

Step towards innovative governance for strategic UGI planning Linking stakeholders' network structure and application of UGI planning principles

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This paper presents a distinct method for linking stakeholders' network structures and effective outputs of UGI implementation. Using existing SNAs of different governance arrangements, structural position of non-state actors is related to diverse UGI implementation outputs. Results show how the different structural position of non-state actors influences the successfulness of UGI implementation, evaluated by the application of UGI planning principles. The paper argues for incorporating social network structure analysis in developing effective policies for UGI implementation processes. The work presented here has a implications for future studies of multi participatory governance arrangements.

I. INTRODUCTION

Urban growth with densification processes will significantly change the urban fabric and urban functions affecting green space, microclimate and biodiversity. Potentials and risks for establishing urban green infrastructure (UGI) are emerging and effective solutions are required to provide new space for UGI.

Green infrastructure network which provides ecosystem services at a city scale is well recognised for its significant capacity to handle climate related dangers [1], including cooling, greenhouse gas mitigation, support for biodiversity, improving overall human well-being, as well as their potential to be more cost efficient than alternative adaptation approaches.

The use of UGI and its mainstreaming into municipal planning is receiving increasing interest from academic and governmental bodies. Despite the interest, the strategies for systematic implementation and management of urban green infrastructure for enduring supply of ecosystem services in dynamic urban systems stand unclear [2].

Urban Green Infrastructure (UGI) planning is based on four planning principles: connectivity, multi-functionality, integration and multi-scale [3]. Connectivity and multi-scale principles are the biggest challenge in most of governance arrangements. In many cases both municipalities as well as non-state actors put little emphasis on the connectivity of green spaces.

UGI principle of multi-functionality is a common element of most governance arrangements. Different stakeholders have a different interests, and collaborating with local initiatives may therefore help municipalities to increase multi-functionality that fits well within local communities.

The diversity of stakeholders and their different needs and perceptions about UGI complicate implementation processes, often resulting in conflicts about the objectives and spatial arrangement of UGI. Mapping and involving diverse stakeholders and creating the networks that outgrow formal organisational borders and hierarchical divisions could strengthen collaboration and upgrade the governance to achieve desired goals.

A deeper comprehension of how cross-boundary networks operate and how their qualities might be related to success and failure of policymaking is crucial for improving the effectiveness of public management [4]-[5].

Shift towards governance has resulted in new forms of interaction between government bodies, urban residents and other non-state actors. It includes policy arrangements in which non-state actors are consulted in green space decision-making processes, or in which there is a form of cooperation between government actors and non-government actors. Examples of non-state stakeholders playing a role in delivering UGI can be found at all scales, from urban agriculture, gardening initiatives, businesses adopting botanic gardens to the integration of brownfields into the UGI.

UGI planning is also strategic, based on long-term spatial visions. It remains difficult to overcome the trade-off between a focus on the strategic level and respecting the autonomy of non state actors working in a diversity of unconnected green dots on the neighbourhood level. Some innovative governance arrangements, eg. mobilising social capital and co-governance, have developed solutions for long term instruments and collaboration.

In this paper the different governance arrangements, seen through the prism of (previously delivered) structure of policy networks, and their outputs in UGI planning are compared, with a goal to determine the role of non state actors in delivering UGI according to the UGI planning principles.

II. USING SNA FOR CREATING INNOVATIVE GOVERNANCE ARRANGEMENTS

One approach to investigate needed collaborative and multi-level governance settings is social network analysis [6]. Social network analysis (SNA) helps to deepen our understanding of connections between government bodies, urban residents and other non-state actors. SNA is a formal method for analysing and presenting networks by identifying nodes (groups or individuals represented as dots) and the ties or links between them (represented as

lines).

Applied to policy analysis and implementation, social network analysis concentrates on structural patterns between actors. In contrast to state-centric perspectives on policy-making, the network approach assumes that informal decision-making arrangements and the involvement of non-state actors are crucial aspects [7].

Stakeholder analysis can be used to identify who has an influence in various aspects of the system, what are their position in the network and connections with the other actors. Such information is important for natural resource management initiatives that aim to influence the behaviour of stakeholders through key players. SNA therefore can help determine how to set up most effective organisation for UGI implementation, with priorities based on local conditions.

III. METHODOLOGY AND RESULTS

In this paper, the structure of policy networks—meaning the constellation of actors and the patterns of their interactions—is treated as the main variable in explaining policy outcomes and performance.

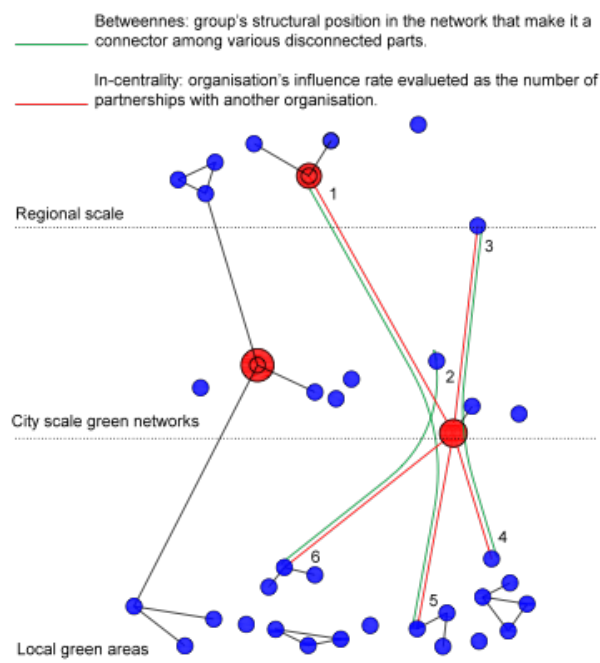


FIGURE 1: ACTOR'S IN-CENTRALITY AND BETWEENNESS IN A NETWORK

Existing social network structures of different governance processes in protecting and managing urban green areas are analysed, specifically through social network position of non-state actors. The performance of specific governance arrangement is further evaluated through UGI planning principles: connectivity, multi-functionality, integration and multi-scale. Case studies are chosen according to different degrees of involvement of non-state actors, determined by their in-centrality (number of partnerships) and betweenness (structural position) characteristics. Results show how the different levels of influence of non-state actors influences the successfulness

of UGI implementation, evaluated by UGI planning principles.

IV. CONCLUSION

A network perspective could be a useful complement to determine effective governance arrangements because it gives an insight into the structure of the interactions between the actors and the ways in which this structure affects the performance of the system. Another benefit of a network perspective is the availability of a uniform language with which to describe complex systems in terms of nodes and links and therefore can have a wide application for helping creating a innovative governance arrangements for efficient UGI implementation.

This paper offers insight in how different structures of policy networks ease or constrain UGI implementation, while UGI planning principles are used as a evaluation of policy network's performance. Determining the role of non-state actors and their impact on respecting UGI principles while implementing GI in urban areas can help create policies who encourage and influence the wanted behaviour of the key non state- actors.

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