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Conceptualising Quality in Spatial Planning
Planungsqualität in der Raumplanung

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Abstract: Quality discourses help to legitimate professions. This article therefore addresses the crucial question of how quality can be framed in spatial planning. Based on the context of spatial planning in Austria, this article introduces a normative framework for quality in spatial planning that considers the four dimensions of content, planning methodology, planning process and legal compliance, and shows how these four dimensions are interlinked. Furthermore, it discusses how quality can be enhanced by concerted governmental action and further education for planners. It is argued that planners might need to adopt a new role as 'teachers' in planning processes to facilitate societal learning processes in order to raise the quality of planning. Finally, it is concluded that the quality debate in spatial planning can be useful to calibrate expectations of planners and society to directly influence sustainable spatial development through spatial planning, to communicate achievements in planning, to raise awareness for sustainable spatial development, and to improve legal frameworks, planning methodology, and planners' training and further education.

Keywords: Planning quality, planning content, planning methodology, planning process, legal compliance, spatial planning, role of planners

Zusammenfassung: Qualitätsdiskurse tragen dazu bei, Fachdisziplinen zu legitimieren. Dieser Artikel wirft die Frage auf, wie Planungsqualität im Kontext von Raumplanung und Raumordnung definiert werden kann. Das vorgestellte Konzept von Planungsqualität, das aus den vier Dimensionen Planungsinhalt, Planungsmethodik, Planungsprozess und Rechtssicherheit besteht, wird am Beispiel Österreichs erläutert. Des Weiteren wird diskutiert, wie diese Aspekte von Planungsqualität durch abgestimmte politisch-administrative Steuerung sowie durch Weiterbildung von Planerinnen und Planern weiterentwickelt werden kann. Dadurch wird deutlich, dass zur Erzielung einer hohen Planungsqualität das Rollenverständnis von Planerinnen und Planern um die Facette der/des ‚Lehrenden' in Planungsprozessen erweitert werden sollte, um soziales Lernen in Planungsprozessen zu unterstützen. Als Schlussfolgerung wird herausgearbeitet, dass eine Planungsqualitätsdebatte die Erwartungen der Gesellschaft an Planung zur Unterstützung nachhaltiger Entwicklung kalibrieren, Planungserfolge sichtbar machen, Bewusstseinsbildung für nachhaltige Raumentwicklung betreiben und Beiträge zur Weiterentwicklung von Rechtsrahmen, Planungsmethodik sowie Bildung und Weiterbildung für Planerinnen und Planer leisten kann.

Schlagworte: Planungsqualität, Planungsinhalt, Planungsmethodik, Planungsprozess, Rechtssicherheit, Raumplanung, Rolle von Planerinnen und Planern

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1 Introduction

The question of quality in spatial planning has inspired a great variety of thought in planning theory, as it addresses both the legitimation of planning as a discipline and the evaluation of planning effectiveness. The distinction between good and bad plans influences the perception of what planners do or should do and, therefore, provides guidance for planning processes and planning outcomes (Alexander/Faludi 1989). Furthermore, plan quality is important for successful plan implementation (Berke/Backhurst/Day et al. 2006). Bear (1997) categorises the different purposes of evaluation along the planning process, moving from plan evaluation in order to choose the best alternative, to plan critique of an individual plan after adoption, to comparative analysis, research and professional evaluation. It follows that reasons for plan quality assessment range from legitimation of the discipline to the evaluation of individual plans and comparative analyses to support planning education and advances in planning methodology, both substantive and procedural.

Whereas most studies focus on internal and external plan quality, or the plan and its outcomes (e.g. Bear 1997; Berke/Godschalk 2009; Lyles/Stevens 2014, Stevens/Shoubridge 2015), some authors also look at the process of plan making as a learning process (e.g. Brody 2003; Oliveira/Pinho 2010; Stöglehner 2010) or at the applicability and usefulness of certain methods like cost-benefit analysis or multi-criteria analysis in plan making (e.g. Ellen/Yager/Hanson et al. 2016). The distinction between assessing the quality of a plan itself and the quality of plan implementation is essential: one end of the spectrum argues that the link between plan and action and the outcome of plan implementation defines the quality of a plan; the other that a plan is already useful when utilised in decision-making processes, no matter whether the original plan is followed or not. Between these two extremes lies the position that a plan of good quality is to be implemented, and that the positive effects of the plan should outmatch the undesired negative impacts by far (Alexander/Faludi 1989). Quality of planning is embedded in planning culture (Levin-Keitel/Othengrafen 2016), defined as a regime of beliefs, patterns of thinking, values, attitudes and meanings that guide the perceptions, thoughts and actions of the members of a society. The concept of planning culture allows more specific identification of the ways in which spatial planning can influence spatial development in a certain societal and spatial context. Quality of planning, as used in this article, comprises the quality of the plan and its implementation under consideration of the legal and societal frameworks in which planning takes place.

The majority of the planning literature related to planning quality addresses methods and criteria of plan and/or planning quality as well as their application to certain case studies. These issues comprise the value base that the plan should be assessed against, e.g. the public interest (see e.g. Alexander 2002), or the ability of plans to address certain challenges for planning like climate change (see e.g. Ellen/Yager/Hanson et al. 2016) and hazard mitigation (see e.g. Brody 2003; Stevens/Shoubridge 2015), or the relevance of certain planning steps like monitoring and evaluation (Seasons 2003). Most of these methods are based on five to eight dimensions of criteria that are specified by evaluative questions or criteria addressed to specific plans. These dimensions are e.g. adequacy of context, 'rational model' considerations, procedural validity, adequacy of scope, guidance for implementation, approach-data-methodology, quality of communication, plan format (Bear 1997), issue identification and vision, goals, fact base, policies, implementation, monitoring and evaluation, internal consistency, organisation and presentation, inter-organisational coordination, and compliance (Berke/Godschalk 2009; Stevens 2013).

Despite this state of the art, there is still no holistic concept of planning quality that integrates purpose, context and method of plan quality appraisal, and that could be operationalised in different aspects of planning practice. This might also be explained by the circumstance that the state of the art discussion about planning quality is not linked to ideas from quality management. Quality management, according to the ISO 9000 regime, defines quality as the degree to which a subject – whether a product, a service or a process – is able to fulfil requirements because of its inherent characteristics (Schmitt/Pfeifer 2015: 20 f.). Applying this concept to planning, quality of planning includes (a) the quality of plans and (b) the quality of planning processes (c) from the perspectives of planners, decision makers, authorities, stakeholders, the interested and affected public and their different, individual interests.

Against this background, this article aims to provide a holistic concept of quality of planning that can be operationalised in planning practice. Two questions are in the limelight: (1) how can quality of spatial planning be framed; and (2) how can quality of spatial planning be enhanced? As planning is context specific and most of the literature about plan/planning quality originates from the English-speaking world (United States, Canada, Australia, New Zealand, Great Britain) with a

few additional countries like The Netherlands, the author wants to add insights from Austrian spatial planning to the debate, which is based on a highly formalised planning system comparable to Germany or Switzerland. The article is structured as follows. Materials and methods are introduced (Section 2), the context of spatial planning in Austria is laid out with respect to planning quality (Section 3), the concept of planning quality is drafted (Section 4), and potential implementation strategies involving concerted governmental action, training and the further education of planners are discussed, as are the benefits and weaknesses of the proposed concept (Section 5). Finally, brief conclusions are drawn.

2 Materials and methods

This article is based on thematic content analysis (Boyatzis 1998) of a series of materials and results gathered using multiple methods in both finished and ongoing research projects the author has contributed to, conducted and/or led. The reports and publications gathered from these activities were used as sources and newly interpreted with respect to planning quality. One group of studies revolves around the implementation of strategic environmental assessment (SEA) in Austria and include research on how the relevant EU-Directive would change the planning system (Weber/Stöglehner 2001) and how strategic environmental assessment would be best implemented in Austria (Stöglehner 2004; Stöglehner/Wegerer 2004); consultation for the Province of Lower Austria concerning the amendment of the Spatial Planning Act (2005); and studies on strategic environmental assessment effectiveness after several years of practice, including proposals to increase its effectiveness (Stöglehner/Brown/Kørnøv 2009; Stöglehner 2010). These studies shed light on issues of planning quality like content, process and legal compliance.

The second group of studies is linked to the issue of impact appraisal and environmental assessment and comprises work on environmental footprint-based planning methods and their implementation in spatial planning, integrated spatial planning, energy planning and water management since 1997 (Stöglehner 2003; Stöglehner/Narodoslawsky 2008; Stöglehner/Narodoslawsky 2009; Narodoslawsky/Stöglehner 2010; Stöglehner/Edwards/Daniels et al. 2011). A third group of research projects is about integrated spatial and energy planning. Here, action research projects with local communities and provincial governments were carried out to define the field and the potential of spatial planning to support climate protection and the energy transition (Neugebauer/Kretschmer/Kollmann et al. 2015; Ramirez Camargo/Zink/Dorner et al. 2015; Stöglehner/Neugebauer/Erker et al. 2016; Erker/Stangl/Stöglehner 2017a; Erker/Stangl/Stöglehner 2017b). As a result of this work, the author became the scientific advisor of a governmental working group on the implementation of integrated spatial and energy planning in Austria (Stöglehner/Erker/Neugebauer 2014), and had the opportunity to scientifically guide the implementation of integrated spatial and energy planning in the Province of Styria (see Abart-Heriszt/Stöglehner 2018). This work mainly contributed to the discussion of the context of spatial planning in Section 3 and the concept of planning quality as presented in Section 4. A rough outline of the concept of planning quality was first presented to planning practitioners in a short paper (Stöglehner 2017) and discussed during Austria's annual spatial planners conference on April 20, 2017 with the around 120 participants.[1] The conference was recorded and the material was also used for conceptualising planning quality in Section 4.

Finally, initial material from two ongoing studies is included, especially in the discussion section, as these investigations represent experimental approaches to increase planning quality. The first is a study on planning quality as a framework for designing further education courses for spatial planners in Lower Austria. The project comprises, inter alia, the survey of 15 local spatial plans with respect to planning content and planning methodology; in-depth interviews with 15 owners of planning companies with regard to their thematic and methodological concerns, the cooperation between planners and approval authorities, public participation and their thoughts on further education; and an online survey for employees of planning consultancies and planners working in municipal and provincial administrations, including questions concerning further education. In the second project an implementation programme of integrated spatial and energy planning in Styria has been designed and carried out. Here the author's institute has provided a database for all 287 Styrian municipalities covering energy and greenhouse-gas emission balances and the definition of district heating zones as well as zones for sustainable mobility (supporting walking, biking and public transport). This frees the local spatial planners from dealing with data collection, allowing them to focus on strategy development. They receive

1 See https://www.arching.at/aktuelles/veranstaltungen/rueckblick/planerinnentag_2017.html (21.08.2018).

guidance and training, and the approval authority is involved in the implementation process. One of the test municipalities has already implemented the results in their revised spatial development strategy. The roll-out of the programme and the presentation of the guidance took place in March 2018 and has been complemented by a subsidy programme by the provincial government for project implementation. These two projects contribute ideas on the concept of planning quality and about operability to the discussion section.

3 The context: spatial planning in Austria

In the first part of this section, the spatial planning system in Austria is introduced; the second part presents challenges facing spatial planning that are relevant to planning quality. The first part is based on the provincial planning laws, the second part on the materials listed in Section 2 if no other sources are cited.

3.1 The spatial planning system in Austria

Although Austria is a small country of only 84,000 km^2 and around 8.5 million inhabitants, the governmental structure consists of a state government, nine federal state (provinces) governments, and 2,100 municipalities. Spatial planning in Austria is a federal state-driven activity, based on spatial planning laws that are similar between provinces but may differ considerably in detail. The hierarchical, top-down system normally consists of provincial development strategies (*Landesraumordnungsprogramm*), regional plans (*Regionales Raumordnungsprogramm*) and sectoral plans (*Raumordnungsprogramme für Sachbereiche*) both on federal state and regional level; and local development strategies (*örtliches Entwicklungskonzept*), land-use plans (*Flächenwidmungsplan*) and building schemes (*Bebauungsplan*) at the municipal level. According to the Austrian constitution, municipalities undertake their own local spatial planning within the legal framework, but they are controlled as local spatial plans have to be approved by the provincial government (see Voigt/Kanonier/Getzner 2015). Decision makers are elected politicians, supported either by freelance planners or planners employed in administrations, or both, depending on the size of the municipality.

According to the regulatory framework, spatial planning is directed by planning objectives which cover all issues of spatial development including environmental and open space protection, economic development, social and cultural issues, and infrastructure development. These planning objectives define the public interest in spatial development. Public and private interests are to be balanced, with public interests being given priority. In this way, the planning laws address the built and unbuilt environment mainly through the control and siting of building activities via the different levels of plans. Some of the planning objectives might differ in focus and may be conflicting. Such conflicts of objectives have to be resolved in a concrete planning decision, which means that in an actual spatial context one or several planning objectives are prioritised over others so that certain land uses are assigned: for instance, if environmental protection is ranked highest in certain areas open space is defined, or if economic development is prioritised in other areas industrial and commercial zones are designated.

All planning decisions have to arguably weight the planning goals. This weighting has to be grounded on baseline surveys, and has to be accompanied by the detailing of planning objectives, the formulation of planning measures, and an appraisal of the spatial impacts of a potential planning decision. The planning processes guarantee information and consultation rights for the public and allow stakeholders who might be impacted by a planning decision to protect their individual rights, including appeals against a plan.

3.2 Challenges in spatial planning

In the pursuit of growth-driven economic development it seems that environmental protection is outweighed in many planning decisions, as revealed here by five glimpses of unfavourable spatial development – with respect to environmental and social planning goals listed in the planning laws:

- Austria is affected by a high rate of loss of bio-productive land. Land consumption caused by the development of buildings and infrastructure is about 15-20 ha per day on state level compared to the Austrian sustainability target of 2.5 ha per day (Umweltbundesamt 2016: 141). This figure means that every three to four years an area equal to the built-up area of Vienna (as the biggest city, with almost 1.9 million inhabitants) is transformed into building land.

- Urbanisation and suburbanisation go hand in hand with (international) migration and population decline in peripheral and Alpine rural areas (Bender/Kanitscheider 2012; Gretter/Machold/Membretti et al. 2017), leading to huge costs for the expansion of social infrastructure in the urban centres and suburban areas on the one hand, and low infrastructure efficiency with reductions of social infrastructure in peripheral areas on the other hand.
- Huge shopping mall developments along the (car) transport infrastructure have a great impact; in fact Austria has the biggest amount of retail area (1.67 m^2) per capita in Europe (GfK 2017: 14). Therefore, it can be regularly observed that town and village centres decline, land demand for shopping increases, car transport increases, and landscape quality is negatively impacted.
- The population outside the urban centres is highly dependent on cars, as sprawl is not only common in suburban areas but also in rural areas. Despite considerable efforts leading to a decrease in energy demand and greenhouse gas emissions for heating (-37.2% from 1990 to 2016), agriculture (-14.1%), waste management (-28.1%) and industry (-3.6%), an astonishing increase in the energy demand and greenhouse gas emissions related to the transport sector (+66.7%) can be observed (Umweltbundesamt 2018), which can, at least to a certain extent, be linked to spatial developments.
- Infrastructure costs for municipalities are about ten times higher in the often favoured single-family-house developments than in apartment-building developments (Dallhammer 2014). The economic balance of infrastructure costs is thus often negative because of the spatial patterns chosen.

The reasons for this unfavourable development are manifold and can be connected to the larger context of spatial planning, to the planning system itself, but very often also to planning practice. These issues will be discussed in more detail. First, as often pointed out by planners, planning is embedded in a large network comprising the value base of society, different kinds of economic, agricultural, financial, social, and environmental policies, the availability of technologies and natural resources, spatially relevant individual decisions due to personal lifestyles, and the economic practices of companies, which might not conform with environmental sustainability and public interests as laid out in planning laws (see Stöglehner/Neugebauer/Erker et al. 2016).

Second, it can be observed that public interests as defined in planning goals may have the full support of decision makers and the public in general discussions. But in individual cases, where private and public interests conflict, the promotion of individual interests often exercises a great impact on decision making. Especially in the small-scaled government structure of Austria, the public and the elected decision makers live closely together, so rejecting unfavourable development proposals (unfavourable judged by general planning goals) is often delegated ‘up’ to the approval authority. Access to building land is highly dependent on the land owner. If the land is held back for speculation or other reasons, especially where land is already zoned for building (which is often in favourable areas), there are limited possibilities to enforce the visions and measures of spatial plans except through awareness raising and negotiation. New legal options can normally only be applied in newly zoned building areas. If new building land is zoned, then usually contracts are signed that shall guarantee timely plan implementation (*Vertragsraumordnung*). Where the building land is based on old zoning rights, this option is not available. If stronger legal possibilities to enforce certain land uses are not advocated – which would involve the further development of the planning system –, it is only possible to apply different levels of persuasion to enforce spatial plans, e.g. awareness raising, informing about the negative effects of not using building land in favourable areas, communication and negotiation, as well as financial incentives (subsidies and taxes). Therefore, the spatial planning system works well when certain undesired land uses should be prohibited but has weak points if a desired development should be implemented.

Third, these issues have implications for planning practice. Planners advise decision makers, carry out surveys, propose detailed goals and measures, appraise impacts, write reports and draw up the plans. In many cases, planning processes limit public participation to information and consultation procedures according to the planning laws, there are fewer examples that demonstrate more communicative modes of planning. Therefore, the main products of planning processes are the plans and reports, which are the subject of plan approvals and, in some cases, legal appeals. If the plans are accompanied by contracts with land owners about the timely use of building land, they are important contributions to plan implementation besides the infrastructure investments of the planning authorities. If these options are not available – because land use is not changed or contracts are not applicable because of old zoning rights in already

zoned building land – communication, persuasion and negotiation remain the only means for municipalities to implement spatial plans. Very often, these communicative implementation procedures are not seen as part of the 'official' spatial planners' tasks, and planners are very often not contracted to engage in such communicative action.

4 Conceptualising planning quality

With the background of the planning literature and the Austrian context in mind, the concept of planning quality introduced here addresses the issue of how quality of planning can be framed and what planners can do in this highly complex context. The normative concept is also based on the perception of planning as a societal learning process about options to shape the future (Innes/Booher 2000; Stöglehner 2010), which is especially relevant for strategic decisions that require the coordination of a large variety of actors and stakeholders (Faludi 2006). Therefore, what planners can do is to make plans that support sustainable spatial development and are convincing enough to be implemented, and design planning processes to support societal learning so that many stakeholders and the public recognise that implementing a plan is in their individual interests in order to promote their own quality of life. And finally, in a law-driven system like in Austria, planners must assure that a plan conforms to the legal requirements. Therefore, I argue that conceptualising planning quality needs to address four dimensions (see Stöglehner 2017): content, planning methodology, planning process and legal compliance.

4.1 Content

As laid out in the introductory section, the concept of quality takes the characteristics of a plan as well as the requirements of users into account. The societal requirement for planning is derived from the planning objectives in the planning laws, as laid out in Section 2. As sustainable development according to the Rio Declaration[2] and framed in the Sustainable Development Goals[3] is also agreed on the national level via the Austrian Sustainability Strategy (BMNT 2010), I argue that sustainable spatial development should be the benchmark for any planning quality appraisal. In Austria, in principle all aspects of sustainable spatial development are covered in the planning objectives, but in every decision they have to be weighted so as to promote sustainable spatial development. When looking at visions for regional and urban planning like the "European city of tomorrow" (European Commission 2011), new urbanism[4], eco-cities (Newman/Jennings 2008), decentralised concentration (Motzkus 2002), transit-oriented development (Dittmar/Ohland 2003) and the vision for integrated spatial and energy planning (Stöglehner/Neugebauer/Erker et al. 2016), there seems to be a consensus that sustainable spatial development can be based on a limited number of design principles: compactness, sustainable transport (walking, cycling, public transport), density, mixed land uses, diversity, passive solar design, and greening (Jabareen 2006). Even though other models of integrative spatial quality suggest a relational and transdisciplinary understanding (Khan/Moulaert/Schreurs et al. 2014), there seems to be a relatively clear picture of what sustainable development should mean for the physical side of spatial planning (Stöglehner/Neugebauer/Erker et al. 2016). The extent to which these basic design principles are fulfilled could serve as an evaluation standard for the content dimension of planning quality.

Therefore, an evaluation of planning content should focus on whether the principles of sustainable spatial development and their consequences were addressed in the planning process, whether sustainable alternatives were developed and discussed, and whether they were a baseline for the assessment of planning alternatives. This reveals whether planners and decision makers strived for the most sustainable solution, even though an unfavourable planning context or shortcomings in the planning system (see Section 3.2) meant that the most sustainable alternative was not possible so the second-best solution was adopted and the reasons preventing implementation of the best solution were made visible. Finally, showing the gap between an actual spatial development, an adopted plan and a sustainable spatial development might induce learning processes within communities, including decision-making boards

2 See https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf (22.08.2018).

3 See http://www.un.org/sustainabledevelopment/sustainable-development-goals/ (22.08.2018).

4 See https://www.cnu.org/sites/default/files/charter_english.pdf (22.08.2018).

and planners, leading to planning alternatives being adopted that are more sustainable than the originally proposed ones. Taking this argument into account, a plan cannot be separated from the physical outcome but if the physical outcome is sub-optimal, this might reveal the lowest common denominator in a highly conflictive situation negotiated in a democratic process of decision making. The dimension of content is thus interlinked with methodology and process.

4.2 Planning methodology

The issue of planning methodology addresses the question of whether appropriate planning methods were applied in a scientifically correct way. This means that the methods (e.g. data surveys, overlays, cost-benefit analyses, multi-criteria analyses or just verbally conducted arguments about balancing objectives) should be objective, reliable, valid, effective, transparent, and easy to communicate (Jacoby 2000). It is therefore important that in the planning process goals, measures and actions are derived in a reproducible way. The main feature of such processes is a clear separation of the fact base and the value base, so that all the parties interested, affected and involved can learn and negotiate about the facts and values, about goals, measures and their effects (Scholles 2008; Stöglehner 2010).

In order to achieve these outcomes of a planning process, the methodology should comprise certain features that can be used as a baseline for the evaluation of planning quality. When perceiving planning as a learning process of communities, two kinds of learning can be induced in learning loops between visions (expressing values), actions (measures) and their anticipated consequences (Argyris 1993; Innes/Booher 2000; Stöglehner 2010). In single-loop learning, if undesired consequences are expected then actions and measures can be adapted without changing the underlying values. This learning about the factual aspects of planning does not challenge the underlying values and visions. If the planning alternatives are optimised and still do not achieve acceptable consequences, the underlying values and visions of the planning process have to be challenged. This double-loop learning, which includes the value base of planning processes, more or less means going back to the start and re-examining the original aims. While double-loop learning addresses system alternatives (alternatives of goals and visions, as well as questions of demand, single-loop learning is directed towards siting alternatives (locations for projects necessary to implement system alternatives) and technical alternatives (implementation of a certain kind of project on a given site).[5]

In practice, running through single-loop learning and then moving on to double-loop learning involves a lot of pre-decisions that have already been made, people creating ownership for certain projects, and money and resources being spent on planning processes. It is thus often impossible to return to the start in reality. Furthermore, most state-of-the-art planning methods are only suitable for assessing site and technical alternatives. In order to support double-loop learning, Stöglehner (2010) proposed the model of 'strategic planning and assessment methods'. These methods allow for double-loop learning before the definition of detailed actions and measures, as first general assessments of consequences can already be carried out when drafting goals and visions, allowing the scope of consequences to already be considered when the direction of the planning process is decided. The concept was first implemented in the context of integrated spatial and energy planning – in order to make the effects of spatial development on energy supply and greenhouse gas emissions visible and to plan more climate-friendly spatial structures –, and expanded to other issues like the estimation of infrastructure costs based on proposed planning goals and measures. The main component of these methods is the possibility to learn about facts and values, and to offer an opportunity to model scenarios and their impacts so that more informed decision making both on the factual and the value level is possible (Stöglehner 2014). One example is the ELAS-calculator, a web-based calculator that considers the energy demand, ecological footprint, greenhouse gas potential and regional-economic effects of residential projects.[6]

Summing up, the methodological side of planning quality can be evaluated by projects' scientific soundness concerning inter-subjectivity, validity, reliability, transparency, and separation of the fact base and value base on the one hand, and by their capacity to support single- and double-loop learning on the other hand. Therefore, the methodological side of planning cannot be separated from the process. Finally, the planning methods should guarantee that all legal provisions are followed, including environmental issues like noise

5 For the definition of alternatives see e.g. Therivel (2010) and Stöglehner (2010).

6 www.elas-calculator.eu (23.08.2018).

protection[7], the FFH-Directive[8], the SEVESO-regime[9], the SEA-provisions[10], and regulations and standards for infrastructure design. Given the large amount of regulations that has to be considered in spatial planning, this is a serious methodological challenge.

4.3 Planning process

The quality of a planning process can be framed in three dimensions. First, considering the learning dimension, every planning process should offer forums for learning and deliberation about the public and private interests of different stakeholder groups and decision makers throughout the whole process at every step where directions are given for the further course of the planning process (Innes/Booher 2000). This should guarantee the strategic character of planning, while planning methods as described above ensure that the necessary information to feed the processes is readily available in an understandable way. Visions and possible actions have to be linked to perceived consequences so that discussion and deliberation of both the value level and the factual level can be supported and local knowledge can be tapped (Stöglehner 2014). Therefore, planning quality with respect to process can be appraised by the degree to which the process design allowed for learning. If learning is promoted, the planning process may create ownership of planning outcomes so that implementation is more likely (Stöglehner/Brown/Kørnøv 2009). This is especially important in situations where a large number and diversity of decision makers, actors and stakeholders have to be coordinated (Faludi 2006), and where plan implementation cannot be fully legally enforced (because of the shortcomings mentioned in Section 3.2) but has to be based on communication and cooperation.

Second, process design has to ensure that all relevant stakeholders and actors as well as the public have the opportunity to get involved at stages of the planning process that allow them to have a real chance to influence the planning outcome. Power relations have to be made visible (Richardson 2005) and advocacy (Harris 2015) has to be exercised to ensure the representation of interests not able to properly participate in a discussion process, e.g. underprivileged groups, future generations or the environment. This calls for the implementation of an early planning step to identify all actors and stakeholders or their advocates (Reed/Graves/Dandy et al. 2009), invite the public and offer different formats of discussion and involvement so that all interested, concerned and affected groups can bring in their knowledge, values and interests, and are thus able to actively engage in community learning about options to draft, agree on and achieve a desired future. Such processes also support democratic legitimation: if consensus or at least an understanding of certain measures can be reached with a wide variety of stakeholders and the public, decision makers are more confident in decision making and less legal objections to an adopted plan can be expected (see Neugebauer 2017).

Third, planning is also an administrative process requiring an effective and efficient workflow (Jacoby 2000), as often different planners, planning disciplines, decision makers and authorities as well as the public are involved. Expert knowledge should be readily available and integrated in the development of planning options and discussions with stakeholders and the public (Reed 2008). This also calls for an early identification of planning contents that need a special knowledge base and the involvement of further disciplines related to the planning issues at hand. Finally, this effectiveness also demands that the division of tasks is clearly defined and communicated (see Neugebauer 2017), e.g. the ‘power’ of participating parties: whether the aim is co-decision (with the consequence that there might be no decision as long as consensus cannot be reached) or that all parties should be heard and then the decision makers decide (corresponding to the idea of representative democracy).

4.4 Legal compliance

In any law-driven planning system, legal compliance is a must. Jurisdiction and high court rulings show that legal compliance is based on several principles. First, a sound baseline survey and spatial analysis has to be carried out. Second, the weighting of planning goals has to be traceable and justified by the baseline survey and the planning methodology. Third, all relevant stakeholders have to be informed and consulted, all process rules (e.g. appropriate periods of time for information and consultation, provision of plans and reports) have to be followed. Fourth, legal compliance means that all legal frameworks are adhered to; this is again an issue of planning methodology and has to be reflected in the planning content.

7 see EU-Directive 2002/49/EG
8 see EU-Directive 92/43/EWG
9 see EU-Directive 2012/18/EU
10 see EU-Directive 2001/42/EG

Legal compliance can be evaluated by the amount of successful appeals against a plan or its implementation. A successful plan in terms of the legal dimension will not be rejected by a supervising authority or by the court. This issue should not be confused with the number of issued appeals, which would rather indicate whether a planning process had successfully created ownership – for which social learning is a prerequisite –, preventing 'angry citizens' and, therefore, reducing confrontations involving lawsuits and appeals.

4.5 Interlinkages of the dimensions

As already mentioned, the four dimensions of planning quality are interlinked, as is depicted in Figure 1: planning content is derived from the different methods used to explore the planning problem, weigh and concretise different planning goals, appraise planning impacts and take informed decisions, as well as from processes that allow for learning and stakeholder integration so that an agreed value base can be negotiated and conflicting interests resolved. Ideally, such processes create ownership by decision makers, planners and the affected stakeholders, so that the planning content will be implemented.

Finally, if planning methodologies and planning processes are designed to fulfil all legal requirements, the fourth dimension of legal compliance is guaranteed. In this way, legal certainty is created not only for decision makers and planners, but also for stakeholders and actors during plan implementation.

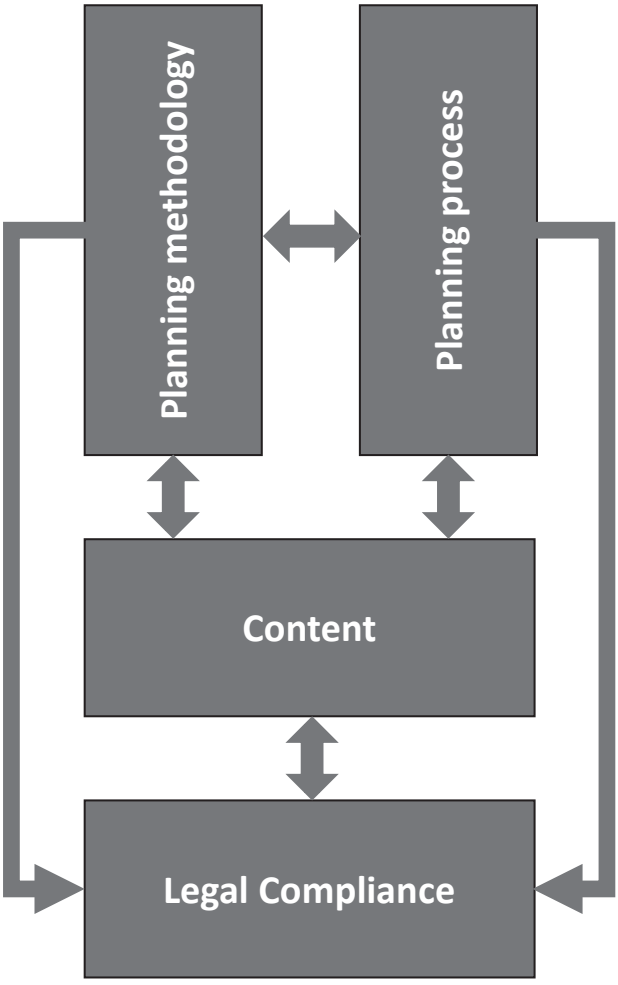

Figure 1: Interlinkages between the dimensions of planning quality.

5 Discussion

Summing up, quality of planning has to take the content of plans and the outcomes of plan implementation, planning methodologies, process design and legal compliance into account. In the light of Section 3.2, it is supposed that there is an urgent need to raise the level of planning quality, at least in Austria but under the assumption that situations may be different but comparable in other countries as well. Considering this complexity, implementation strategies for planning quality have to be diverse and should address different actor groups, especially planners in different institutional settings, elected decision makers and the affected, interested and concerned public including civil society and the economy. In order to reach the last two target groups, planners can act as multipliers in the respective local and regional planning processes they consult on and organise. In the discussion section the aim of increasing the quality of planning focuses on the following issues, based on the material presented above: the need for concerted governmental action for implementing planning quality, the role of planners as teachers, further education for planners, and strengths and weaknesses of the approach.

5.1 Concerted governmental action

Based on the material presented, I propose that improving planning quality needs concerted governmental action including the provision of planning methods and databases, the amendment of legal provisions, and the amendment of administrative procedures.

First, in everyday practice methodological innovation is normally incremental, leading to small amendments of planning practice. Profound methodological innovation seems to overstrain small enterprises in their day-to-day business, but their experience is necessary to ground methodological developments in the everyday needs of planners. Only in this way can an ownership of methods, approaches and planning results develop, a precondition for their wide application and the consequent promotion of planning quality. Therefore, I argue that action research (see e.g. Greenwood/Levin 2006; Reason/Bradbury 2009) – which brings research institutions and practitioners together – is a useful approach to advance planning methodology. Part of the planning methodology issue is the provision of databases in order to guarantee that planners do not have to extensively engage in data collection but can focus on strategic issues of the planning process, including discussion of planning alternatives (goals and measures) in the light of anticipated consequences and support of societal learning about the desired future. The Styrian case of integrated spatial and energy planning shows that new digital methods can support the creation of new databases for whole provinces. This spares planners the necessity of generating data, which requires specialised knowledge relatively distant from 'normal' planning practice. Therefore, the provision of this data by the provincial government (Abart-Heristz/Stöglehner 2018) frees planners from the burden of gathering this information and allows them to work with data and zoning results that they can directly implement in their everyday practice. The Styrian case also shows the need for a lead to be taken by the provincial administration and the necessity for cooperation between the different administrative sections of the provincial government in order to implement a programme like integrated spatial and energy planning, which is cross-sectoral by definition.

Second, the amendment of Spatial Planning Acts shall ensure that planners have to take the principles of planning quality into account, giving direction with regard to content, methods and process. Legal compliance will be a by-product of the sound application of the first three criteria, as explained above. The amendments should include more precise weighting criteria for sustainable spatial development. At the moment, the regulatory framework allows for the implementation of sustainable spatial development – or does not hinder decision makers and planners who want to implement it – but does not explicitly demand it. As explained in Section 3.2, plan implementation often depends on issues beyond the control of the Spatial Planning Acts. In order to guarantee sustainable spatial development, a more consistent regulatory framework is needed, e.g. with a better coordination of planning goals, taxes and subsidies. Such financial incentives can support both the implementation of quality in the act of plan making and the planning outcomes. Being able to focus financial incentives on measures that support sustainable spatial developments would also give (local) decision makers and the public more incentives to engage in spatial planning.

Third, raising planning quality will also depend on the definition and enforcement of the principles of high quality in planning by amending administrative procedures. Especially in local spatial planning, the process of approving municipal spatial plans by the provincial government would be suitable to call for more quality criteria. In order to make planning quality operational and given the regulatory differences, each of the nine provinces would have to define a final set of criteria, taking the four dimensions of planning quality into account. The definition of criteria will need more consideration and discussion, involving different stakeholder groups and looking at planning quality from different angles and stakeholder perspectives.

5.2 Planners as teachers

The role of planners is discussed in many planning theories, bringing different notions to the field: the planner as rational scientist (see e.g. Banfield 1959; Kaiser 1965), as experimenter (Braybrooke/Lindblom 1972), as advocate (see e.g. Davidoff 1965; Harris 2015), as change agent (see e.g. Lawrence 2000), as communicator, moderator and mediator (see e.g. Selle 1995; Forester 1999, Healey 1992, Müller 2004), as designer and educator (Fischler 2012).

The proposed concept of planning quality adds another notion that has hardly been discussed so far: the planner as teacher. If planning should be designed as an informal social learning process where all participants should jointly learn about the desired future, guidance is needed. I argue that this guidance has to come from planners, through regular impulses on different issues relevant to sustainable spatial development. This role is different from the role as moderator or mediator, as a teacher has an interest not only in deliberating on opposing positions but also in promoting certain spatial developments as laid out in the overall planning goals in the Spatial Planning Acts (or in didactic language: the

implementation of planning measures that contribute to sustainable spatial development should be a learning outcome).

Planners have a public mandate to advocate public interests as defined in the Spatial Planning Acts, and they advise their clients in a way that allows the municipal decisions to pass plan approval processes. In this way, the picture of the planner as teacher is applicable: based on societal strategies, there is a mission towards sustainable spatial development (a learning outcome), there are different methods to reach this aim, and there are sanctions if the learning outcome is not reached – a plan not approved. The only difference to teachers is that the planners themselves are not in a position to approve the decision of the respective community. If this role as teachers is to be implemented, planners need didactical skills in formal and informal settings of group learning that are not yet part of planners' training, so this role definition has implications for planning education.

5.3 Further education for planners

Accompanying concerted governmental action, further education for planners is crucial. In some provinces, there are almost no further education offers for planners available – except for some courses on legal issues and GIS-based analysis tools. Furthermore, the universities that carry out planning education rarely engage in further education. Therefore, practitioners need to rely on self-organised study of scientific reports and publications to keep track of scientific knowledge. Organised learning environments are rarely available, depending on the provinces. Most of the planners, e.g. in Lower Austria, judge this situation as unfavourable and express interest in further education offers.

Organising further education for planners poses several challenges for institutions offering courses, as several course repetitions are impossible because of the different legal situations in the provinces and the small size of the planning communities. Therefore, I propose implementing the concept of customised education programmes (Holopainen/Kalmárné/Stöglehner 2004; Peer/Stöglehner 2013) whereby, following action research principles, the demand for further education is elaborated together with the target group. A vision is drafted (here: a raised level of planning quality), the skills of the community of practice to reach this vision are assessed and together the learning demand is defined. Then learning activities are offered and as soon as the learning demand is satisfied, the course can either be transferred to other contexts or archived for later updates. The further education strategy for planners in Lower Austria will work this way.

The research around this further education approach also revealed that planners wish to discuss new topics together with representatives of approval authorities, based on scientific impulses in events that last not more than one day but that are held regularly. In this way, networking and exchange between planners shall also be supported. Further education courses are intended to serve not only as a means of knowledge transfer, but also as platforms to reflect on this knowledge in the context of planning practice and elaborate accepted procedures on how to deal with different topics on a scientific basis.

5.4 Strengths and weaknesses of the approach

The approach introduced here captures quality in planning as a holistic concept, ranging from the plan via the planning process to the design of the planning system, taking the positions of a wide range of actors and stakeholders in planning processes into consideration. The concept with its four dimensions is generic in that it can be adapted to the various formal and informal processes that lead to planning decisions and plan implementation in different planning systems and planning cultures. For application in a certain context, the criteria for assessing the four dimensions of planning quality have to be formulated on a more detailed level. Some readers might, therefore, criticise the concept as being too vague as there has been no presentation of final criteria or indicator lists except the four dimensions with their normative directions. This can be defended by considering plans and planning systems, legal and societal frameworks, the uncertainty that is inherent in planning and the participatory dimension of planning which is context specific and varies with the level of the individual planning process. Analogously to sustainability, planning quality might be best framed by the definition of quality principles that should be converged to as much as possible.

Furthermore, the concept integrates rational, communicative and participatory theories of planning (as e.g. postulated by Stöglehner 2010 and Berke/Stevens 2016) by framing sustainable spatial planning as societal learning processes in need of a teacher – an additional role for planners in planning processes. The concept is suitable to reflect on planners' roles and action in planning processes, taking their scope of action into

account, and to identify weaknesses and malfunctions intrinsic to planning systems which lead to second-best planning outcomes. Therefore, action to raise planning quality can be designed by improving databases, methodologies, planners' skills via training and further education, administrative procedures and stakeholder integration with a view to creating more consistent legal frameworks in order to achieve more sustainable spatial development.

The concept may also be criticised for the underlying assumption that planning quality is based on the public interest and shall unfold power to steer and judge the sustainability of planning process and outcomes, and that the power to define planning quality rests within the planning community. This line of argument can also be derived from the suggestions to raise planning quality. If the discussion about planning quality involves multiple stakeholders and actors, multifaceted aspects and opinions on planning quality can be integrated – but still with the clear concept that planning quality has to support the public interest, which I argue is also necessary to legitimate planning in a highly formal planning system like the Austrian one that is determined by the weighting of planning goals. Finally, the concept of planning quality is incomplete. For instance, the issue of planning as an art (Kim 2013) has not yet been properly addressed, which means that the creative part of design has thus far been underrepresented, although this might be integrated in the methodological pillar of planning quality.

6 Conclusions

The definition of the requirements of 'good' spatial planning needs continuous reflection and conscious commitment in the light of new societal challenges like climate change, demographic change, change of lifestyles and economic practices, global urbanisation, biodiversity loss, and digitalisation on the one hand; and developments in planning tasks, methodology and theory, as well as potentially changing societal mandates for planners on the other hand. This ongoing debate is necessary to (1) illustrate the potentials and limitations of spatial planning as an instrument to discuss future development, to define the role of planners in achieving sustainable spatial development, and to calibrate expectations; (2) communicate planning achievements, make the benefits of high-quality planning visible, and legitimate the actions of planners; (3) integrate the interests and positions of a wide variety of actors and stakeholders; (4) raise awareness of issues related to sustainable spatial development among decision makers and in society; (5) improve legal frameworks, financial incentive systems, and planning methodology; (6) constantly reflect on the knowledge demands of planners in order to continually improve training and further education.

In order to invite academics and practitioners in the field of spatial planning to reflect about planning quality, a concept of four dimensions – content, planning methodology, planning process and legal compliance – is introduced. Furthermore, actions to further planning quality are suggested, which I would see in the combination of planning databases and methodological development with the further education of planners, and in acknowledging the role of planners as teachers. Especially the last point operationalises the issue that planning is a "value-full activity" (Lawrence 2000: 620), and that planners bring in their own professional values and public interests as defined in the Planning Acts, and exercise advocacy to the extent defined in the legal frameworks. The concept of planning quality also allows planners to reflect on their own roles and the legitimation of their actions in planning processes. I also would recommend offering forums that provide opportunities for joint reflection and the conscious development of a shared narrative of good planning within the planning community.

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