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On the influence of scenario-based landscape planning – a comparison of two alternative futures projects

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Abstract: Many publications report on processes and products of scenario-based landscape planning (SLP) but often place attention on its effectiveness to change local governance. This paper aims at enhancing understanding of the influence of SLP on decision making. First, qualitative case study methods are employed to assess the decision processes following two completed SLP projects. Second, potential reasons for the level of influence achieved in the projects are discussed in the light of a recently developed conceptual framework on the influence of scenario planning. The case studies are SLP projects in Pennsylvania and Arizona, USA. Both projects followed the Steinitz Framework for Alternative Futures Studies, but differed in context conditions and ways of implementation. The case study analyses resulted in the surprising finding that the graduate student planning process employed in the Pennsylvania case seemed to stronger influence local decisions than the multi-year research effort in the Arizona case. The analyses reconfirm prior propositions on the importance of context, but also strongly emphasizes that credibility alone is insufficient for yielding influence. Perceived levels of salience and legitimacy seemed crucial for local actors to consider planning results in decisions and creativity appeared to be essential for attaining public interest.

Key words: *Landscape planning, influence, scenarios, alternative futures*

Introduction and Methods

Landscape planning increasingly employs scenario-based approaches to explore alternative future developments and their respective consequences (e.g. Bohnet and Smith, 2007, Walz et al., 2007, Hulse et al., 2004, Steinitz et al., 2003, Steinitz et al., 2005a, Steinitz et al., 2005b, Wollenberg et al., 2000). The scenarios are either prospective (looking forward) or anticipatory (backcasting), and consist of assumptions of changes in driving forces from now to a specific point in the future (scenario pathways) as well as of illustrations of respective land use and land cover patterns (alternative futures). The planning process can rely on qualitative approaches (including stories, images, and hand-drawn maps), spatial simulation and quantitative modeling (of land use changes and respective impacts), or combinations of both (Albert, 2009). Despite the growing practical experiences, scholarship, and publications on scenario-based landscape planning (SLP), little light has so far been shed on its effectiveness to change local governance.

This paper aims at enhancing understanding of the influence of SLP on decision making. The research design consists of two approaches: First, qualitative case study analysis (Yin, 2003) is employed to as-

sess the decision processes preceding and following two completed SLP projects. This includes comprehensive reviews of relevant documents and semi-structured interviews with key stakeholders concerning “perceived” planning effectiveness. Insights from both case study tactics are summarized and brought together following the premise of triangulation. Second, potential reasons for the level of influence achieved in the projects are discussed in the light of a recently developed conceptual model on the influence of scenario planning. The model builds on prior works by Clark et al. (2006) and Alcamo et al. (2006) in proposing that scenario planning “tends to be influential in policy to the degree that it is perceived as simultaneously credible, salient, legitimate, and creative by the scenario users” (Albert, accepted).

The chosen case studies are two landscape planning projects that employed the Framework Method for Alternative Futures Studies (Steinitz, 1990, Steinitz, 1993), one of the most prominent approaches to SLP with multiple applications around the world. The first project addressed Monroe County, Pennsylvania, and the second the Upper San Pedro River Basin in Arizona, USA, and Sonora, Mexico. The projects were conducted in 1994 and 2000–2002, respectively. The processes employed and products achieved are described in detail in Steinitz et al. (1994, 2003) and Steinitz and McDowell (2001).

Results

Case Study One – Monroe County, Pennsylvania

Monroe County lies in Northeastern Pennsylvania within the Pocono Mountains. It is an area of exceptionally high biodiversity and scenic value. Since the early 1970s, the attraction of the region to people, both as tourists and permanent residents, led to increasing development pressures on the county’s municipalities. Concurrent with ongoing population growth, open space became less abundant, environmental impacts increased, the rich biodiversity became endangered and the quality of life in the region began to decrease.

Regional planning that could counter these developments is difficult to implement, since the Pennsylvania Commonwealth legislation assigns the authority to plan and zone to the municipalities. Along these lines, county-wide planning efforts that incorporated a broader and more coherent vision for municipal land use development have been traditionally regarded as unwanted interference with local authority. Zoning and subdivision ordinance planning in Monroe County from its outset neither considered meta-municipal/regional aspects nor any constraints from working landscape functions and provision of environmental services.

Furthermore, once County planning agencies in Pennsylvania make a proposal for comprehensive plans, they have only limited influence on its implementation. Land use policy proposals designed by county planners “should be incorporated in the municipal planning efforts,” but it is also prohibited to challenge any municipal planning decisions due to inconsistency with county objectives (Pennsylvania Governor’s Center for Local Government Services, 2003),.

In order to address increasing pressures from rural sprawl, the county started to think more regionally in the late 1970s (cf. Figure 1). However, all attempts to alter the development patterns and to initiate County-wide planning efforts had failed to inspire change and implementation (Steinitz and McDowell, 2001, Monroe County Planning Commission, 1999, Woodling et al., pers. comm.), probably due to a lack of engagement of municipalities in the planning process and the absence of incentives for cooperation and implementation.

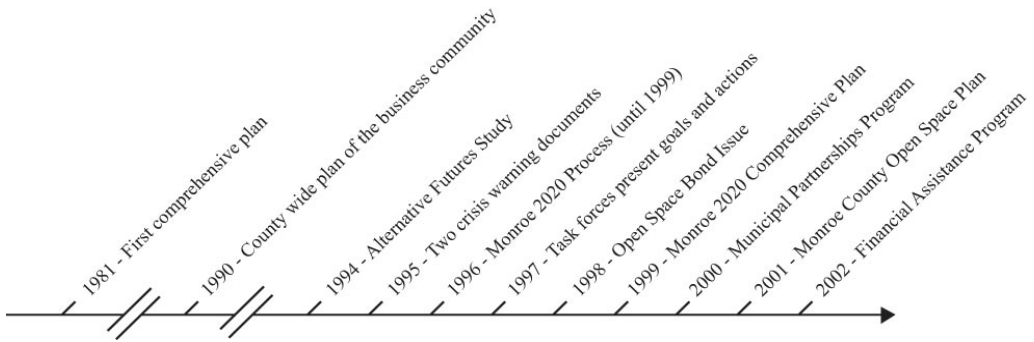


Fig. 1. Timeline of developments in Monroe County, Pennsylvania (C. Albert)

In fall semester of 1994, Professor Carl Steinitz and a team of students conducted an analysis of Alternative Futures for Monroe County as an educational studio project (Steinitz et al., 1994). The research group employed Geographic Information System (GIS) technology to combine natural resource, demographic, land-use, infrastructure, and fiscal data into an integrated assessment. Six Alternative Futures were prepared by the studio team. Two of them extrapolated current development trends and land use policies whereas four alternatives illustrated possible design interventions and their respective impact on the environment. The planning process and resulting conclusions are thoroughly described in the studio report (ebd.).

After the AF-Study had contributed to placing the environmentally and fiscally negative impacts of poorly planned development on the region's political agenda, two crisis warning documents, issued by County officials in 1995, further spurred the public debate. Both crisis documents called for a new planning vision to address the interconnected fiscal, environmental, and infrastructural problems of the County (Burchell-Listokin, n.d., cited in Monroe County Planning Commission, 1999).

In spring of 1996, Monroe County Commissioners and the Planning Commission initiated the Monroe 2020 Process, a collaborative effort to design a new comprehensive plan for future economic development, environmental conservation, and quality of life in the county. The involvement of over one hundred citizens that met on a regular, sometimes monthly, basis over a time period of almost three years made the process unprecedented in the scope of public participation and consensus building (Monroe County Planning Commission, 1999). By including local citizens in the process, it was hoped that they could act as advocates for change and communicators between the county-wide planning committee and local implementers.

County Commissioners, school districts and most municipalities adopted the goals and actions for implementation that had been developed in 1997 (Monroe County Planning Commission, 1999). May 1998 saw the passing of a public referendum on a \$25 million Open Space Bond Issue to facilitate the acquisition of development rights and fee simple purchases.

The final document of the participatory process – the Monroe 2020 Comprehensive Plan – was officially adopted by the County Commissioners in June 1999 (Monroe County Planning Commission, 1999). To further fostering collaboration and aligning County and municipal planning efforts, the County Commissioners adopted the Municipal Partnerships Program in 2000 (Monroe County Planning Commission, 2000). After the creation of the Comprehensive Plan and the passage of the Open Space Bond Issue, a county Open Space Advisory Board was appointed which took responsibility in cooperation with the

county planning commission for the implementation of an open space program. In 2001, the Monroe County Open Space Plan was adopted (Bloss Associates, 2001). In 2002, the Financial Assistance Program was introduced to assist the municipalities to develop and adopt natural resource protection ordinances (Monroe County Planning Commission, 2005).

Recently, a grassroots movement with strong public support developed a proposal to create a National Wildlife Refuge in Cherry Valley, the south-eastern part of the county that is still predominately undeveloped. This illustrates the appraisal of open space and the willingness of local citizens to collaborate on land conservation with the Federal Government despite the persisting provisos created by the plan to dam the Delaware in the 1970s (Cook, e-mail).

The greatest challenge today is that implementation of more sustainable land use policies on the municipal level often still needs to be achieved: In local decision making, the interests of politically strong stakeholders often receive preference over common public interests. Municipal officials who intend to enact ordinances according to Monroe 2020 recommendations very often face strong opposition from developers.

Another current challenge is the difficult process of sustaining the collaboration between county officials and planners, municipalities, and concerned citizens. When the planning process concluded, public involvement decreased and is now even more difficult to sustain. Within a community that is increasingly disconnected from the region and usually commutes to work, this remains a serious task (Woodling et al., pers. comm.).

However, an opportunity for advancement exists in building up on the once intense collaboration between the County's and Municipalities' officials. If it would be achieved to initiate a "successful example", maybe by adopting a green subdivision design strategy in one of the municipalities, the momentum of collaborative action could possibly be re-established and implementation continued.

Case study two – the Upper San Pedro River Basin, Arizona

The Upper San Pedro River Basin (USPB) encompasses an area of 10,660 sq km (nearly 4100 sq mi) and covers parts of the states of Sonora, Mexico, and Arizona, USA. As one of the Southwest's very few perennial rivers still in almost natural condition, the San Pedro serves as a major migration route for up to four million birds each year (Luster, 2002). The region hosts one of the highest levels of biodiversity in North America, containing valuable habitat for a wide range of species (Browning-Aiken et al., 2004). Since it is also very attractive to development (McSherry et al., 2006, Coes, 1999), the area faces great challenges due to its vulnerability to habitat loss and habitat change through lowering of the groundwater table (Steinitz et al., 2003).

The conflict among water extraction pitted a diverse group of stakeholders interested in preserving the perennial flow of the River against prevailing economic and demographic forces. In the US part of the watershed, anti-growth interest groups have frequently attacked Cochise County, the city of Sierra Vista and the US Army Fort Huachuca for supporting development and extraction of groundwater in the region. On the other side of the US debate, local citizens saw their water and development rights constricted through the proposed zoning regulations and initiated a strong opposition towards these initiatives. In Arizona, landowners may pump as much groundwater as needed, while the state only regulates surface water rights (see Lacher 1994).

Planning efforts in form of hydrological assessments had begun in the region in the first half of the 1970s when the Upper San Pedro Technical Review conducted studies on water rights issues of American Indian tribes (Kent, pers. comm., fig. 2). Over the next three decades, a number of organizations were engaged in studying the region. Although the amount of data and knowledge was accumulating, a comprehensive and coordinated planning effort had not yet materialized.

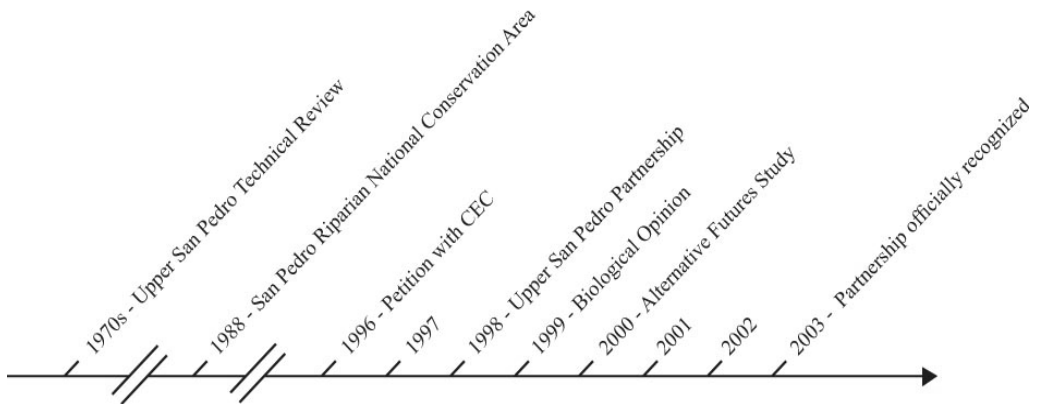


Fig. 2. Timeline of development in the Upper San Pedro River Basin, Arizona (C. Albert)

In 1988, the US Congress established the San Pedro Riparian National Conservation Area (SPRNA) in the Arizona part of the basin, preserving the riparian habitat, migration and breeding values (Bredehoeft et al., 1999). This federal intervention provoked intense conflicts among local farmers and ranchers who perceived this as an “unlawful interference.” As a result, strong local opposition against any top-down planning was further intensified.

In 1996, an environmental organization, the Center for Biological Diversity put forward a petition with the Commission for Environmental Cooperation (CEC). The petition blamed the US Environmental Protection Agency for having failed to enforce the National Environmental Policy Act (NEPA) since it did not require Fort Huachuca to file an Environmental Impact Statement concerning its ongoing operations (Varady et al., 2000). Local and state politicians strongly publicly opposed the study, questioning the legitimacy of a group of international experts who were assigned to give recommendations for decision making in the area (Varady et al., 2000).

In 1998, agencies and public interest groups joined to create the Upper San Pedro Partnership (USPP). The Partnership is a consortium of 21 organizations who collectively intend to ensure an adequate supply of water to meet the needs of both the residents of the area and the San Pedro River. USPP includes members with expertise in scientific fields and engineering, locally elected decision makers and representatives of land owners and managers that can provide the capacity to actively implement water conservation management measures (Upper San Pedro Partnership, 2005).

The purpose of the Partnership is “to coordinate and cooperate in the identification, prioritization and implementation of comprehensive policies and projects to assist in meeting water needs in the Sierra Vista Sub-watershed of the Upper San Pedro River Basin” (Upper San Pedro Partnership, 2004). The issue of highest priority for USPP was to develop a Working Water Conservation Plan with the goal of ensuring that “an adequate long-term groundwater supply is available to meet the reasonable needs of

both the area's residents and property owners (current and future), and the San Pedro Riparian National Conservation Area" (Upper San Pedro Partnership, 2004).

An instance that significantly intensified the public debate was the US Fish and Wildlife Service's (USFWS) issuing of a Biological Opinion in October 1999 (most recent update in 2002). In the statement, the USFWS acknowledged the potential impacts of continued groundwater extraction (part of it used by the Fort) on the San Pedro River Ecosystem and on the habitat of Endangered Species.

The AF-Study for the USPB began in 2000 as a two year long research project. Its objective was to employ a GIS-based simulation strategy by bringing together data on environmental, physical, economic and demographic processes and to project the consequences of a large number of land-use planning and management decisions. By conceptualizing the study as research instead of consultancy, the team of investigators, which included a broad of experts, intended to distinguish objective science advice from policy recommendations (Steinitz et al., 2003). Ten scenarios and their resulting Alternative Futures were created; they incorporated a number of policy choices and their respective influences on future land-uses and impacts on the ecology in the basin. Details on the scenario planning results can be found in Steinitz et al. (2003).

The study concluded that even the scenario of restricted population growth and reduced water use would not stop continued loss of groundwater storage and increasing drought of the San Pedro River System. The policy options that were expected to have the greatest positive impact on the region's hydrology were (1) removing irrigated agricultural in Arizona and (2) implementing policies of development control in Arizona. Compared to the present hydrological impacts of activities in agriculture and residential development on the aquifer, a growing population in the Mexican state of Sonora and activities at Fort Huachuca were considered to have only relatively little effects (Steinitz et al., 2003).

After the study was presented in 2003, its success in changing the political agenda and decision making processes in the region was only limited. The local population and politicians in general opposed the study's findings and, as it seems today, basically ignored it in their subsequent actions and thinking. Of all recent local planning documents and statements reviewed for this paper, none cite the AF-Study. An exception seems to be Fort Huachuca, which uses the study to give credibility to its claim of being not only an economically viable player in the region, but also a regionally important environmental steward.

An issue that has influenced the debate since at least the 1990s is that Fort Huachuca has been blamed for violating the Endangered Species Act because its activities would contribute to the lowering of the aquifer and thereby threatening listed species and their habitat. In 2003, US Congress passed legislation on local cooperative water use management (US Congress, 2003). The act mainly stipulated the responsibilities of Fort Huachuca, defined objectives and a schedule for achieving a "sustainable yield" of groundwater use from the Sierra Vista Sub-Watershed, and formally recognized the Partnership as the regional cooperative organization (US Congress, 2003, United States Department of the Interior, 2005, Upper San Pedro Partnership, 2005).

In consequence, the Partnership is now required to consistently lower the quantity of the overdraft from the aquifer from 2005 until "sustainable yield" is achieved by the end of 2011. The threat that failing the Section 321 ruling in 2011 could lead to a closing of Fort Huachuca and a large annual loss in financial contributions to the region which seems to be an incentive for stakeholders to start caring seriously about the issue (Kent, pers. comm.).

The greatest current challenge seems to be the little transformation of stated objectives into actions. Many scientists and decision makers within the USPP seem to "have become comfortable" with debating the issue without much progress on the ground (Robie et al., pers comm.).

Another challenge is that the urgency of the problem is not very tangible. Available water resources in the aquifer seem to be sufficient to supply the human uses for at least two more decades. However, the San Pedro River Ecosystem will experience serious and possibly irreversible environmental damages already very soon. Despite all scientific studies, still high levels of uncertainty concerning the effects of further extraction of groundwater on the aquifer exist, providing opportunities for local actors to question the credibility and legitimacy of the science advice in general.

Furthermore, the stakeholders engaged in the process represent very polarized and divergent standpoints. Some of the stakeholders are strong proponents of the property rights movement and oppose any top-down decision making. Others strongly favor environmentalism (Varady et al., 2000).

However, some opportunities for change have begun to be revealed: The Section 321 issue gives efforts to conserve water the power of legal enforcement. In combination with the ongoing Base Realignment and Closure (BRAC) process of the Secretary of Defense, the threatening picture of a closure of Fort Huachuca due to its partial contribution to the water shortage in the SPRNCA became apparent. Along similar lines, the importance of the Fort as one of the largest employers and contributors to the regional economy makes neglecting water conservation increasingly politically unacceptable. The Fort itself started to draw the "connection of water conservation and job struggle" in communication with its own employees to promote more responsible private water consumption (Kent, pers. comm.).

Many stakeholders interpret the actual situation of the Partnership as well-suited to initiate new incentives for implementation. The fact that people start to connect the importance of responsible water consumption with sustained personal life quality and value of property seems to be a major role in the growing political consensus as well (Kent, pers. comm., Robie et al., pers. comm.).

Discussion

Influences of SLP on local decision making

Surprisingly, the graduate student planning process employed in the Pennsylvania case seemed to have stronger influence on local decisions than the multi-year research effort in the Arizona case.

In Monroe County, the study and its findings were well received. The project catalyzed discussion amongst stakeholders, many of whom perceived it as the first attempt to draw the connection between the conditions of natural landscape features and impacts associated with poorly integrated or unplanned policies that would allow for inappropriate development. It was understood as a "wake-up-call" and a "call for action" (Monroe County Planning Commission, 2001). By provoking public awareness of the issues of conservation and open space, the study facilitated cooperation among local public interest groups. As an example, The Nature Conservancy found long-time farmers a lot more receptive to conservation objectives and cooperation opportunities after the study was published and its findings publicly debated (Cook, pers. comm.). Three aspects stand out as being perceived particularly influential: The compelling visual character of the alternative futures, the illustration of negative impacts of growth and development, especially the fiscal effects, and the powerful idea to put all publicly owned land under conservation as a proposal for discussion. The organization of the data in GIS was understood as an effective tool for analysis, communication, planning and decision-making purposes and served as an impetus for the Planning Commission and some municipalities to put into use such a system themselves (Woodling et al., pers. comm.).

In contrast, the AF-study process and its results in Arizona found strong opposition by local stakeholders. As a result, it had only limited influence in the local debate; it was seen more as interference than a useful contribution, and the report “rests on the shelves” (Robie et al., pers. comm.). A great amount of local stakeholders disliked the study, because it was telling them that “they were wrong.” The notion that the stakeholders themselves would have to change their professional conduct or personal lifestyle was not appreciated. Along these lines, some stakeholders found that the participatory process was not inclusive enough and that their opinions were only limitedly respected. Notably however, it was not the methods used in the study that were questioned, but the findings (Kent, pers. comm.).

Despite the differences, citizens in both regions have acknowledged the fact that progress toward more sustainable development can only be achieved through collaborative planning and joint implementation of measures for environmental protection and conservation. In Pennsylvania, the collaborative planning process of “Monroe 2020” had enormous public support and surely can be considered the main reason for the successes achieved so far in open space preservation. The long-time continuation may also be attributed to the fact that the process was organized according to school districts which made the issues debated very tangible and might have reinforced the communal aspect of the collaboration. Interestingly, while public support on a regional level seems to have been attained successfully in Pennsylvania, the Not-In-My-Backyard rule still applies when the implementation-decisions have to be made on the municipal or private level. In the Arizona case, collaboration and understanding of the seriousness of the issue seems to have been apparent among the members of the partnership for long while implementation currently intensifies in response to the increased jurisdictional pressures.

Potential reasons for differences in SLP influence on decision making

One major factor impacting the influence of SLP seemed to be the specific legal, economic, and social contexts, thus reconfirming similar arguments by Clark et al. (2006) and others found in the literature.

The legal context of land use regulations hinder implementing comprehensive planning in both case studies. As in most other parts of the US as well, the authority to make decisions on zoning and subdivision ordinances is given to local municipalities; thus complicating the realization of more regional concepts. Furthermore, private land owners are assigned strong property rights which leave them relatively unrestricted concerning development or resource extraction activities. In consequence, common pool resources like groundwater may be exploited beyond sustainable limits, inducing negative impacts for the society at large.

The social context was more supportive in the Pennsylvania than the Arizona case. In the Pennsylvania case, many citizens are long-time residents, often commuting to employment centers outside the area. The Arizona case however exemplifies a region with a much more transient community. A large fraction of the population are retirees residing in the area only part time of the year (Woodling et al., pers. comm., Kent, pers. comm.). This might make them feel less personally connected to the area’s environment and less committed to conservation and preservation measures.

The degree of economic interests at stake also seemed to play a major role on influence of planning propositions. In Pennsylvania, proposals to conserve public land were well received by local actors while land owners and developers strongly opposed any measures that could restrict potential developments. Opposition to planning proposals was even stronger in Arizona where land owners criticized planning recommendations as unlawful and unconstitutional interferences with their property rights.

The creation and exploitation of “policy windows of opportunity” (cf. Kingdon 2003) proved beneficial for enhancing planning influence on decisions. In Monroe County, the policy window opened through two actions: First, county commissioners contributed to the increasing public awareness of the problem of urban sprawl (and thereby triggering the “opening process”) by issuing the two crisis warning documents. Additionally, once they saw this policy window of public interest opening up, they took advantage of it in both initiating a three year long participatory process (Monroe 2020) and putting forward the Open Space bond issue. The challenge to keep an issue on the public and political agenda once the policy window has closed again is currently illustrated by the difficulties of the County Commissioners to sustain the participatory process and to implement the comprehensive plan on the municipal level. In Arizona however, a window of opportunity was far from open. Instead, after many prior research projects had caused public discontent due to criticisms of their legitimacy and credibility (e.g. the CEC study), the community was not very receptive to yet another study from the very beginning (Kent, pers. comm.).

To discuss possible reasons for the different levels of effectiveness, apart from the influence of dominating external factors, this paper employs the recently developed conceptual model on the influence of scenario planning. The drawing on prior research by Clark et al. (2006) and Alcamo et al. (2006), the model suggests that the influence of scenario planning depends on the degree to which it is perceived as simultaneously credible, salient, legitimate, and creative by its audiences (Albert, accepted).

Public criticism of the credibility of the science is raised to a different extent in the two cases. The Arizona study was conceptualized as a very scientifically rigorous endeavor conducted by distinguished academics in their respective fields. However, a number of stakeholders questioned the study’s credibility concerning the hydrological model. It appears as if criticizing the rigorousness of the scientific process was seen as a way to justify non-compliance with and ignorance of the study’s recommendations. Along these lines, the USPP approach of asking for more studies can be understood as a way to suspend immediate action. In the Pennsylvania case, although the study was ‘only’ conducted by graduate students instead of university faculty members, its credibility was minimally contested. One reason for this might have been the publicly understood intention of the Monroe Study to serve primarily as a ‘thought experiment’ rather than a detailed research project. In some instances, the study actually lent credibility to the county’s own efforts to advance comprehensive planning since it became an often cited source of supporting data.

Criticism of legitimacy seems to have had a comparatively stronger influence in Arizona. In this state, outside expertise on regional and local issue in general tends to be even less welcomed than in Pennsylvania. In particular, it seems that the members of the Partnership perceived the Study’s findings as interference with “their” region. The question of political legitimacy of expert advice is an important one – however, the question remains if political legitimacy is achieved by the Partnership itself since it is a community of member institutions and not entirely approved by a public democratic vote (Upper San Pedro Partnership, 2004). In Monroe County however, one can get the impression that the stakeholders were interested in the findings of an external research group and at least did not reject the study for this reason.

Criticisms of saliency of the scientific advice arose in Arizona because the study’s results were considered only limitedly relevant to day-to-day decision making. Mark Apel, Planning Manager at the Cochise County Planning Department, argued that the study’s product (the publication) had little practical use for local decision making. In his experience, the scope of the study was too large as to be applied to local decisions that significantly influence the land use change dynamics, such as subdivision design or zoning changes. To enhance the study’s saliency, Apel proposed to feed the data into a digital Decision Support System that would be dynamically adaptable to changes over time and could be used for site-specific assessments of the environmental impacts of particular decisions (Apel, pers. comm.). Furthermore, the

study could have elaborated more on the operational steps necessary to achieve the different options on the table (Kent, pers. comm., Robie et al., pers. comm.). In contrast to this, the Monroe Study was found to address the relevant questions well, which again may be due to the fact that it was understood as a “thought experiment” of regional development issues rather than made for local decisions making.

Perceived creativity of the planning process and its results seemed to be of great importance for raising the interest among local actors. In Pennsylvania, bold propositions for conservation strategies and the establishment of public transportation systems created attention and seemed to animate audiences to further engage with the study’s findings. The Arizona planning process also included scenarios departing from conventional thinking, but appeared to not having succeeded in conveying the new ideas to the public.

Conclusions

This paper has explored the effects of SLP on decision making, and discussed potential reasons why some planning processes seemed to be more influential than others.

It became apparent that SLP can provide very useful information for decisions through integrating various sectoral information and data, developing scenarios of future developments, illustrating their potential implications for land use change, and assessing respective social, economic and ecological consequences.

The comparative analysis of two Alternative Futures Studies in Pennsylvania and Arizona, USA, resulted in the surprising finding that the graduate student planning process employed in the first case seemed to stronger influence local decisions than the multi-year research effort in the latter case.

SLP in Pennsylvania was perceived by local actors as a “call for action”. It provoked public awareness, and facilitated new collaboration. Social relations were enhanced, for example between nature conservationists and local farmers. Features of the planning processes that were perceived by local actors as particularly beneficial for yielding influence included the compelling maps and illustrations of alternative futures, the assessments of potential negative consequences of business-as-usual scenarios, and the proposition of innovative solutions. The planning process in Arizona failed to yield local influence, primarily due to a general dislike of the study’s findings and criticisms of the legitimacy of the planning process.

The analyses reconfirm prior propositions on the importance of context, but also strongly emphasizes that credibility alone is insufficient for yielding influence. Perceived levels of salience and legitimacy seemed crucial for local actors to consider planning results in decisions and creativity appeared to be essential for attaining public interest.

A promising strategy for enhancing the influence of SLP on decision making seems to be stronger participatory involvement of local actors in the planning process. More research is needed to understand how such participation can be implemented in planning, and if it indeed enhances the chances for planning proposals to be considered and potentially implemented in reality.

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