the problem and what does not,
- identifying the societal groups that are affected by the problem as well as the nature (risk, damage, etc.) and degree of impairments,
- specifying who can contribute to its solution in what way and,
- specifying the material and technological dimensions of the problem as well as its institutional aspects.

In addition to this our study suggests that the application of the concept of stocks, or less abstractly worded, the ability to take into account the temporal aspects of a problem and of one's own actions is just as essential for successful policy making. It is grounded in the sense of time[56] and is relevant with respect to (a) the ability of adequately defining a problem and to (b) identifying the right moment for action.

[56] Thus we hypothesize that effective policy making is based on threes senses: the sense of time, the sense of power and the common sense.

Ad (a): A sense of time complements the understanding of a problem as it adds a temporal perspective. Not only are its material, technological and institutional aspects determined but also their respective behavior over time, their dynamics, typical life cycles, predictabilities, likeliness to change or inertias, etc. It is, for example, important to take the, time horizon and dynamics (due to their varying nature) of remediation projects into account when determining an adequate solution. The typical contamination at industrial brownfield sites is a contamination-complex from several pollutants which differ considerably in transport behavior (adsorption, degradation, velocity of propagation, solubility, etc.) in soil and water as well as in toxicity, blending, etc. Their treatment, however, can usually not be carried out separately since they are present at the same time on the same site. The decontamination of these sites, i.e. MEPs, is technically as well as administratively extremely challenging and takes decades. In some cases it may not be concluded before 2050 while the actual conclusion date cannot be predicted with confidence. From there it follows that an institutional solution for the brownfield area has to fulfill two essential criteria with respect to time both of which have been realized in the case of Saxony-Anhalt: 1) its organizational and financial setting should be secured in the long-term and 2) both, the organizational as well as the financial resources should not be established for a limited-term.

Ad (b): For an institutional change to be realized the actors need a sense of time, in other words a “stock’s perspective”, with regards to identifying the right moment for their intervention into the established institutional setting. Institutional structures may follow their own dynamics which may be rather isolated from external influences. As indicated by the brownfield problematic of Saxony-Anhalt, this phenomenon also applies to institutional settings in the public realm. Although they are diagnosed as inadequate for the public task they and their correspondent procedures may prove to be *durable*. Pierson (2004: 85) suggests that institutional and organizational settings are likely to exhibit strong inertial qualities and that these tendencies toward persistence imply that pressures will often build up for some time without generating immediate effects. In particular when institutions provide or are associated with reliability for action- and decision-making, e.g. contracts and other formal arrangements, we suggest that they can generate strong reservations towards change. As shown in section 7.2.4, the existing procedures for brownfield exemption persisted until specific, discreet and purposeful action was taken in order to intervene. This kind of action in turn requires actors who have a serious interest in a change, are able to act in concert and who are vested with

authorities, competences and responsibilities which enable them to initiate a change process. They need profound subject-specific knowledge in the problem area and the willingness to take over responsibility for failures and detriments arising from their engagement (Faber et al. 2002: 331).[57]

In our case one of the central formal arrangements was the General Administrative Agreement on financing brownfield exemption stipulated in 1992 between the Bundesrepublik and the new Länder. It stipulated a substantial financial commitment by the Bundesrepublik and provided financial security for the Länder. It thus posed an economic incentive for risk-averse behavior and was the main source for resistance towards a lump sum agreement notwithstanding its ineffectiveness in enforcing the exemption clause (see section 7.2.4). Change can occur where actors identify these sources of durability and address and integrate them in the creation of the new institutional setting, e. g. by integrating a test phase (see page 44) or allowing for an adaptation period.

The ability to identify the right moment for action includes both, the susceptibility for windows of opportunity and a preparedness to use them. Successful policy makers recognize windows of opportunity because they are familiar with the dynamics of the political system. They have – on the grounds of hands-on experience with the political everyday business – developed the ability to be guided by the affect of typical – obvious and less obvious – durations and cycles of political activity and decision-making (election, budgeting, etc.) for the benefit of their actions. They also have a strong enough susceptibility for societal processes (Zeitgeist) and a favorable political climate (see section 7.2.1)[58], that helps determine the best moments for their actions. In short, they have the ability to recognize and take advantage of windows of opportunity. That ability is grounded, we suggest, in a sense of time.

[57] It has already been argued by Faber/Petersen (2000: 39) that ministerial officials in Germany are in a key position for designing an environmental policy which is oriented towards the facts and requirements of environmental issues rather than towards specific interests and power constellations.

[58] In our case this came about due to a group of political representatives and decision-makers in the Länder parliament and government including party fraction leaders and ministers which was big enough to generate such a favorable climate. This group had an active though not proactive interest in the improvement of brownfield management and was willing to allow institutional changes. Furthermore, it was of particular importance that the Minister for the Environment confided in the abilities of the key actors (see section 7.3).

9 Outlook

In this paper we have made an attempt to show how institutional change in the case of implementing brownfield exemption in Saxony-Anhalt has been accomplished and how that has resulted in a significant improvement of brownfield management.

The current institutional arrangement for brownfield remediation in Saxony-Anhalt can be considered as a major improvement: The administrative solution is in many respects problem-oriented and adequate in the long-term: the bundling of all remediation related competences as well as the establishment of exclusive special assets. In this paper we have been interested in the coincidences as well as in the driving forces that made that arrangement possible. We have taken a closer look at the brownfield problematic after the collapse of the GDR and particularly at the development of administration in Saxony-Anhalt during the first decade after the reunification.

Next to an inquiry into the historical facts the main empirical basis for our study has been a series of in-depth-interviews with eight key actors in Saxony-Anhalt's environmental administration. The interview spectrum ranged from a former environmental minister to district officials. On the basis of their reports we have reconstructed the institutional change process. The interviews allow an insight into the actors' individual perspective, their personal experience, motives, considerations, and strategies. With this we have attempted to make a contribution to a better and deeper understanding of the reality of policy-making.

Our study gives an example of institutional change and outlines its essential success factors in the case of brownfield management in Saxony-Anhalt. Though our case study cannot claim to be representative we believe that the factors identified here are instructive to policy makers. Furthermore, we hope that these factors may serve as stimulation for further research and contribute to a deeper understanding of policy-making and the processes of institutional change.

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Glossary

A	
Anstalt zur treuhänderischen Verwaltung des Volkseigentums (Treuhandanstalt)	Treuhand Agency
B	
Bezirk	district
Bundesanstalt für vereinigungsbedingte Sonderaufgaben (BvS)	Federal Agency for Unification-derived Special Tasks (FAUST)
Bundesbodenschutzgesetz	Federal Soil Protection Act
Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit	Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
Bundesrepublik Deutschland	Federal Republic of Germany
G	
Gesetz über das Sondervermögen “Altlastensanierung Sachsen-Anhalt”	Act on the Special Assets “Brownfield Remediation Saxony-Anhalt“
Gesetz über die Errichtung einer Landesanstalt für Altlastenfreistellung	Act about the Entailment of an Agency for Exemption from Residual Liability
K	
Kreisfreie Stadt	urban district
L	
Land / Länder (pl.)	federal state(s)
Landesamt für Umweltschutz Sachsen-Anhalt	State Office for Environmental Protection Saxony-Anhalt
Landesanstalt für Altlastenfreistellung Sachsen-Anhalt	State Agency for Exemption from Contamination Liability Saxony-Anhalt (SECL)
Landesregierung	state government
Landkreis	district
N	
Neue Länder	new German states
O	
Obere Bodenschutzbehörde	higher soil protection agency
R	
Rat von Sachverständigen für Umweltfragen (SRU)	The German Advisory Council on the Environment
Regierungsbezirk	administrative district
Regierungspräsidium	administrative district authority (ADA)
U	
Umweltrahmengesetz	Environmental Frame Act
Unter Wasser- und Bodenschutzbehörden	lower water and soil protection authorities
V	
Verwaltungsabkommen über die Finanzierung der ökologischen Altlasten	General Administrative Agreement about the Financing of the ecological brownfields
W	
Wasserhaushaltsgesetz	Federal Water Resources Act