Evaluating a new participatory planning approach for sustainable landscape development in Switzerland – participatory techniques and social effects of Landscape Development Concepts (LDC)

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Abstract

In recent years, the Landscape Development Concept (LDC) has become a popular instrument for sustainable landscape planning on local and regional levels in Switzerland and Germany. In an LDC different participatory techniques are applied to involve stakeholders, authorities, planners and the public. Planners and decision makers involved in the field of sustainability need knowledge of the commonly assumed, but as yet not confirmed social effects of this new planning instruments to identify ways toward a sustained climate of confidence, mutual understanding, cooperativeness as well as the acceptance of sustainable planning projects. In order to provide empirical data on these issues, a mail survey among the project leaders of all completed municipal LDCs in Switzerland was conducted. Results indicate that past LDCs have involved a variety of stakeholders and interests, mostly focusing on ecological dimensions, and that local residents have been insufficiently involved. Among different participatory techniques, interactive techniques to involve directly affected residents were preferred over techniques involving the wider public. LDCs proved to contribute to all investigated social effects. However, acceptance of decisions and implementations was not obtained in all cases. In future, LDCs in Switzerland need to proceed in a more integrative and comprehensive manner in order to take full advantage of this instrument's potential for a more sustainable landscape development.
Keywords: participation, involvement, landscape planning, landscape development concepts, mutual understanding, trust, cooperation, acceptance, social capital.

1 Introduction

In recent years, the Landscape Development Concept (LDC) emerged as a new planning instrument in Switzerland and Germany. At the beginning it was a fairly vague approach lacking a definition and an elaborated methodology. By the end of the 1990s it attained a more official meaning in the course of the Swiss sustainability policy (BfR [1], BUWAL [2]). Hence, efforts were made to specify the concept of LDC. According to pioneer works an LDC is considered an instrument to draw visions for a preferable development of the landscape under the principles of ecological, societal and economic sustainability (Bolliger et al. [3], Bossard [4]). The LDC arose from an understanding of planning as a corporative and communicative process. Therefore, core elements of an LDC are participatory techniques to involve stakeholders and the public.

In the "Landscape Concept Switzerland" the Swiss Agency for the Environment, Forest and Landscape (BUWAL [2]) recommends the elaboration of LDCs on the levels of cantons (federal states), regions and communities. The term LDC is thus already prominent. What still remains unclear is how the concept of LDC has been adapted in practice and which experiences have been made with this new planning instrument. Evaluation research regarding the social effects of LDCs is especially needed. The present study addresses these gaps in knowledge, ultimately to help to enhance the methodology of the LDC.

We start by defining the concept of LDC and highlight the differences to conventional planning instruments. Then we present an outline of existing literature about LDCs in Switzerland followed by a brief overview of the theoretical framework of our study. Specifically we identify the contribution of the participatory planning approach of LDCs to social aspects. Subsequently, empirical results of the study will be presented and discussed.

1.1 LDCs in Swiss landscape planning

LDCs are to be regarded as a response to the current state of landscape planning in Switzerland. In contrast to residential areas and infrastructure, landscape in the sense of green space has actually a critical and subordinate status in spatial planning. No official self-contained planning instrument deals with landscape as a whole, considering and developing all its functions in an integrative manner. In fact, landscape development is steered by orders and prohibitions and is geographically very selective (Schubert and Condrau Bossard [4]). Merely in residential areas, land use designation is regulated by municipal plans (Kommunale Richtpläne, Teilrichtplan Landschaft). For non-residential areas, conventional planning does not provide instruments for managing the landscape of a municipality or region (Geissbühler [6]). It is generally assumed that the prevalent top-down and intervention-based approach in landscape planning results in disagreement with planning projects, mistrust and conflicts among landscape users (Godschalk and Paterson [7], Winter [8]).

LDCs are expected to solve this dilemma within landscape planning. An LDC claims to include all functions and uses of a landscape (e.g. agriculture, forest, flora, fauna, leisure or settlement), treating them comprehensively rather

than separately. In other words, it aims to coordinate the different interests of landscape use (Geissbühler [6]). For this end, plans have to be developed successively, bringing together groups of interests, directly affected people, authorities, experts and interested people from a wider public. As the LDC is not a legally binding instrument, wide acceptance and support for the project implementation by the involved parties are crucial for its success. Hence, it is argued that the joint process of planning and decision-making ensures a sustained acceptance of and satisfaction with planning projects. Sustained acceptance and satisfaction are seen as results of certain social effects, which are expected to come along with the application of participatory techniques. For example, continuous involvement should encourage people to identify with decisions and to take responsibility for the implementation. Collective formulation of goals and plans is believed to create a climate of trust, which is crucial for good and long lasting cooperation. Similarly, an LDC is supposed to improve the understanding of mutual concerns and provides the opportunity to handle conflicts resulting from different land uses. Furthermore, it is expected to awake the interest of a wider public in questions of local landscape development (Winter [8], ARV [9], Bolliger et al. [3]).

The currently existing literature concerning LDCs is reviewed quickly. A few studies focus on conceptual work and thus provide a methodological framework for practice (Bolliger et al. [3], Baudirektion des Kantons Zug [10]). Some authors describe differences among LDCs and conventional planning instruments (Bossard [4], Geissbühler [6], Winter [8]). Only a few LDCs are well documented in practice reports. Most reports are evaluations of the success and impact of an LDC using objective criteria as for example an increased number of species (e.g. Zürcher Planungsgruppe Glattal [11], Wandeler [12], HSR [13]). Merely in one Swiss study, the local population was questioned about their acceptance of the LDC (HSR [15]). In short, neither conceptual literature nor practice reports provide a systematic investigation of (a) the current practice of persons and topics involved and participatory techniques used and (b) the social effects usually attributed to LDCs. Present knowledge of the LDC is exclusively based on expert conclusions derived from individual cases.

As the present study investigates the social effects of the LDC as a participatory planning approach we are going to specify these effects in the next section.

1.2 Social effects of participatory processes

In this section, we point out how participation can be defined in the context of spatial planning and which social effects are attributed to it. Participation here means that individuals and groups are involved and thus exert influence in spatial development processes (cf. Buchecker [16]). There is a wide range of formal and informal techniques to enable participation. In contrast to formal techniques like voting or petitions, the use of informal techniques (e.g. idea or future workshops, round table) is not mandatory for planning processes. According to the degree of participation and the prevailing mode of communication, we divide the techniques into three basic groups, information

techniques, consultation techniques and interaction techniques (cf. Fürst et al. [17]). *Information* techniques provide media or arenas to inform about plans and projects. Since one-way communication prevails in information techniques, they are characterized by a low degree of participation. Techniques of *consultation* aim to produce a picture of the existing local knowledge, needs, opinions and concerns. Due to the predominant two-way, though not dialogical form of communication, these techniques are considered to have a middle degree of participation. The third group, *interaction* techniques, can be characterized by a high degree of participation. These techniques are processes of interactive discussion and exchange of arguments. Such interactive processes differ from the second group by their dialogic, face-to-face nature of communication.

As a continuous and dialog-oriented planning process, the LDC can be located in a line with prominent concepts from political and planning sciences such as communicative planning (Fischer and Forster [18], Forester [19], Healey [20, 21], Sager [22]), consensus building (Innes [23, 24], Susskind et al. [25]) and public deliberation (Chambers [26], Fishkin [28], Gastil [29]). The methodology of an LDC does not adhere strictly to these normative concepts, but participatory techniques suggested for an LDC are substantially based on elements of these concepts.

Some scholars argue that the distinctive value of such techniques is their social effects (Chambers [26], Innes [24]). According to the concepts of communicative planning, consensus building and public deliberation, a continuous process of two-way communication can lead to agreement and consensual decisions (Beierle and Konisky [29], Innes [24]), although it is also argued that new disagreements and conflicts may emerge from raising questions and discussing problems (Colgianese [30]). Better mutual understanding and increased tolerance are expected if persons with different interests, needs and opinions join a process of interactive communication to discuss problems, develop projects and make decisions (Gutmann and Thompson [31]). The building of trust is a further essential social effect because it is regarded as a precondition for the ability and willingness to cooperate (Beierle and Konisky [29], Fishkin [33], Innes [24], Putman [32]). Moreover, people are expected to engage more with discussed topics (Barber [34]).

As already outlined, the present study aims to describe the current practice of LDCs in Switzerland and provide initial knowledge about social effects commonly attributed to LDCs. To this end, we specify four research questions:
1) Which landscape functions and topics are included in LDCs?
2) Who is involved in LDCs?
3) Which techniques are used to involve stakeholders, authorities and the public?
4) What social effects do LDCs have?

2 Methods

2.1 Participants and procedures

Since concrete planning projects have to be implemented on the local level, the investigation of municipal LDCs is most appropriate to answer the research

questions. To identify municipalities that had already developed an LDC, enquiries were made at authorities of all German-speaking cantons. 16 communities in four cantons were found which had already completed or were about to complete an LDC project. A standardized questionnaire was mailed to the people responsible for the LDC project, i.e. the project leaders. Projects leaders were active persons with a background in agriculture, forestry or nature and species conservation, usually holding some position in the municipality council. Commonly such a people are involved throughout the process of developing the LDC. Thus they represent a relatively homogenous group regarding their role in the LDC. Of 16 questionnaires, 14 were returned. Thus, based on this small sample, no statistical tests will be performed.

2.2 Measurement instruments

The applied questionnaire consisted of closed questions with fully standardized response options covering five issues:

2.2.1 Landscape functions

A list of 8 landscape functions was presented. Respondents were asked to indicate the landscape functions included in the LDC. All 14 respondents completed this section.

2.2.2 Involved stakeholders and scopes of interests

We provided a list of 16 scopes of interests that persons or organizations could belong to. Since methodical literature recommends the establishment of core groups in LDCs, we asked this question regarding the LDC core groups and additionally involved organizations and associations separately. 13 respondents completed this section.

2.2.3 Participatory techniques

A list of participatory techniques was presented, containing four information techniques, two consultation techniques and eight interaction techniques (cf. Table 1). Respondents were asked (a) to report which of the listed techniques were applied using a yes/no format and (b) to rate the importance of each technique used in the LDC on a 5-point Likert scale ranging from 0 (not important at all) to 4 (very important).

2.2.4 Overall success of LDC

Respondents were asked to rate the overall success of the LDC on a 7-point Likert scale ranging from 0 (not successful) to 6 (very successful).

2.2.5 Social effects

Two sets of items were presented to assess the social effects of the LDCs. First, respondents were asked to rate directly the contribution of formal meetings and informal discussions to four aspects: mutual understanding, trust, cooperation and acceptance. Second, a set of 14 items assessed the respondent's agreement to statements regarding the effects of the LDC as a whole on the social aspects

(cf. Table 2). For this, a 5-point Likert scale was used ranging from 0 (strongly disagree) to 4 (strongly agree).

3 Results

3.1 Landscape functions included in the LDC

With one exception, the analyzed LDCs addressed between 5 and 8 of the 8 landscape functions presented in the questionnaire. Agriculture was an issue in all 14 LDCs. Further popular topics were nature and species conversation (in 13 cases), leisure and outdoor recreation (12 cases), and forest and water development (11 cases). The least popular topics were the development of non-housing areas in residential zones (8 cases).

3.2 Interests involved in the LDC

At the beginning, all LDCs established a core group or committee consisting of a fixed circle of involved persons. This group held meetings during the whole LDC, from the preparation to the planning and implementation phase. We found that the number of scopes of interests involved in the core groups differed strongly between LDCs. Two LDCs involved core groups whose members represented 14 and 15 different scopes of interests, whereas the majority of core groups (in 7 cases) involved between 8 and 11, and only 5 and 7 scopes of interests were represented in the core group of two cases. There was a clear dominance of persons with a background in agriculture (12 cases), nature and species conservation (11 cases) and members of the municipality council (12 cases). Local planning agencies (8 cases), landowners (8 cases) and persons with a background in forestry (7 cases) were also well represented in the core groups. Noteworthy is the low number of represented resident associations (2 cases) and of persons representing leisure and outdoor recreation interests (4 cases). Furthermore, local trade and commerce interests were involved in only 4 cases and are therefore clearly underrepresented.

Besides the involvement of different interests in a core group, all LDCs established communication with between five and 15 interest groups and organizations. In comparison with the core group, we found a more equal distribution of representatives from different backgrounds. Though, similar to the core group, there was a predominance of representatives and organizations from agriculture (in 6 cases), forestry (7 cases), the municipality council (6 cases) and nature and species conservation (5 cases). Representatives of neighbor municipalities participated in 8 LDCs. Although involved in 5 LDCs, associations of local residents were still underrepresented in comparison to other interest groups. An exchange with local trade and commerce and representatives of leisure and outdoor recreation activities was only given in 2 cases.

3.3 Applied participatory techniques

In the LDCs (n=13) information techniques, consultation techniques and interaction techniques were applied, except from two municipalities that did not

use consultation techniques. Table 1 contains the prevalence and the importance reported for each technique.

Table 1: Prevalence and perceived importance of participatory techniques.

	Number of LDCs (*n*=13)	Average importance for the LDC
Information techniques		
Newspaper reports, info letters, flyer	12	3.00
Information events for residents affected directly by LDC	11	3.30
Information events for interested local people	10	2.45
Internet	8	2.88
Consultation techniques		
Mail survey	8	1.50
Voting about measures	6	2.17
Interaction techniques		
Meetings of LDC core group	13	3.92
Field inspection tours and walks with residents affected directly by LDC measures	13	3.46
Informal discussions with directly affected residents	12	3.67
Formal meetings to discuss concerns of affected persons	12	3.42
Formal meetings to discuss concerns of local residents	11	2.82
Field inspection tours and walks with interested local people	10	3.20
Working groups	9	3.33
Idea workshop, future workshop	5	2.60

Note. Importance scores range from 0 (not important at all) to 4 (very important).

In general, interactive techniques were used more often and considered to be more important for an LDC (M = 3.30) than information (M = 2.90) and consultation techniques (M = 1.8). Specifically, core group meetings, walks and field inspection tours with residents directly affected by the measures of the LDC (e.g. farmers, land owners) were used and considered most important for the LDC process. In contrast, techniques to interact with a wider local population (e.g. ideas workshops, walks and field inspection tours) were used less often and rated less important. The wider, indirectly affected local population was involved by information techniques rather than by interaction or consultation techniques. Though idea and future workshop are least popular techniques, they are still considered to be more relevant for the LDC than presentations, votes or surveys. In most cases, the local population was informed about the LDC by reports, flyers, information letters and presentations. Consultation techniques to assess public opinion and concerns (i.e. surveys and votes) are used less often and reported to be not or only partially relevant for the LDC.

3.4 Participatory techniques and the overall success of the LDCs

To approach the impact of participatory techniques we divided LDCs into two groups, one "high participation" group applying a high number of participatory techniques (i.e. more than 70% of all techniques, in 6 cases) and a "low

participation" group applying a lower number of techniques (i.e. less than 70% of all techniques, in 7 cases). The overall success rating was considerably higher in the group applying many techniques (M = 4.83) than in the group applying fewer techniques (M = 3.85).

3.5 Social effects of LDC

3.5.1 Social effects by form of participation

Respondents were asked to rate how much informal discussions and formal meetings contributed to an understanding of mutual concerns, a climate of mutual trust among participants, the cooperation among participants and the acceptance of decisions. Figure 1 shows that respondents generally agree about the positive impact of both informal discussions and formal meetings in the context of an LDC process (n between 12 and 14). However, we found that informal discussions are believed to contribute more to all four social aspects than formal meetings.

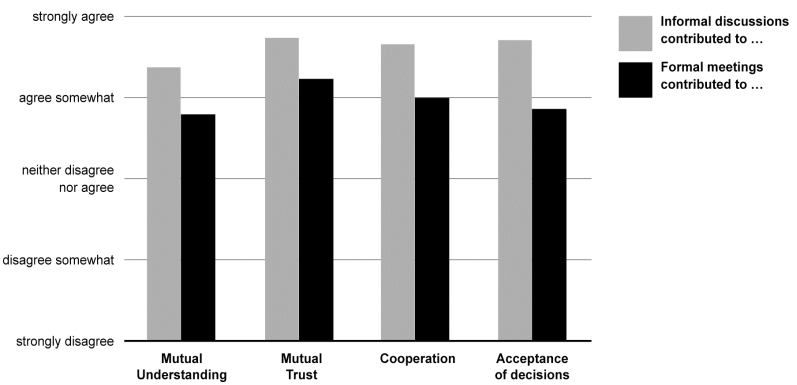

Figure 1: Average perceived contribution to four social aspects by form of participation.

3.5.2 Dimensions of social effects

The following sections describe social effects in more detail.

3.5.2.1 Mutual understanding The previous results seem to suggest that LDCs generally yield a better understanding of mutual concerns or views. To investigate this effect in more detail, we used five items (see Table 2). We asked respondents how they rate the statement "I acquired a better idea of participants' concerns during the LDC process". All respondents agreed to this statement. Furthermore, most respondents agreed that the LDC was a good opportunity to hear about different opinions and exchange views with only one respondent reporting a neutral view. The statement "Participants were open for other points of view" was rated more critically (cf. Table 2). In 6 cases participants neither

agreed nor disagreed and in one case the respondent disagreed somewhat. Furthermore, respondents reported that participants became more sensitive to the concerns of farmers in 12 of 14 cases (M = 3.14), but not to the concerns of planners and experts" (M = 2.54). However, we found that respondents from "high participation" LDCs (cf. section 3.4) agreed more with this latter statement (M = 2.83) than respondents from "low participation" LDCs (M = 2.17).

3.5.2.2 Trust We asked respondents to rate if trust among participants was damaged during the LDC. Respondents strongly disagreed with this statement, with respondents from "high participation" LDCs disagreeing more (M = 4.00) than respondents from "low participation" LDCs (M = 3.14). The statement "Participants considered decisions as binding" reflects the respondents' confidence in participants' commitment to decisions and was rated more negatively (cf. Table 2).

Table 2: Average rating of social effects of the LDCs.

Social effect items	Total *N*	Mean
Mutual Understanding		
I acquired a better idea of participants concerns during the LDC process.	14	3.43
It was a good opportunity to listen to different opinions and exchange	14	3.36
Participants were open for other points of view.	14	2.71
The LDC made participants more sensitive to the concerns of farmers.	14	3.14
The LDC made participants more sensitive to the concerns of planners	13	2.54
Trust		
Trust among participants was damaged during the LDC. *	14	3.57
Participants consider decisions as binding.	14	3.00
Cooperation		
Cooperation among participants was good.	14	3.57
Participants cooperate actively in the implementation of decisions.	13	2.85
Cooperation has improved during the LDC.	13	3.15
New cooperation emerged in the wake of the LDC process.	9	2.78
Acceptance of decisions		
Participants agreed on decisions.	13	2.85
After completing the LDC participants expressed discontent with	13	3.08
There emerged opposition during the implementation of decisions.*	12	2.75

Note. N indicates the number of respondents answering each individual statement, except those indicating they were unable to answer. Agreement scores range from 0 (strongly disagree) to 4 (strongly agree). Scores of negative items (*) were recoded, so that means can be compared.

3.5.2.3 Cooperation A majority of respondents strongly agreed that "Cooperation among participants was good in general" as well as in the implementation phase specifically (cf. Table 2). However, the statements "Cooperation has improved during the LDC" and "New cooperation emerged in the wake of the LDC process" were less agreed upon, with 2 respondents disagreeing to each statement. Again, we found that cooperation improved less in "low participation" LDCs (M = 2.00) than in "high participation" LDCs (M =

3.83). This result corresponds to the finding that new cooperation emerged more often in "high participation" LDCs ($M = 3.25$) than in "low participation" LDCs ($M = 2.40$).

3.5.2.4 Acceptance of decisions The statement "Participants agreed with the decisions made" was mostly agreed with, with 5 respondents reporting no particular view. Only in three municipalities, participants openly expressed discontent with decisions and opposition emerged during the implementation phase in three municipalities. Surprisingly, "high participation" LDCs agreed less with regard to all three statements assessing the acceptance of decisions.

4 Discussion and conclusions

The present research analyzed Swiss municipal Landscape Development Concepts (LDCs) with regard to their constitution, implementation and effects. Since LDCs are supposed to integrate all relevant issues and interests, we first inspected the landscape functions and scopes of interests involved. Results indicate that LDCs generally integrate landscapes comprehensively, as far as "green" aspects are considered: agriculture, forest management, water management, leisure, outdoor recreation or nature and species conservation are popular topics. However, in half of the LDCs, the development non-housing area in residential zones was not taken into account. These landscape functions and uses are steered exclusively by separate planning instruments. Consequently, further efforts are needed to develop different landscape functions in a genuinely integrative manner.

Not surprisingly in this regard, representatives of agriculture, species and nature conservation and members of the municipal council dominated in LDC core groups. Representativeness of interests is thus rather unbalanced in the core group, which is considered to be the heart of an LDC. The fact that representatives of local residents, or of trade and commerce were less often involved may be due to a lack of competence or willingness among authorities to involve them. As leisure and outdoor recreation is regarded as a popular topic in LDCs the low number of persons representing such landscape uses is also rather surprising. Including issues in an LDC without involving their representatives may be the source of new misunderstanding or may strengthen existing conflicts. However, LDCs also benefit from the exchange and intercommunication with interested groups, persons and associations beyond the core group. In this regard, the LDC proved to be more representative than their core groups were.

In order to gain insight into the current practice concerning the implementation of the LDCs, we examined the applied participatory techniques. Nearly all LDCs used three types of techniques, i.e. they informed, consulted and interacted with different groups of interest and residents. The main focus was on the involvement of interest groups and directly affected residents using communicative interaction techniques like group meetings, field inspections and informal discussions. In contrast, the wider local population was merely informed in most cases. Arenas for interaction with not directly affected

residents are considered less important in the context of an LDC. Future or idea workshops are infrequently used, possibly due to high organizational and financial cost. Remarkably, even public voting, i.e. the consultation technique probably most familiar for Swiss residents, is considered less important than information and interaction techniques and is rarely used in LDCs. To support local awareness of sustainable landscape development, future projects need to make more efforts to interact with a wider range of local residents.

The LDC was found to contribute to all social aspects investigated, i.e. mutual understanding, mutual trust, cooperation and acceptance of decisions and their implementation. For the planning practice it is crucial to know whether participatory techniques applied in LDCs result in a sustained acceptance of projects and commitment to decisions made, because the LDC is not a legally binding planning instrument. Confidence in the other participants' commitment was expressed in most but not in all cases. Similarly, we found that not in all LDCs participatory techniques contributed to a full agreement of participants with decisions made. Furthermore, discontent and opposition to implementation was not completely avoidable. Lacking efforts to involve the local population or inadequate techniques may be reasons for this opposition. Thus, for future landscape development projects, efforts have to be made to involve a wider range of local population by interaction techniques.

A high number of participatory techniques strongly contributed to the perception of an improved cooperation among participants and of overall success, although a high participation also facilitated discontent with and opposition to decisions. These findings support the argument that an intensive process of raising and discussing questions and problems does not necessarily result in full acceptance of decisions. Initially, involvement of different points of view and opinions may lead to disagreement. Notwithstanding this finding, discussing issues informally was found to be essential for a better mutual understanding, trust and cooperation. Accordingly, LDC experts consistently rated the contribution of informal discussions to all social aspects more positively than the contribution of formal meetings. This is a crucial finding for understanding the benefit of the methods generally applied in LDCs: Formal meetings provide a frame for informal discussions and thus create opportunities to strengthen social ties. Thus, the benefit of an LDC is that it provides a variety of arenas for communicative interaction. This finding about the specific value of formal and informal settings provided in LDCs may help to improve participation practice in Swiss Landscape Development.

Yet, it has to be considered that we evaluated the LDCs by assessing views and opinions of a particular group, the project leaders. In general they are initiators and motors of LDC processes and may judge things differently and rather more positively than other participants. For a more comprehensive evaluation, the views of other participants and the wider population should be included in future research.

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