

Land Consolidation as a Tool to Balance Private and Public Requests on Land Use – a German Example in the Rhenish Lignite Mining District

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SUMMARY

The German land consolidation is a flexible instrument to cope with the modern tasks of rural development. The Land Consolidation Act offers different measures to be chosen with view to the comprehensiveness especially of the public interests. The procedure in the Rhineland's lignite mining district is considered as an example for a successful balance of public and private requests on land use in a densely populated area.

Despite the varieties of the measures some preconditions are significant for all land consolidation procedures that support the implementation of public planning in order to achieve the objectives as smooth as possible:

- integration of public and private interests
- frameworks laid down in comprehensive spatial planning
- participation of public agencies and parties concerned
- competence (by law) and engagement of land consolidation authorities to comment on the ongoing planning procedures
- distinct regulations to enforce the public purpose stipulated by special planning
- flexible legislation for land consolidation procedure
- regularly assessment of co-operation priorities
- anticipatory use of a land fund
- attempt at agreements in the course of land consolidation even when not mandatory

ZUSAMMENFASSUNG

Die deutsche Flurbereinigung ist ein flexibles Instrument zur Lösung aktueller Aufgaben der ländlichen Entwicklung. Der Umfang der zu unterstützenden öffentlichen Interessen ist bedeutsam für die Wahl der Verfahrensart nach dem Flurbereinigungsgesetz. Die Verfahren im rheinischen Braunkohlrevier bieten ein Beispiel für den erfolgreichen Ausgleich von Landnutzungsansprüchen in einer dicht besiedelten Region.

Trotz der Unterschiede der Verfahrensarten gibt es einige Voraussetzungen für alle Flurbereinigungsverfahren, um für eine möglichst reibungslose Umsetzung öffentlicher Planungen zu unterstützen:

- Integration öffentlicher und privater Belange
- Rahmenbedingungen sind in der Regionalplanung erkennbar
- Beteiligung der Träger öffentlicher Belange und der Betroffenen
- Wahrnehmung der (rechtlich abgesicherten) Rolle als Träger öffentlicher Belange durch die Flurbereinigungsbehörde
- Eindeutige Regelungen zur Umsetzung/Durchsetzung von Fachplanungen
- Flexibilität des Flurbereinigungsrechts
- Regelmäßige Überprüfung der Zusammenarbeitsprioritäten
- Vorausschauende Landbevorratung
- Versuch freiwilliger Regelung auch wenn nicht vorgeschrieben

Land Consolidation as a Tool to Balance Private and Public Requests on Land Use – a German Example in the Rhenish Lignite Mining District

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1. LAND CONSOLIDATION IN GERMANY

Land consolidation - in the sense of the German Land Consolidation Act (LCA, 1976) - is a flexible instrument to cope with the modern tasks of rural development. It is a mean with view to improve the production and working conditions in agriculture and forestry as well as promoting the general use and development of land and rural areas by re-arrangement of agricultural land. Land consolidation is a mix of agrarian special planning and land re-adjustment. The different measures are chosen with view to the comprehensiveness especially of the public interests.

The so-called Comprehensive Land Consolidation (CLC, on the base of §§ 1, 37 LCA) has a far-reaching planning approach and will be implemented for an integrated rural development. In order to improve the production and working conditions in agriculture and forestry land parcels will be reshaped and consolidated with due regard for respective structure of the landscape to serve the interests of the parties concerned as weighted against each other, to further general use and development of land and to benefit the general public wealth. Ways, roads, water ways and other common facilities can be provided, soil-conservation, soil-improving and landscaping measures can be taken as well as any other measures improving enterprises, reducing the amount of work and facilitating farm management. Village renewal measures can be taken. The legal situation and relationships will be clarified.

The Simplified Land Consolidation (SLC, on the base of § 86 LCA) can be implemented to eliminate or to minimise the detrimental impacts on the agricultural structure caused by public request to land use. Classic examples are planning concerning nature protection and landscape, communal land use planning, water management planning or transport planning. The SLC is not solely carried out in support of public purposes – private benefit must be evident. At least all participants shall be entitled to receive land of equal value.

If, for special reason, it is permissible to acquire agricultural land on a large scale by compulsory purchase, then a Land Consolidation in Case of Permissible Compulsory Acquisition (LCPCA, on the base of §§ 87, 88 LCA) may be carried out to apportion the loss of land among a large number of owners and to avoid the disadvantages the project may bring for the general use of the land. Although the LCPCA strives that each participant receives land of equal value, it is not in every case possible to avoid the expropriation. Classic examples are projects for public transport (construction of highways, federal roads, railway lines) including accompanying environmental compensation for the intrusion into the nature and assault upon the landscape or flood protection measures.

The aforementioned three measures are the most powerful of the LCA, as they can be applied for multi-purpose development aims. Besides that the legal provisions do not determine the measures to be executed with total voluntariness, although the agreement of all participants is strived for.

Voluntary Land Exchange (§103 a LCA) and Accelerated Land Consolidation (§91 LCA) go for fast and un-expensive re-arrangement of land parcels, as all parties concerned have to agree respectively the physical rural infrastructure does not need improvement. The measures aim at the improvement of agricultural farming conditions and/or may be used to enable necessary measures of the protection of nature and landscape.

For the East German Länder a special legislative is available since 1990 (German Unification). The Law on Adjustment of Agriculture“ (LAA) is the basis for the regulation of restitution requests of former owners as well as the transformation of the law of property of the former legal system (before 1990) into the current legal system of the West German Civil Code concerning land ownership and building ownership.

The German legislative basis did not need significant revision to allow the pragmatic changes to be implemented in the last decades because of its flexibility. The terms are wide enough to address all kind of objectives that society sets for a healthy and appealing rural landscape (Thomas, 2004).

With increasing public demands on the use of agricultural areas - at least in the range of urban concentrations – mono-dimensional improvements of agrarian structures are a matter of the distant past. Instead land consolidation has been increasingly integrated into the means of implementing conservation programmes, projects to improve transport infrastructure and water management. In correspondence the number and area underlying the Comprehensive Land Consolidation (CLC) has been constantly decreasing. That comes along with a steady incline of the Simplified Land Consolidation (SLC). The Land Consolidation in Case of Permissible Compulsory Acquisition (LCPCA) and the Accelerated Land Consolidation (ALC) keep a pretty constant level.

The following example of a series of Simplified Land Consolidation procedures shows the range and possibilities of the “modern approach” in a highly productive agricultural area, where the effects of extensive lignite mining have to be balanced with private requests of land owners and farmers and the needs of an urban society.

2. LIGNITE MINING IN THE RHINELAND

North Rhine-Westphalia has been the traditional core of industrialisation in Germany. Build on rich deposits of hard coal heavy industry evolved and led to a densely populated district – the Ruhrgebiet. After a severe structural transformation today North Rhine-Westphalia has about 18 million inhabitants.

The lignite mining area in the Rhineland has the largest continuous deposits in Europe. Today the lignite output of over 100 million t ensures about 13 per cent of German power demand and close to 50 per cent of the demand of North Rhine-Westphalia. The mining and the subsequent power generation at five power plants close to the three mines is the core business of a big private energy enterprise (RWE power). It guarantees the base load of domestic primary energy.

Due to long-term security of supply and the cost-efficiency German lignite can compete with all imported energy sources and is expected to meet the requirements of the next decades – unlike the subsurface hard coal mining that works down up to 1500 meters and faces a steep decreasing output.

Lignite can only be mined in open cast operations. The lignite seams are overlaid by thick layers of loose sand, gravel and clay. At the present the excavator hits lignite from 25 to 280 meters. In the future layers from over 400 meters have to be removed. Open pit mining does involve serious interference with conditions in a rather densely populated area and with the lives of the inhabitants.

Despite all of its impacts lignite mining is regarded as an important public interest. It takes place under the Federal Mining Act (Federal Mining Act, 1980). Land use conflicts are to be anticipated in the course of careful planning procedures on different levels including the participation of the people concerned.

Antecedent special provisions stipulated for more than 100 years that the land had to be restored after the mining was finished. The excavated soil masses had to be reinserted in the mined-out pits to create areas usable for agricultural and silvicultural purposes. In the first half of the last century land rehabilitation concentrated on new forest areas. But in the 1960s the mining reached the high fertile agricultural loess areas with para-brown earths. That gave the opportunity - and led to the obligation - to recultivate the used land for agricultural purposes.

Every year an area of approximately 300 ha is taken for strip mining by the energy enterprise. The overburden layers are removed by bucket wheel excavators. The material suitable for recultivation (topsoil, loess soil and loess loam) has to be extracted separately. This material will be mixed and used for creating new soil. After transport to the recultivation area by conveyor-belts it will be dumped by a spreader in a layer at least two meters thick.

Only main ways are built of gravel during the spreader process. They are sufficient for the intermediate cultivation of the mining company's so called pioneer farms. These farms prepare the acreage for future operators. A reasonable soil development can be assessed after 7 years, when the intermediate cultivation is completed (Rheinbraun AG, 1998).

The Final Operation Plan works as basis for the mining company to recultivate the open cast pit. Only main ways and significant landscape elements are developed during the recultivation period. They are sufficient for the intermediate cultivation of the mining company's so called

pioneer farms. These farms absorb the higher costs of first cultivation and potential start-up difficulties and prepare the acreage for future operators. Optimum soil development overrides profit maximisation. The intermediate cultivation is completed after 7 years.

The annual recultivation size comes up to size of the taken land. During the course of the last decades 18000 ha have been recultivated altogether (9300 ha for agricultural, 7000 ha for silvicultural purposes). To clarify the dimensions: the total area comes up to a rectangle 5 km long and 36 km wide (see fig. 1; Kamphausen, F., Lohde, K., 2005).

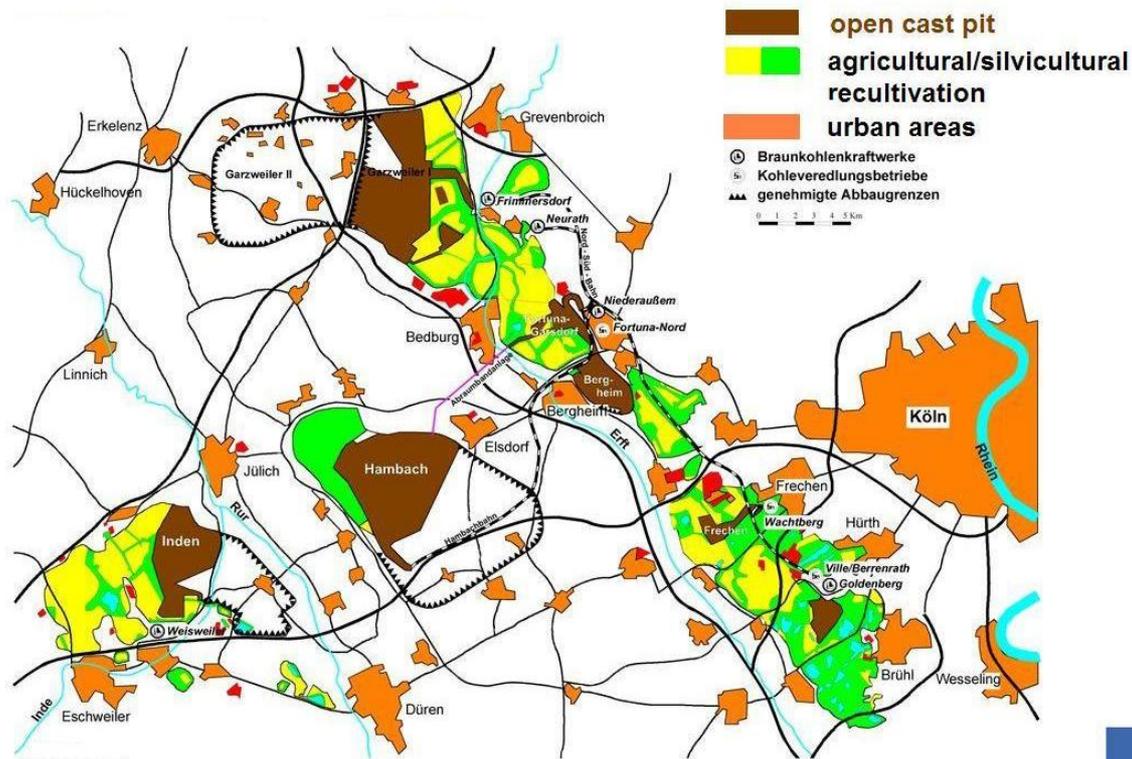


Figure 1: General Survey of the Rhenish mining area

3. LIGNITE MINING PLANNING PROCEDURE

Today mining pits cover areas from 30 to 50 km². Due to the densely population also rural villages are affected and have to be resettled. The procedure takes place in a landscape with excellent soil conditions and some of the highest farming yields in Germany.

The environmental impact on the local and regional situation is enormous. According to the principle of sustainable spatial development a balance of controversial views and interests is necessary. The main features are to be laid down in the regional planning carried out by State authority (under the provisions of the State Planning Act, 2005)

The Lignite Mining Plan (fig. 2) works as a regional spatial plan. According to the Federal Mining Act it comprehends the main factors for recultivation on a large scale even before the mining starts. Recultivation is a part of the compensation due to the impairment of nature and landscape as a result of the mining. The lignite mining plan stipulates that the „new landscape“ is to be erected in a manner to serve best possible

- the sustainable and environmentally compatible agriculture and silviculture
- the impression of a „natural characteristic scenery“
- the (re-) development of native vegetative and animal ecotypes rich in species
- recreation purposes.

Main statements on the future shape of the recultivated area are made in the text components of the Lignite Mining Plan. The arrangement of land use (agriculture, forest, water bodies, ecological elements) predetermines subsequent planning decisions. One critical point is the fraction of ecological elements to lie in between agricultural plots. This rate will be codified in the lignite mining plan and is to be proven evidence at all subsequent planning procedures (Kamphausen, 2005).

The Lignite Mining Plan also refers to the instruments to realise the regulation at a latter date. In this context the operational plan procedure (based on the Federal Mining Act) and the land consolidation procedure (based on the Federal Land Consolidation Act) are to be named.

At this planning phase the land consolidation authorities – as public authorities – affect on the regulations of the Lignite Mining Plan to ensure that the scheme will be implemented without friction in subsequent years.

The main concept of the mining and recultivation process is laid down in the Operational Framework Plan. According to the operating schedule of the open cast pit the mining company develops the Final Operational Plan (see fig. 3). The surface configuration with gradients, the fundamental arrangement of the new agricultural plots and the ecological elements are defined.



Figure 2: Lignite Mining Plan

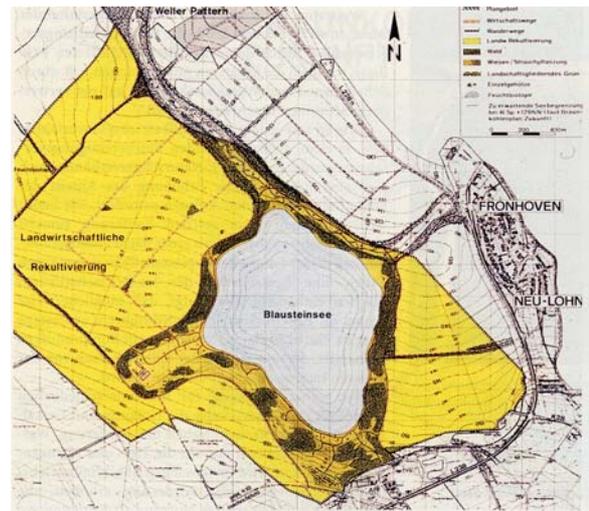


Figure 3: Final Operational Plan

At this stage the mining company will enlist the land consolidation authority. Already first drafts will be discussed with land consolidation authorities and the chamber of agriculture/ the farmers' association, because the farmers' fundamental managerial needs have to be balanced with the requests of landscape and nature conservancy as well as the demands of the municipalities (for example urban development, recreational requirements) and other public interests (i.e. water resources management, public transport). A prolific co-operation has emerged over the years – unremarkable of the obligatory participation procedure as specified by the Federal Mining Act.

As the reclamation demands decades to finish, all regulations are to be formulated most flexible. The necessary details are to be fixed not until a latter date during a land consolidation procedure or by means of other special planning instruments (for example: based on State Roads Act, based on Federal Building Code).

Level of planning	Legal Base	Planning Instrument	Regulations Contained	Participants
Spatial planning at regional level	State Planning Act	Lignite Mining Plan	Main factors for recultivation, overall look of the new landscape, arrangement of land use including ecological elements	Parties concerned (public interests)
Special planning	Federal Mining Act	Operational Framework Plan	Concept of the mining and recultivation process	Parties concerned (public interests)
Special planning	Federal Mining Act	Final Operational Plan	Surface gradients, fundamental arrangement of new plots, main ways and water bodies	Public interests, land consolidation authorities, farmers

Table 1: Spatial and Special Planning Steps in the Lignite Mining Procedure

4. RIGHTS OF THE OWNER

According to the German laws the ownership rights on land as a rule comprise both rights on the surface and rights on the underlying mineral resources. The Federal Mining Act makes an exception from the general rule as the ownership of lignite, hard coal and other mineral resources (the so-called “bergfreie Bodenschätze”) belong to the mining company.

The Federal Mining Act merges both legal claims to allow for the mining procedure. The provisions take into account that the lignite mining is considered a temporary use. Even though the duration of time from the removing of the top soil until the completion of the recultivation takes 20 to 30 years, the ownership right of the land owner persists. The Federal Mining Act therefore stipulates only the use of third-party private land for open cast mining in favour of the private mining company. The act does not constitute a claim to transfer the freehold, but substantiates a claim for the temporary use even under compulsion. In these cases an administrative act (cession of land) is to be declared by the mining authority.

In practice agreements by mutual consent prevail. Some owners sell their land parcels to the mining company, whereas the majority of owners leases their property to the mining company before the mining starts. These owners are entitled to receive land of equal value after

recultivation. Due to the multitude and dependency of the necessary regulations it is advisable to accomplish the return of the properties by means of a public land regulation procedure. The legal relationships and especially the original borderlines that existed prior to the mining have to be adapted to the newly restored landscape.

5. COMPREHENSIVE SOLUTION: LAND CONSOLIDATION

Land consolidation procedures (under the provisions of the Federal Land Consolidation Act) are to be initiated for parts of an open cast pit of 400 – 800 ha, when the recultivation with the new soil is finished and the mining company already has started the intermediate cultivation. A simplified land consolidation procedure based on § 86 of the land consolidation act builds the legal basis to rectify unfavourable conditions of the general use and development and to restore the property to the private farmers (Ellsiepen, 2002).

At the beginning of the land consolidation procedure an on-site inventory is to be made. The overall condition of the already built main ways, water bodies and plantations will be mapped. Special planning documents are to be sifted through in search of binding guidelines for the reallocation.

Starting from the findings the so-called “road and water resources plan with landscape conserving accessory plan” (plan according to §41 of the land consolidation act, fig. 4) will be drafted after conferring with the board of participants, the public agencies concerned and the state-approved nature conservancy associations. It will name the exact position and the surfacing of other ways that are necessary in the long run and a subdivision of the landscape that will not interfere with modern agriculture, but will serve as habitat for wild animals and plants.

The land use balance specified by the lignite mining plan has to be drawn as evidence of conformity. Necessary amendments have to be included in the accessory plan. The future site and structure of each farm will be taken into account as well as the location of the new lots.

This plan is the legal basis for the remaining construction measures concerning the recultivated terrain. Ways, roads and water bodies will be finally completed by order of the body of participants and transferred into the ownership of the party responsible for the maintenance.

These activities are a precondition to relieve the mining company from their obligations and the state supervision.

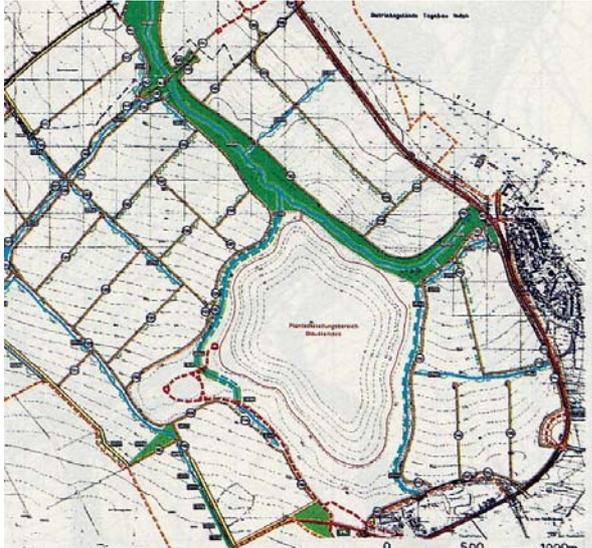


Figure 4: Road and Water Resources Plan with landscape conserving accessory plan



Figure 5: Land Consolidation Plan

After several years of intermediate cultivation the soils are evaluated by the fiscal authorities. The assessment of forest and agricultural land is generally based on their natural productive capacity. While the original land prior to the mining scored 80 – 90 points (relative figures, out of 100), the recultivated soil comes up to 65 – 75 points. The worsening is a result of the loess soil displacement, the diminished humus fraction in the topsoil and the compressions of the subsoil. The soil figures of the old parcels will be learned from the anterior records of the fiscal authorities by amicable adjustment.

At the same time the claims of the farmers are ascertained. The farm management conditions and the visions for its future development will be discussed with each participant. A managerial advice by the farmers' association is optional. In co-ordination with the mining company and the farmers' association the land consolidation authority draws up the scheme of readjustment. The demarcation of the border of the project area will help to establish the necessary cadastral connections to the unchanged borderlines outside.

Based on the previous private-law usage agreement between the owner and the mining company the freeholders are entitled to receive land with equal value. Due to the lower soil quality of reclaimed soil compared to grown soil the owners are compensated with an increase in area. In addition, an extra of 10 per cent is given to compensate for uncertainties of the long term soil development. As a result the new units allocated to an owner increase by 20 to 30 per cent in area when compared with grown soil.

The dimension of the new units takes into account also any compensations provided according to the Federal Mining Act or the Federal Land Consolidation Act. As a rule the compensations are settled by allocation of an equivalent area rather than give compensation in cash. As the mining company normally has bought large areas of arable land on freehand

basis, the land consolidation authority has relatively wide scope of planning the allocation of the new lots. Leasehold plots will be allocated next to freehold lots circumstances permitting (fig. 5).

Based on this concept the mining company negotiates with the owners to resolve the formerly concluded usage agreements. The outcome is to be stipulated with the participation of the land consolidation authority.

The overall positive effect on farming structures may be seen by comparison of old and new plots of several private owners: to shorten the period of land-usage agreements the owners of parcels in the forefield of the mining receive their compensation in an area already under recultivation (fig. 6).

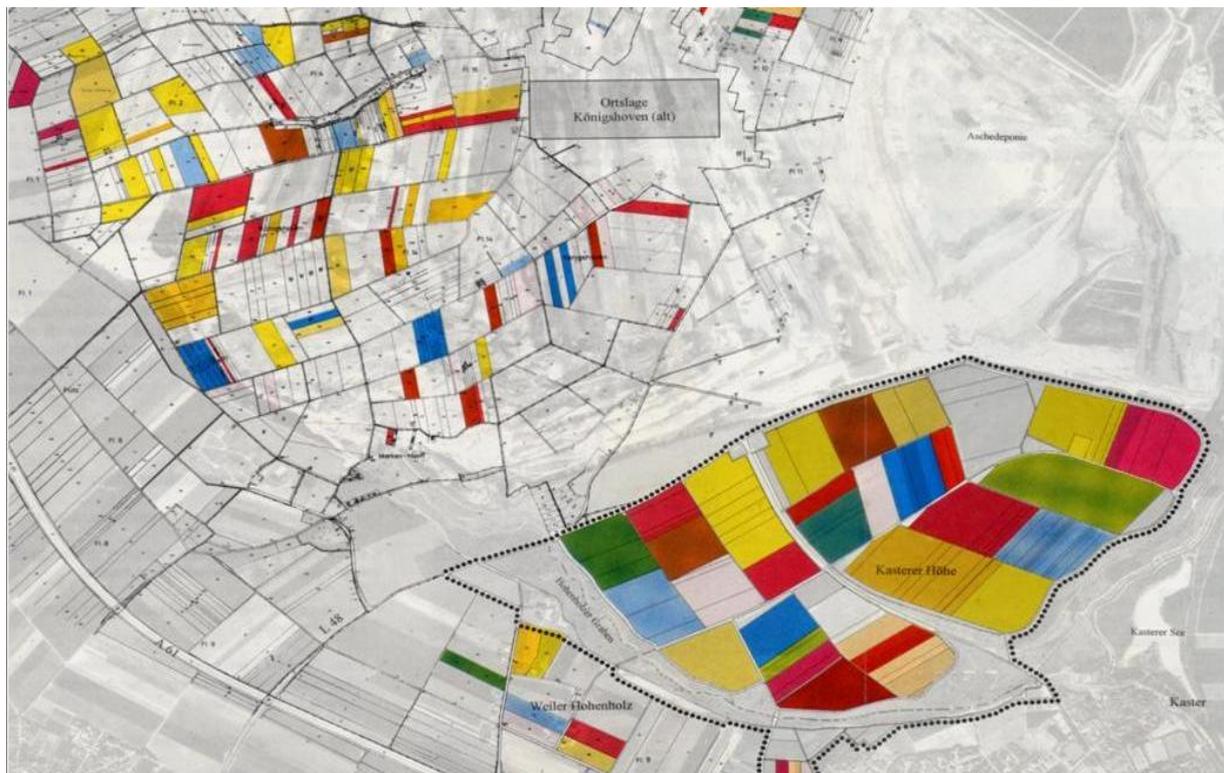


Figure 6: Outcome of the land consolidation procedure (old and new parcels)

The land consolidation authority strives for mutual agreements with every freeholder and the mining company concerning the termination of the usage agreements. In that ideal case no objections to the land consolidation plan are to be expected.

The public records (esp. the land register and the land cadastre) will be updated after the new legal status has taken effect. At that time the mining sphere of influence has finally disappeared.

Level of planning	Legal Base	Planning Instrument	Content	Participants
special planning	Federal Land Consolidation Act	Road and Water Resources Plan	Exact position of rural infrastructure (ways, water bodies, landscape elements), land balance;	Body of participants, public interests
special planning	Federal Land Consolidation Act	Land Consolidation Plan	Evaluation of the soil; land of equal value for each participant/owner; demarcation of borders; new legal status	Farmers, private interests

Table 2: Special Planning in the Land Consolidation Procedure

6. CONCLUSIONS AND RECOMMENDATIONS

From 1962 18 Simplified Land Consolidation procedures (§ 86 Land Consolidation Act) covering a total area of 15000 ha were initiated subsequent to open cast mining. 2700 owners of land participated in the procedures.

Furthermore 5 land consolidation procedures were carried out for the provision of land for projects of public interest (Land Consolidation in Case of Permissible Compulsory Acquisition on the base of §§ 87 – 89, Land Consolidation Act). Main roads affected by the open cast mining pits were to be relocated in the border area. The resulting disadvantages for the use of the land were mitigated. The land required for the projects was vested in the parties responsible for the projects. These projects with a total area of 8500 ha and 3400 owners are concluded.

The land consolidation procedures were carried out largely by mutual consent of the participants and hence quite smoothly: the landscape was restored and future sustainable use is made possible.

Starting from this particular experience it is possible to demonstrate some relevant preconditions to all land consolidation procedures to achieve the various objectives as smooth as possible.

6.1 Integration of Public and Private Interests

In a lot of regions there is more to rural areas than just agricultural activities. This simple statement is essential especially for the countries in transition, where the improvement of farming conditions through re-allocation and improvement of rural infrastructure is important

after the restitution process of the post-soviet era is finished. It is not to be neglected, that there are other urgent public needs to be satisfied as well: communal development, regional transport, regional water management, environmental and nature protection, landscape planning, leisure and recovery are of great importance for a modern society. Balancing private and public needs will be a tremendous task (at least) for all EU-countries when it comes to implement NATURA 2000 and the Water Framework Directives of the EU.

6.2 Frameworks laid down in Comprehensive Spatial Planning Participation of Public Agencies and Parties Concerned

Large-scale changes take place in rural areas. Landowners and leaseholders are involved as well as other interest groups and society in general. The sometimes diverging objectives have to be merged. A precondition to know all the different public demands is a system of constitutive planning levels, which is respectively connected with state, regional and local politics. The participation of the public agencies and the parties concerned is important on all levels, so that the “actors” (rural inhabitants, farmers et al.) can express their concerns and go for anticipatory managerial decisions.

6.3 Competence (by Law) and Engagement of Land Consolidation Authorities to Comment on the ongoing planning procedures

The land consolidation agencies/authorities should play a part in the planning procedures on the different levels of general and special spatial planning. The German land consolidation act legitimates the land consolidation authorities to comment on their concerns regarding the effect of planning on agricultural structures and the general use and development of (rural) land. Participation at an early state of planning raises the opportunity to call attention to the problems of rural areas and to agree on collaboration.

6.4 Distinct Regulations to Enforce the Public Purpose Stipulated by Special Planning

Even when the implementation of special planning for public purposes is to be conveyed to the land consolidation authority, the underlying laws (i.e. concerning nature and landscape protection, communal land use, water management, public transport et al.) need distinct regulations to enforce the public purpose. Otherwise land consolidation could fall below the expectations (just, lawful and reliable procedure) because of legal restrictions of land consolidation laws.

6.5 Flexible Legislation for Land Consolidation Procedure

Balancing the public and private requests on the land use is a must in developed/ developing countries with private ownership of land. The example shows the flexibility of the simplified land consolidation. Depending on the requirements other answers (procedures) are possible/ necessary. The procedure is to be chosen with view to the comprehensiveness especially of the public interests. The cost sharing depends on the ratio of public and private benefit of the consolidation procedure. Projects that pursue solely public purposes need a special legislative

regulation (because they may require compulsory purchase if it is impossible to allocate land of equal value to every participant).

6.6 Regularly Assessment of Co-operation Ppriorities

In a lot of cases the realisation of public planning depends on the ownership of the affected plot of land. A regular exchange of ideas and strategic concepts of these planning authorities with the land consolidation authorities helps to identify relevant projects for co-operation and to set priorities where the benefits gained are considered higher than the costs of the implementation.

6.7 Anticipatory Use of a Land Fund

Anticipatory action of the land consolidation authority (i.e. preparatory acquisition of land) may prevent rising prices due to speculation. The availability of a land fund simplifies matters. In transformation countries state land that was left after the restitution process is finished may be used for the same purpose.

6.7 Attempt at Agreements in the Course of Land Consolidation even when not Mandatory

The German experience of land consolidation shows the benefit of an increasing tendency towards consensus in the planning and decision-making. At least the outcome of a realisation measure is partly predetermined by integrating the parties concerned in the decision-making. Many projects planning entities had to learn about the benefits of consensual regulations.

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