Dilemmas in the appraisal of multi-functionality (working paper)- Abstract ID 1057

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Abstract

Changes in public spending are encouraging governments to deliver multifunctional projects. Multifunctional projects integrate various functions to meet different socio-economic demands while optimizing the distribution of costs and benefits among several organizations. Despite the synergistic effects that can be achieved through integration, appraising multifunctional projects is often more complicated than appraising mono-functional projects. Defining and selecting function combinations need to involve the diversity and interdependence of effects and interests. Existing methods for appraisal have difficulties identifying synergy effects; and giving attention to the interests of a wide range of stakeholders. Before suggesting methods to support the appraisal of multifunctional projects, we must to provide practice based studies about the challenges that practitioners face while defining and selecting function combinations in multifunctional projects. To understand these challenges, this paper evaluates the dilemmas that actors encounter during the appraisal of a multifunctional project in the South West Delta in the Netherlands. In this project, the appraisal process revolves around two issues: (1) finding solutions to water quality and flood protection issues and (2) identifying financially profitable functions that help to pay for those solutions while stimulating economic development in the region.

Introduction

Space scarcity, changes in public spending, and the more prominent presence of sustainability are giving rise to new practices in the planning field. Multifunctional land use is one of the responses to these societal demands. Integrating land uses serves to fulfill several interests. Furthermore, combining resources from various organizations helps to ensure the project´s financial feasibility. The point of departure of multi-functionality is to achieve synergy from integrating land uses, resources, and interests. The main characteristics of multifunctional projects are (Swart et al., 2014): (1) an integrative and sustainable approach, (2) consideration of new spatial functions, (3) broader spatial context, (4) participation of several stakeholders, (5) new opportunities for cooperation between public and private sectors, and (6) enhanced quality of the project area.

The appraisal process of multi-functionality consists of the identification and selection of integrated functions. The goal is to identify functions that integrated are financially feasible, and help to satisfy multiple interests. To support this process, appraisals in multifunctional projects often include analysis and participation. Analyses help to quantify project effects. Instruments like social cost benefit analysis (SCBA), or environmental impact assessment often support analysis. Participation aims at considering the range of issues that the project is dealing with from the perspective of different actors. Participation often consists of consultation processes, workshops, or active involvement of stakeholders during the design of solutions.

Previous work has focused on the challenges of the appraisal and planning for multifunctional or integrated projects (Peek and Louw, 2008; Bakker, 2012; Beukers et al., 2012; van Broekhoven et al., 2014). Yet, there is a need for empirical studies analyzing appraisals in practice. This paper aims at gaining a better understanding of the appraisal of multifunctional projects. We focus on understanding the dilemmas that actors encounter during the appraisal, and their implications. Understanding dilemmas of planning and appraisal is important to deal with the existing challenges of practice (Savini, 2013; Savini et al., 2014). A dilemma is a situation in which there are two or more potential courses of actions, all having consequences that are equally desirable or undesirable. In the appraisal of a multifunctional project, actors encounter dilemmas about which issues to focus on. According to Savini (2013), and Savini et al. (2014) the type of dilemmas that actors encounter during appraisal and planning processes relate to (1) how to target and prioritize specific issues without excluding bottom-up initiatives, (2) how to transform an area while preserve other values, and (3) how to organize public and private resources so the project is viable and economically sustainable. Although actors are constantly dealing with dilemmas, these are often not visible and ignored (Janssen-Jansen et al., 2013). Often, actors perceive dilemmas as the cause of indecision or delay. However, dilemmas have the potential to look at the appraisal from different angles, trying to find compromises in a dilemmatic situation. In this paper, we focus on giving a hint on the dilemmas that actors encounter during the appraisal of a multifunctional project. Furthermore, we reflect on the implications of

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these dilemmas for the appraisal of multifunctional projects. To this end, we analyze the appraisal process of a multifunctional project in the South West Delta in the Netherlands. In the next sections, we introduce our research method, results and discussion.

Method

To gain insights into the dilemmas during the appraisal process of a multifunctional project, our research approach was an in-depth case study. We participated in the appraisal of the Grevelingen Volkerak Zoommeer (GVZM) project in the South West Delta in the Netherlands. The project integrates various functions to meet environmental, economic, social, and flood protection demands. This integration required the coordination of several organizations from different disciplines and administrative levels. Our sources of data collection were (1) observations of 21 meetings, analysis of more than 400 documents, and (3) collection of 30 interviews with stakeholders involved in the appraisal process.

Results

The Grevelingen, Kramer Volkerak and Zoommeer are three lakes located in the South West Delta in the Netherlands. For decades the Grevelingen Volkerak Zoommeer area (GVZM) was a popular touristic destination, and an important engine for employment. Yet, the water quality in the GVZM worsened, having a negative impact on the economic activities of the area. Since the beginning of 2000s, national and regional authorities developed studies to understand the problems in the GVZM, particularly about water quality and fresh water supply. In table 1, we provide short summary of the problems and solutions for the GVZM based on the studies developed in the last decade.

Table 1 Problems and solutions in the GVZM

	Grevelingen	**Volkerak Zoommeer**
Problems	• Lack of oxygen in water threatening the habitat of flora and fauna • Risk of flooding in the neighboring areas in case of simultaneous river discharge and surge from the sea	• Blue algae causing negative impact on surroundings. • Reduction of available fresh water supply during warm periods.
Solutions	• Changing the tide • Using lake for water storage	• Salinization of Volkerak-Zoommeer.

In 2012 there was a positive decision to set up a consultation to evaluate a priori the opportunities of an improvement of water quality in the GVZM. A formal process started in January 2013 to make a proposal by 2015 with plans to improve the water quality in the GVZM. In this process, there were two trajectories concerned with the identification and selection of function combinations: one responsible for the analysis and another one responsible for participation. Indeed, analysis was at the core of the appraisal process in the GVZM. Throughout 2013, the government developed a SCBA, regional impact assessments and business cases. The goal of these studies was to understand the monetary effects of the project from both a societal and a investors' perspective. Furthermore, the national government organized a participatory process involved 18 public, semi-public and private stakeholders. The goal of this process was to incorporate regional demands, and inform about the implications of the project effects. During the appraisal process, actors encountered two main dilemmas.

Dilemma 1: Salinizing the VZM offered economic opportunities. However, salinization reduced availability of fresh water supply for agriculture.

Salinizing the VZM would improve water quality leading to increased economic activities, but it would reduce available fresh water supply for agriculture. Consequently, the agricultural sector called into question the desirability of salinizing the VZM. The national government organized a Joint Fact Finding (JFF) process, to identify compensation for the reduction of fresh water supply. The JFF had three main goals. First, it aimed at developing a scientific analysis of the existing situation of fresh water supply in the region. Second, it focused on understanding the influence of the salinization of the lakes on agriculture. Third, it aimed at understanding the required compensations as a consequence of the project. Compensating for the reduction of fresh water supply entailed high costs. Thus, compensation needed mechanisms to ensure the financial viability of the project.

Dilemma 2: There are opportunities associated to an improvement of water quality in the project but there is a lack of financial resources to finance it.

Salinizing the Volkerak Zoommeer and changing the tide in the Grevelingen offered opportunities for economic development. However, salinization and tidal changes cost 350 million euro. The national, provincial, and local government agencies could not bear the costs without the financial support of market parties and regional stakeholders. The slogan of the appraisal process was "turning stakeholders into shareholders". The appraisal focused on identifying functions that could help to pay for the interventions to solve the water quality problems. These were functions of varying nature: urban revitalization, environment, landscape, agriculture, fisheries, recreation, transport, housing, energy.

The focus of the appraisal was on providing programs of investments, and transforming regional interests in concrete real–estate projects. Revenues flowed from one function to another, and the decisions in the appraisal process were dependent on economic and financial assessments. Providing an integrated overview of the project effects was important because of two main reasons. First, it allowed keeping options open. Second, it allowed for the exploration of co-financing strategies. Figure 2 shows the structure of connections among functions in the project.

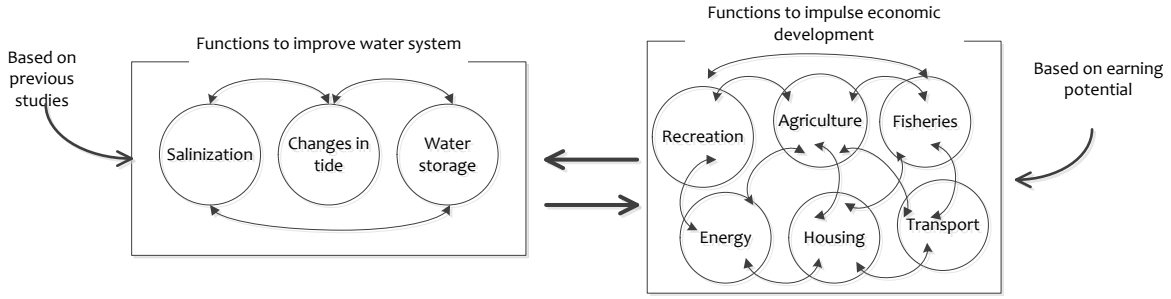

Figure 2 Connections of functions in the project

Business cases and the SCBA strongly focused on showing the revenues and profits that a combination of functions could bring. Yet, attracting the financial contribution from regional stakeholders was challenging. First, the presence of uncertainty impeded the calculation of benefits of water quality and functional integration. Second, it was difficult to align the timeframes of integrated functions. Third, there were distributional effects resulting from the integration of various functions.

Functional integration provided benefits for various stakeholders. However, calculating the benefits of improved water quality was challenging because of various uncertainties. For example, the SCBA showed that tidal in the Grevelingen lake could improve the soil conditions. Better soil conditions would make the area more attractive for skilled divers who often spend more money in recreational locations. However it was difficult to estimate accurately how much profit that increase in skilled divers would bring. Given the difficult to calculate this benefit, it was obviated in the SCBA and the business cases. Similarly, calculating the profit of improved water conditions on the real estate market was problematic. An improvement in water quality would make the area more attractive to live because of the reduction in odors, and the increased attractiveness of the landscape. This enhancement could be translated into a rise in housing prices of 25%. However, this estimation was contested. Some experts doubted about the possibility of providing a direct link between an increase in the attractiveness of the area and real estate prices. Similarly, improving the recreational environment would allow selling the land, leading to earnings for real estate investors. However, these earnings depended on volatile market conditions, and unpredictable preferences of visitors. Consequently, the positive effects for real estate were, again, contested. Furthermore, aligning the lifespans of functions was difficult. An improvement of water quality could help to improve the landscape in the GVZM. The noticeable effects in the landscape were expected in 2030. Yet, it was required to pre-finance and develop camping areas and recreational accommodation by 2020.

Last, distributional effects of functional combinations was also an issue. Functions like windmills and fisheries provided financial profit to pay for the improvement of water quality. The business case of the salinization of the VZM showed that fisheries could provide more than 90% of the total earning potential. Yet, environmental organizations acknowledged that the development of fisheries could put the landscape and nature under pressure. Similarly, the development of a wind park in the area next to the Kramer lake could provide financial profit for investors, and contribute to the provincial ambitions of supplying 6000 MW of sustainable energy. However, windmills could have an impact on the horizon and lead to distubrances because of the noise in the area.

Providing clear effects of the project was challenging which led to uncertainty about the willingness to pay from regional stakeholders. At the moment we wrote this paper, there was still the need to get 20% of the required financial resources to get the project implemented.

Discussion

The main goal of this paper is to understand the dilemmas that actors encounter during the appraisal of a multifunctional project. In this section we reflect about the implications of our findings.

In the GVZM, there were two main dilemmas. The first dilemma emerged from the need to meet two competing project demands. On the one hand, there was a need to improve water quality by salinizing the VZM. On the other hand, the appraisal had to preserve existing values like fresh water supply. Transforming the area would have a negative effect on the values to be preserved. Giving up transformation through salinization would preserve existing values like fresh water supply. However, it would not realize the ecological and economic opportunities of transformation. The appraisal process dealt with this dilemma by organizing a JFF process. The JFF helped to develop strategies to simultaneously preserve and renovate. The appraisal revealed the high costs of compensation, showing the importance of mobilizing financial resources to implement the project.

The second dilemma emerged from the difficulty to show the integrated project effects, leading to hesitation among regional stakeholders to invest in the project. Due to the lack of resources in the public sector, an improvement of water quality required the financial contribution of regional stakeholders. Consequently, the appraisal focused on identifying functions that could provide financial profit for investors. To show the earning potential from the functional combinations, there was great focus on using economic instruments. Although economic instruments hinted at the economic opportunities of linking water quality to various functions, these integrated effects were difficult to quantify for three main reasons. First, there was uncertainty and unpredictability regarding some of the projected benefits. Second, it was difficult to align the timeframes of different functions. Third, it was challenging to calculate the distributional effects of functional combinations. These problems made it difficult to encourage the financial contribution from regional stakeholders. Uncertainty about the contribution of regional stakeholders jeopardized the viability of the project.

The two dilemmas here presented reveal the main obstacles in the appraisal process of multifunctional projects. These difficulties relate to the lack of (1) incentives to combine functions because of the struggle to foresee the benefits of integration, and (2) coordination among stakeholders. Through the integration of various functions, it is expected to achieve synergy or, as previous literature has acknowledged: 'some value that did not exist before' (Holden, 2012). In the Netherlands, the use of multifunctional projects is often justified under the slogan 'the whole is greater than the sum of its parts'. However, our results show that synergy is often not explicit enough in the assessment of effects for multifunctional projects. The appraisal of multifunctional projects requires the consideration of various effects like improvement of landscape, cultural heritage, or environmental quality among others. Although the impact of these functions in solitary might be easy to calculate, the integration of effects might not always be evident. Indeed, current economic instruments adapt poorly to the integral and long term perspectives of multifunctional projects (Beukers et al., 2012). Furthermore, there is a tension between short-term and long-term goals. As Janssen-Jansen et al. (2013) point out, economic instruments are often proposed without paying attention to interdependencies and redistributive mechanisms involved. The difficulty showing the project effects often leads to a lack of incentives for stakeholders to contribute to the project. This lack of incentives deceives the main motivation to develop multifunctional projects: meeting various demands and achieve the synergy of integration.

Furthermore, our results show that achieving coordination among various stakeholders is challenging. Multifunctional projects involve actors from several organizations and administrative levels. These actors often have different interpretations about what is going on in the project and what should be done. This diversity of interpretations leads to situations in which there are various valid and desirable potential courses of action. Current appraisal approaches do not have mechanisms to incorporate this multiplicity of interpretations. Quite often, an interpretation prevails over others. Under these circumstances, the question remains: what makes an interpretation succeed? Since economic instruments are at the core of appraisals for multifunctional projects, it is not surprising that a financial interpretation often prevails. Constraints resulting from the financial crisis accentuate the predominance of the financial interpretation. In the GVZM, we observed that the lack of resources to finance the project directed the attention towards financial issues. This focus on financial profit causes that functions providing the highest financial profit are often the focus of the appraisal. As a result, this focus might again betray the original motivation to develop multifunctional projects which is the fulfillment and incorporation of various demands.

Regardless, actors still have to make decisions about what functional combinations to choose under uncertain and ambiguous circumstances. The question is, given the presence of multiple perceptions about the project effects (or lack of clear effects), what is the role of the multiple interpretations in the appraisal and how can these interpretations be incorporated in the appraisal? Our results have shown the importance of dealing with dilemmatic situations during the appraisal of multifunctional projects. As we previously mentioned in the introduction of this paper, dilemmas are not necessarily a pretext for paralysis. On the contrary, dilemmas can help to open up spaces for looking at the same situation from different angles. However, current appraisal processes have difficulty incorporating different interpretations about the project. We encourage further research to explore in depth the influence of competing interpretations about the project during the appraisal. To better understand dilemmas, we encourage studies exploring how the presence of various interpretations leads to dilemmas. Last, we encourage exploring approaches to create awareness about dilemmas, and exploit the potential of dilemmas to create spaces for deliberation in appraisal.

Conclusion

This study evaluates the dilemmas that actors encounter during the appraisal of a multifunctional project. The need to combine various competing demands in the same project often leads to dilemmas in the appraisal. We have evaluated a multifunctional project in the South West Delta in the Netherlands. Our research results show two main dilemmas. The first dilemma relates to the simultaneous need to change an area while preserving existing values. Indeed, the integration of functional effects is subject to the diverse interpretations of actors, leading to potential situations of ambiguity in which it is not clear what the desirable course of action is. The second dilemma relates to the existence of uncertainty about the project effects, leading to hesitancy to contribute financially to the project. This hesitancy may jeopardize the financial viability of the project because multifunctional projects often need to integrate resources from various organizations to be financially feasible. Our research results reveal that current appraisal approaches have difficulty dealing with the competing demands and dilemmas that actors encounter during the appraisal of multifunctional projects. We believe that creating awareness about the dilemmas during the appraisal process is the first step towards approaches that take advantage of the potential of dilemmas to create spaces for deliberation. We encourage further research exploring the role of multiple interpretations, and dilemmas in the appraisal of multifunctional projects.

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