

## Strategies and instruments to limit excessive land use in Germany - a proposal to the German Council for Sustainable Development

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### ABSTRACT:

In the year 2004, the German Council for Sustainable Development (CSD) published recommendations on how to achieve the "goal-30-ha" of the Federal Government of Germany. The "goal-30-ha" is a political intention and should eventually lead to a reduction of the daily growth of area for settlement and transport from 100 ha today to 30 ha by 2020. In 2006, an evaluation of the recommendations was completed and the results are presented here. The investigation consisted of a desk research, a poll in the internet and three workshops with experts. The results of the poll and the workshops represent the full scope of opinions and of assessments from various professional audiences on the CSD recommendations. The surveyed experts believe that municipal area management, recycling management and regional cooperation are the most important elements for a successful implementation of the reduction goal. However, the workshops revealed the scepticism of the experts concerning the feasibility of goal management and of using economic instruments, in particular tradeable planning permits (land certificates).

### Introduction

In the year 2000, the area for settlement and transport in Germany increased daily by 131 ha; from 2000 to 2002, this daily growth declined to 105 ha mainly due to the economic situation (Bundesregierung 2004). In 2006, the growth was still about 100 ha per day (Bundesamt für Bauwesen und Raumordnung 2006). The "goal-30-ha" is a political intention, which is based on the "sustainability strategy" of the Federal Government of Germany, where the increase of the settlement area per day was defined as one of 21 sustainability indicators (Bundesregierung 2002). This "goal-30-ha" means that the land consumption in Germany should be reduced to 30 ha per day by 2020.

In 2004 the Federal Government commissioned the German "Council for Sustainable Development (CSD)" to organize a dialogue with and in the professional public in order to develop recommendations for actions, strategies and instruments to achieve its "goal-30-ha". As a result of the dialogue process, the council published its recommendations (Rat für Nachhaltige Entwicklung 2004).

Two years later, in 2006, the council itself commissioned Dialogik gGmbH Stuttgart (Prof. Dr. Ortwin Renn) in collaboration with Nürtingen-Geislingen University, Institute of Applied Research (Prof. Dr. Alfred Ruther-Mehlis) to evaluate its recommendations and the effects that the political programme "goal-30-ha", on the one hand, and the recommendations, on the other hand have achieved so far (Ulmer et al. 2007). The main results of this evaluation are presented in this article.

### Land use planning in Germany

In Germany there are four planning levels: the municipal, the regional, the federal state and the federal level. The spatial planning act (Raumordnungsgesetz – ROG 1997) provides the framework for spatial order and planning. The federal states make this framework operational through a federal state planning act. They are responsible for the federal state development programmes, where the main functions of different areas and the objectives of the federal state spatial planning are described. Each federal state consists of several planning regions, which work out regional plans with guidelines on the regional planning structure. These guidelines should be taken into consideration on the local level.

Despite these regulations provided by the higher planning levels, the local level still has considerable power in Germany. The Basic Constitutional Law of the Federal Republic of Germany, and inspired by this constitutional framework, the spatial planning act, guarantee local planning autonomy. The building law (Baugesetzbuch – BauGB 2004) regulates the land use planning on the local level. The current version of this legal framework contains a soil conservation article and a powerful link to the nature conservation act (Bundesnaturschutzgesetz - BNatSchG 2002), which requires the compensation of an environmental impact in the case of building measures. Because of this complex construction, land use planning in Germany is a continuous appreciation process of different interests.

A further aspect, which leads to even more complexity, is the municipal finance system. The income of a municipality consists mainly of a series of taxes like the land tax (Grundsteuer), the land acquisition tax (Grunderwerbssteuer) and the trade tax (Gewerbesteuer). Therefore simply

economics aggravate the problem of excessive land use for settlement and transport: the more inhabitants and business companies a municipality gains the more income it gets. Some taxes, like the land tax and the trade tax, are direct taxes to the municipalities. Other taxes, like the land acquisition tax, are reallocated by the federal states via a municipal financial equalization system (kommunaler Finanzausgleich).

## The CSD recommendations

The Council for Sustainable Development (CSD) worked out recommendations for the Federal Government to resolve the problem of land consumption based on a communication process with professional audiences (Rat für Nachhaltige Entwicklung 2004). This text clarified that the "goal-30-ha", first of all, had to be understood as a symbol of sustainable land use in the future and not only as a quantitative aim. Concerning actions, strategies and instruments, the text was classified in the sections "new overall concepts for a sustainable urban development", "new goal management", "other actions of the Federal Government" and "continuous land use dialogue".

Important aspects of the **overall concepts** should be the acceptance and management of settlement boundaries, and simultaneously, the safeguarding of the local planning autonomy. Moreover, the cooperation between neighbouring local authorities and a municipal area management that is capable of reaching social and ecological aims should be aspired.

Concerning new **goal management**, the CSD recommended to the Federal Government to introduce a new element into the spatial planning process: a planning obligation. Such a measure would require an amendment of the spatial planning act (ROG 1997). The amended act should prescribe that the federal states lay down a spatial planning programme with guidelines on minimum targets concerning the reduction of land consumption for settlement purposes. But it should also clearly state the obligation of the federal states to give an account of their land consumption.

A second important aspect of goal management from the point of view of the CSD was the idea of the internalization of all kinds of life-cycle costs of the infrastructure, as well as of ecological and social costs of an expansion of the settlement area. Recycling of derelict land and the improvement of the environmental impact assessment according to the nature conservation act in the case of building projects (BNatSchG 2002), should be further elements of new goal management, which includes aspects of quality.

In the section "**other actions of the Federal Government**", the CSD suggested fiscal actions, the reform of subsidies and the amendment of the building law. Tradeable planning permits were mentioned by the CSD, but not yet recommended as a strategy because of unsolved problems related to this economic instrument.

The last section clarified that one of the most important objectives is a continuous **communication process** on all social levels and the development of public awareness of the problem.

## Questions and methods

The investigators were asked to provide answers to the following questions:

1. Are there any measurable effects of the political programme "goal-30-ha" and of the CSD recommendations?
2. How do experts think about the political goal, the CSD recommendations and their effects?
3. Which strategies, instruments and actions would the experts recommend for approaching the "goal-30-ha"?

The investigations started in summer 2006 and were finished with a final report in December 2006. In order to check any effects of the political goal and of the recommendations, as well as inquire into the opinions of experts on the CSD recommendations, three different investigations took place and started one after another:

1. The first step was an internet-based desk research of the current programmes, projects and activities aimed at reducing the high level of land consumption. It addressed the first question mentioned above. The other important purpose of the desk research was to find experts (e. g. policy makers, members of the scientific community and of planning authorities, as well as of planning companies) who would participate in the workshops (step 3).

2. The second step was a poll in the internet to members of different professional audiences such as landscape architects, political analysts, planners and lawyers.

3. The last step was to plan and conduct three workshops with experts who were found during the desk research.

The answer to the first question can be briefly summarized by stating that there are indeed some measurable effects. At the moment, in Germany, a lot of programmes and projects at the federal level and at the federal state level are trying to contribute solutions to the problem. The great response to the poll and the interest of the experts in participating in the workshops reflect these activities on different levels.

## Poll in the internet

The poll in the internet took place between September 9, 2006 and October 20, 2006. During the desk research, about 1000 people belonging to the selected professional audiences were contacted by e-mail. 8000 people were informed by newsletters and mailing lists in particular of the CSD and Dialogik gGmbH. Furthermore, the CSD directed the people interested in the land management patterns to the poll on its website. 404 people responded to the internet questions.

## Workshops with experts

The selection of experts for the workshops was a result of the desk research. Professionals (scientists, policy makers, planners, representatives of administration and of NGOs) who were engaged in questions of land use management were invited. Altogether 60 experts participated in the workshops.

In workshop 1 and 2 the method “group delphi” (Webler et al. 1991) was applied as a means to measure the distribution of opinions on the CSD suggestions and to elicit a solution that would be agreeable for all sides. For this purpose, statements were formulated for the discussion (s. figure 1). The experts were asked to assess the goal achieving potential of certain instruments or measures and to voice their agreement or disagreement with measures recommended by the CSD or by the majority of the participants of the poll. They were requested to rank their opinion on a scale of 1 to 10. Working groups of 5 or 6 members discussed the issues and were asked to find a consensus wherever possible. In a plenary session the results of the working groups were presented. In the case of dissent the arguments were put forward to all workshop participants. Those statements where even in the plenary discussion a consensus could not be found were discussed once again in newly arranged working groups. The overall result of the delphi workshops was the knowledge about the distribution of consensus and dissent of the experts on strategies, measures and instruments to limit land consumption in Germany.

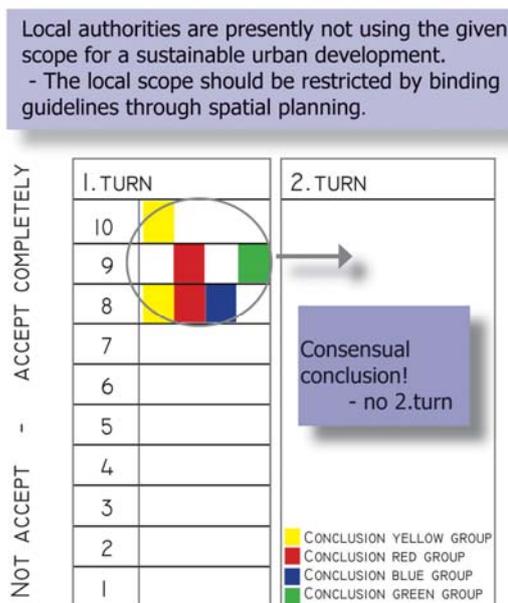


Figure 1 Example of a delphi statement and of a delphi valuation

The analysis of the two delphi workshops led to domains of measures, which seem to have a high goal achieving potential. These domains were objects of discussion and further specification in the third workshop. In addition to the documentation of the discussions, workshop 3 offered a visualisation of the expert opinions concerning the goal achieving potential, the social acceptance and the feasibility of the different measures, instruments and strategies. In each case, the participants had to distribute 10 points for goal achieving potential, social acceptance and feasibility.

## Results

The poll and the workshops showed that even the “goal-30-ha” itself has been discussed controversially among the professional audiences. Of the poll respondents, 34% believe that this goal could not be achieved by 2020. Nevertheless, 81% of those respondents think that such a political goal is necessary. In the delphi workshops a quantitative reduction goal at the federal level met the approval of the majority of the participants mainly because of its value as a political symbol. Some participants of the third workshop challenged this effect. Their arguments were: publicity for the “goal-30-ha” is difficult because it has no direct relevance for the individual citizen and his land use patterns, it is not possible to measure whether the goal can be achieved by 2020 and finally, there seems to be no way to make it obligatory. As a result of the delphi workshops, 9 domains of measures with a high goal achieving potential were identified (s. figure 2).



Figure 2 Domains of measures with high goal achieving potential according to the results of the delphi workshops

More specifically, the visualisation of the expert opinions of the third workshop concerning the goal achieving potential, the social acceptance and the feasibility of the measures, instruments and strategies is shown in figure 3. The graph illustrates the opinions of the experts regarding the importance of the domains “municipal area management”, “communication” and “recycling management of derelict land in urban areas in accordance with the requirements of full ecological cycles (Flächenkreislaufwirtschaft)” which is shortly named “recycling management”. Figure 3 also shows that the workshop participants gave specific advices to the domain “(municipal) financial equalization”.

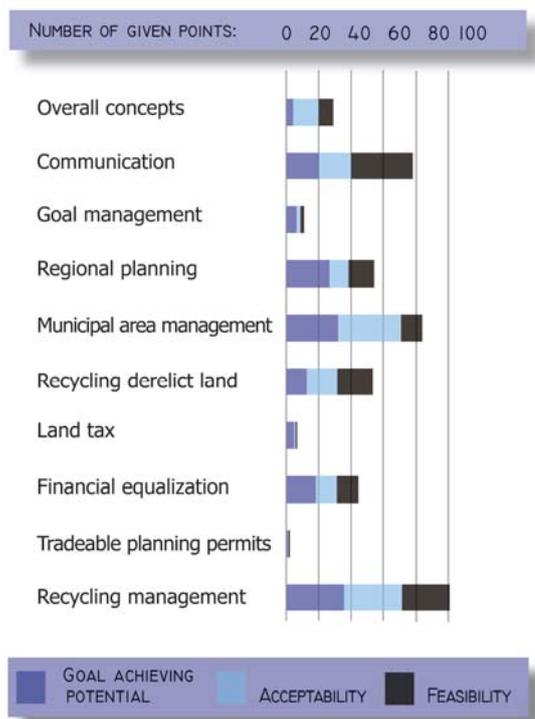


Figure 3 Visualisation of the opinions of the experts of workshop 3 regarding the importance of different domains of measures

The following presentation refers firstly to the contents of the main sections of the CSD recommendations (new overall concepts, goal management and communication). Secondly, it deals with the subject “economic instruments” because the poll revealed the hope of the respondents that those instruments could have a very high goal achieving potential. Because of this result, economic instruments were investigated in particular detail in the delphi workshops.

### Opinions of the experts on the CSD recommendations

#### New overall concepts

Overall concepts without specification on the municipal level were declared useless. The discussion of overall concepts, understood as a democratic, integrative and participative process, was seen as a precondition to a change of public consciousness. Furthermore, the overall concepts should be mandatory so that actions must follow.

The experts agreed that **municipal area management** is one of the most needed instruments to be integrated into a new concept. Most of the workshop participants expressed the opinion that the introduction of such a management system should be a voluntary action of a municipality and could not be dictated. Others pointed out that the building law (BauGB 2004) includes the directive of a building zone register, which is an important element of a management system. Furthermore, a municipality should work together with owners and investors and should act as a vendor of derelict land, if necessary. The probability of an implementation of this instrument

in the municipalities was not prized by the experts because of the high expense to be carried and because of possible communication problems within the municipal administration. Moreover, the experts emphasized the necessity of the active cooperation between municipalities, for example, concerning a cooperative management of commercial areas.

In the description of demands on new overall concepts, the CSD indicated the conflict between the local planning autonomy and the necessity of limitation of the local scope. Nevertheless, the CSD favoured maintaining the local planning autonomy. The workshop discussions underlined this cardinal conflict, which has its roots in the spatial planning act (ROG 1997) and ultimately in the Basic Constitutional Law of the Federal Republic of Germany. Some workshop participants shared the opinion, that more legal **regulations at the regional level** should be introduced to limit the scope of the individual municipalities. Others argued that, because of the judicial deep-seated local planning autonomy, only the voluntary commitment of a municipality to limit excessive land use could be a promising solution.

#### Goal management

As the two delphi-workshops showed, the majority of the experts thought that **quantified reduction goals** in particular on the regional and local level, and in this context the limitation of the local planning autonomy, are measures of a high goal achieving potential. In agreement with the CSD recommendations, this new goal management should be adopted by the spatial planning act (ROG 1997). However, the experts doubted that these claims will be legally enforceable.

During the third workshop, the participants of one team made the idea of goal management operational. From their point of view, the responsibility for the implementation of goal management must be assumed by the municipalities, which are organized in one planning region. They are obliged to make a fundamental decision concerning quantified reduction goals on the regional level. The planning region then should be responsible for controlling the process and the outcomes. The workshop experts suggested goal management should include up to ten main quantitative and qualitative goals on the regional level. The detailed elaboration must be done on the local level. The members of the expert team were convinced of this strategy, but they did not believe that this proposal would be enforced on the political level.

The **internalization of life-cycle costs** of infrastructure, as well as of ecological and social costs of land use, was declared to be an important idea and a necessary part of goal management. The poll in the internet and the delphi workshops showed that this idea has been rated as very complex to the extent that no conclusive assessment would pop up.

In the two delphi workshops, **recycling of derelict land** was declared as an instrument with a very high goal achieving potential. Two-thirds of the poll participants were aware of a recycling project. In the third workshop, recycling of derelict land and especially the problem-solving approach “**recycling management** (Flächenkreislaufwirtschaft)” (Federal Office for Building and Regional

Planning - Bundesamt für Bauwesen und Raumordnung 2006) were discussed in a more detailed way. Recycling management was defined as every kind of reutilization of formerly used sites. Even temporary use and renaturation of a field should be taken into consideration as possible options. A register of derelict land should be an instrument of planning and controlling the recycling process. Funds could help to accelerate the revitalisation and public relation activities are needed to highlight the advantages with regard to quality of life aspects of best practice examples. The economic and judicial insecurities and liabilities were considered to be problems in the revitalisation activities. In spite of these obstacles, the "recycling management (Flächenkreislaufwirtschaft)" was declared to be a promising overall strategy with a high goal achieving potential and a high feasibility. This strategy should dominate the content of new overall concepts. Municipalities should introduce registers and funds, regional governance should manage the cooperation between neighbouring local authorities. The main goal must be the integration of derelict land into a qualified inner development of urban areas.

The **improvement of the impact assessment of building projects**, which was a fourth aspect of goal management from the point of view of the CSD, was discussed controversially. Some experts shared the opinion that this instrument of the nature conservation act (BNatSchG 2002) helps to minimize a growth of the settlement area in an indirect way because municipalities have to pay money for compensation measures. In order to reduce the costs, they would try to avoid building measures. Others were sure that the impact assessment would mainly lead to the protection of ecologically valuable areas but would not contribute to the quantitative reduction goal. The goal achieving potential of the instrument was classified as medium in comparison with other measures. A second important aspect of the discussions was the method for compensating the sealing of soils. Resealing of another area as an adequate compensation measure is not practiced frequently so that the instrument would not contribute directly to the achievement of the reduction goal. Instead of resealing, in most cases, soil melioration measures take priority.

### *Communication and public awareness*

The majority of poll respondents believed that the common public and the representatives of the mass media in Germany have nearly no awareness of the land consumption problem. About half the respondents thought that the consciousness of the politicians is in low gear. This result underscores the importance of a new communication strategy. The workshop participants shared the opinion that a communication strategy and the development of new overall concepts are closely connected and very important. Especially schools, journalists and municipalities were mentioned as important target groups. Nonetheless, they did not expect that public awareness of the ecological functions of soils could be considerably raised by public relation activities. In order to improve public acceptance of a change, the experts proposed a communication strategy which underlines the positive aspects of high-quality inner development of cities and villages, and which minimizes the communication

about the complexity of the problem. They also recommended the target-group specific transfer of knowledge about excessive land use and the connected ecological, economic and social relationships. Another important component of a communication strategy should be the direct contact with representatives of the municipalities as the most important players. A helpdesk for municipalities should be established.

### *Economic measures and instruments*

Of the poll respondents, 68% think that "economic measures" have to be taken to solve the problem. In the workshops, the introduction of new taxes, grants and licenses, as well as the abolition and reform of existing ones, with regard to achieving the "goal-30-ha" was discussed in detail.

One of the results of the poll and the workshops was that economic instruments with a high goal achieving potential seem to be difficult to enforce because they are not socially accepted. Reforms would be very complex and would have to be handled with care because the interactions between various economic measures and other sustainability goals must be kept in mind. The reform of the municipal finances seemed to be a very important step, but at the same time difficult to implement and facing lack of social acceptance.

There was no consensus about the importance of **financial incentives**. Some experts thought that the development of public awareness of the problem is much more important than financial incentives. Others pointed out that successful revitalization projects could be promoted by financial support. A dispute took place about the problem whether **taxes** on land use and sealing as indirect negative incentives are more or less efficient than **grants**, which could act as direct positive incentives.

The CSD recommended the abolition of the land acquisition tax (Grunderwerbssteuer), especially in the case of intermediate municipal acquisition and the reform of the land tax (Grundsteuer). The land tax system should be revised so that occupying new land on greenfields would be more expensive than the redevelopment of formerly used sites in the inner zone. There was no consensus about the goal achievement potential and the feasibility of these measures. The workshop participants discussed the introduction of new taxes. One proposal was the levy of a land tax in a planning region, which should be reinvested into revitalisation projects in the same region. Some experts proposed municipalities should pay taxes to the federal state level or to the national level in the case of new land use. The experts of the third workshop recommended the financing of revitalisation and renaturation measures through the municipal financial equalisation system.

Concerning the abolition or introduction of grants, most experts thought that carefully directed financial support of the inner development of a city is an important measure. They believed that the abolition of existing grants (for example federal subvention for private homebuilders) has only a low goal achieving potential.

**Tradeable planning permits (land certificates)** have been discussed in the last years in Germany as a promising instrument. The CSD only

recommended further investigations. Whereas economists are convinced of the optimal goal achieving potential, the instrument of permits was contested from a judicial point of view. Critics pointed to the conflict with the local planning autonomy or challenged whether a permit solution would lead to a real change of consciousness because of the possibility of using land for settlement purposes up to a certain target. This controversial discussion also took place in the delphi workshops. In the third workshop, the feasibility of the instrument was assessed as very low because the allocation of the contingents seemed to be a problem which is difficult to solve consensually.

### Main recommendations of the experts

These are the most important recommendations of the workshop experts:

- The qualitative implications (quality of the soils and the landscape, quality of life in urban and rural areas) of the political programme "goal-30-ha" should be specified in more detail and clarity because the goal is not obvious in itself.
- The regional planning level should be strengthened and regional cooperation should be encouraged. Most of the experts share the opinion that the spatial planning act (ROG 1997) must be amended in order to mandate goal management and the obligation to introduce municipal and regional area management systems. The municipalities of one planning region have to make a fundamental decision concerning quantified reduction goals, and the planning region should be in charge of the realization of it. The CSD should give advice regarding the goal management strategy during the amendment process of the spatial planning act, which will be accomplished in the near future. In conclusion, a combination of cooperative municipal and regional area management was recommended by the experts. The strategy of a recycling management (Flächenkreislaufwirtschaft) should be integrated in the overall concepts. Start-up financing programmes could help to initialize the cooperation and management approaches in model projects.
- The municipal area management should be communicated to the head organisations of the municipalities like "Deutscher Städtetag (Association of German Cities and Towns)" and "Deutscher Städte- und Gemeindebund (German Association of Towns and Municipalities)". A helpdesk for the purpose of counselling municipalities in all questions of management should be established. In order to strengthen a municipal management approach, it should have its basis in the building law and the federal states should give financial incentives.
- The CSD should check if it is possible to develop an overall strategy which can be recommended to the Federal Government. This overall strategy should mainly include the most promising measures and instruments, and should take into account the inter-dependences of the different parts, as well as a time table until the year 2020. The CSD

should prioritize and specify the recommended measures in the overall strategy.

- The experts pointed out that regional disparities in Germany have to be taken into account for problem-solving approaches to be efficient. Shrinking regions have to act differently from growing regions.
- Finally, the CSD was asked to act as a promoter of networking with and between the local and regional players, as well as with business representatives, journalists and schools. The council should also integrate considerations at the European and international level.

### Conclusions

The results of the investigation confirm the need for evaluation of the goal-30-ha and of the CSD recommendations. Two years after the publication (Rat für Nachhaltige Entwicklung 2004) it is obvious that an overall strategy including the prioritisation and specification of measures have to follow in order to approach the quantitative and qualitative implications of the reduction goal. The investigations underline, on the one hand, the importance of planning at the municipal level, and on the other hand, the needs of strengthening the regional planning level. The implementation of goal management could take place through voluntary commitments of the municipalities and through amendments of the spatial planning act. The local players are the most important target group for a communication strategy. The Council for Sustainable Development was advised to initiate a broader and intense discussion about the need for integrated concepts on the local level in order to contribute to a change of consciousness. Active municipal area management, communication and cooperation within and between municipalities and regional area management approaches constitute the main components of the desired concept. The workshops revealed a deep-seated scepticism of the experts concerning the feasibility of goal management and of using economic instruments. However, the strategy of a recycling management (Flächenkreislaufwirtschaft) was declared a promising problem-solving approach.

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