Managing uncertainties in the implementation of Gaza Phoenix recovery framework

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Abstract

The paper proposes a model for the implementation of reconstruction projects in the Gaza region as outlined in the Gaza Phoenix Recovery Framework. The model includes creating alternative scenarios and mapping uncertainties against the backdrop of these scenarios adopting a participatory approach, which is consistent with a fundamental principle underlying the GPRF. The paper outlines operational guidelines for preparing scenarios and assessing uncertainties, assigning the GPRF multidisciplinary team the role to facilitate, give voice to and support the population's perspective on the reconstruction of the Gaza region.

Keywords

Project implementation options, Uncertainty mapping, Scenarios, Strategies, Gaza Phoenix Recovery Framework.

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Introduction

Cities grow and shrink, modifying their structure. Common features of urban growth include impervious surfaces, urban sprawl, traffic congestion (Schewenius et al., 2014) and new forms of "peripheralization" of rural areas (Larondelle & Haase, 2013). Conversely, urban shrinkage leads to the creation of empty or under-used urban areas, demolitions, abandoned industrial sites and de-densification (Haase et al., 2014a). All these processes can influence the functioning of an urban system. Every change in land use may alter system equilibrium, with consequences for resilience and system functionality (Pelorosso et al., 2011; 2015).

From an environmental perspective, unregulated development or shrinkage may significantly impact climate, stormwater control, biodiversity, and air and water quality. From a social perspective, several consequences may emerge regarding social capital, segregation, and quality of life.

Planners and designers can limit negative socio-ecological impacts by integrating nature into the city (McPhearson et al., 2014). Nature in cities is fundamental for sustainability. Humans rely on nature to meet primary needs, such as food and drinking water. Nature mitigates negative pressures of an oversized Western society, improves the aesthetic appearance of cities, and green/blue areas reduce the urban heat island effect and flood risks. These areas provide multiple environmental and socio-cultural functions and form part of Urban Green Infrastructure (UGI). UGI improves wellbeing, public health, and provides economic benefits, which can be analyzed through Urban Ecosystem Services (UES) in particular the potential to mitigate the alteration of the hydrological cycle (Leone, Grassini and Balena, 2022). Land-use changes, conversion associated with shrinkage, or residual non-urbanized areas between new settlements offer potential to enhance and expand UGI.

Green and permeable elements such as green roofs and trees can also be introduced in compact districts.
Achieving optimal UGI organization is challenging. Sustainability can be enhanced by increasing system complexity, mimicking ecological systems (Ho, 2013; Leone et al., 2017). In cities, this is achieved by considering UGI multifunctionality and spatial organization. UGI should maximize non-dissipative flows and minimize dissipative ones, reducing entropy production. Sustainable UGI depends on designs that reuse system waste and minimize external energy, materials and labor.
A green area may have minor or negative effects if poorly placed. A park in an inaccessible area may not meet needs and requires maintenance resources. The same park could be highly valuable if designed for stormwater management, reducing combined sewer overflows and protecting receiving water bodies. Proper spatial and temporal analysis of environmental and social processes is essential, often requiring GIS and modelling techniques.
This article presents Non-Urbanized Areas (NUAs) and Nature Based Solutions (NBSs) in the context of UES.

Methodological note

Scenarios provide images of the future that usually has a long-time horizon, longer than the "long-term phase" proposed in the GPRF and the Road Map. Scenarios are relatively undetailed images of alternative probable and/or desirable futures. Their main purpose is to provide background and context for decisions, which in our case are already outlined in the GPRF. The scenarios also increase our understanding of the present situation and the various uncertainties that define it. In this way scenarios enable us to

develop alternative strategies for the implementation of the GPRF.
Uncertainties can be demarcated according to life domains such as political, economic, and social and technological spheres. Alternatively, they can be classified according to the strategic approach which, for example, the implementors of the GPRF select bearing in mind the uncertainties. According to this approach uncertainties are categorized in relation to 1) the working environment, broadly defined in terms of political, economic and social and technological milieus (UE), 2) decisions made by other public or private agencies (UR), 3) guiding values prevailing in Palestine generally and in particular in Gaza (UV).

Operational guidelines

In the following texts we outline operational guidelines for preparing alternative scenarios and evaluating uncertainties in the implementation of GPRF
The approach consists of five-steps. They can be carried out in brain-storming workshops where participants are physically present or participate virtually. We advocate a participatory approach that is also a fundamental principle underlying the GPRF which states that "The future of Gaza can only be in the hands of its people.…experts should empower the community's vision, not dictate it".
The role of the GPRF's multidisciplinary team should be to facilitate, voice and advocate the people's view on reconstruction of the Gaza region.

STEP 1 - Catalysts and obstacles

Catalysts are incentives or stimulants that may enable the implementation of the GPRF. They can be political or economic or social and can be re-classified according to the strategic choice approach: UE – UR – UV. For example, here is a list of catalysts:

- **Political catalysts**: GPRF receives considerable support from key international organizations, NGOs in Gaza are supportive of the Road Map.
- **Economic catalysts**: Appreciable agreement among donor agencies regarding the financing the reconstruction according to the Phoenix Roadmap. Local entrepreneurs' strong belief in mobilizing local labor for the reconstruction projects.
- **Social catalyst**: GPRF has been instrumental in mobilizing considerable support from Gaza's five municipalities. NGOs willing to provide technical support for the reconstruction projects.

In the same way a list of obstacles, in other words, stumbling blocks or deterrents, that may disable the implementation of the GPRF, needs to be prepared. For example, here is a list of obstacles:

- **Political obstacles**: Reconstruction of Gaza is constantly inhibited by constant external inference. Long delays in the supply of necessary building resources.
- **Economic obstacles**: Constant disruptions of the banking system in Gaza cause delays in the flow of foreign reconstruction aid. International donor agencies are in disagreement with providing necessary funds owing to domestic political dissentions.
- **Social obstacle**: Long period of colonization and intermittent military conflicts have resulted in dismay in Gaza society. Clan-based dissentions have been exacerbated by "divide-and rule" policies of the colonial

authorities.

STEP 2 - Identical, mutually supportive and mutually exclusive statements

Catalysts and obstacles are identified and rearranged into three categories:

- **Identical proposals**: there are only differences in the way proposals are expressed.
- **Mutually supportive proposals**: they create similar sense of shared success or failure. They reinforce each other in the same policy area.
- **Mutually exclusive proposals**: they cannot exist or happen together at the same time.

An example of identical statements:

- *In 2030 Gaza municipalities* participating *in the GPF receive full support from key international organizations and NGOs*
- *In* late *2020s Gaza municipalities participating in the GPF receive support from international organizations and NGOs*

An example of mutually supportive statements:

- *GPRF has been instrumental in mobilizing Gaza's population for the reconstruction projects.*
- *There is a considerable agreement among international and national donors regarding reconstruction aid in accordance with Gaza Phoenix Roadmap.*

An example of mutually exclusive proposals,

- *Implementation of the reconstruction of Gaza is inhibited by constant external interferences.*
- *Gaza Region receives uninterrupted aid from international donor agencies.*

STEP 3 - Deriving alternative scenarios

Following the preparation of the above statements or proposals, the participants need to discuss and rearrange the statements, in order to develop two or more alternative scenarios. Based on our understanding of the situation in Gaza, we feel that it may be necessary to have three scenarios, for example:

- Scenario 1 - Relatively trouble-free implementation of the GPRF.
- Scenario 2 - Incremental and partial achievement of the GPRF.
- Scenario 3 – Stalemate: Waiting in the wings.

Scenario 1: Hopeful future with very few political, economic and social obstacles. Gaza able to live at peace with neighboring countries.

Scenario 2: "Stop-go development" implies that for almost every step Gaza society takes in order to live in peace with its neighbors, there are external interferences that thwart reconstruction attempts.

Scenario 3: Gloomy future implies that it is almost nearly impossible to implement the GPRF in foreseeable future mainly because of external interventions but the Gaza society hopes of the possibilities to achieve reconstruction goals once conditions improve radically.

STEP 4 - Mapping uncertainties

Understanding the preconditions for achieving the objectives of the GPRF in a carefully thought-out step-by-step process in crucial stages of the Phoenix Roadmap.

- **Uncertainties about working environment (UE)**: Factors that would facilitate or hinder Gaza's efforts for reconstruction. For example, 1. A durable peace between

Israel and Palestine is difficult to achieve. 2. External donor agencies no longer fulfill their promises for financing the reconstruction projects.

- **Uncertainties about related decisions (UR)**: Factors that have historically defined Gaza region's geopolitical, social and economic status. For example, 1. Decisions taken by neighboring regions are contrary to the wishes of the Gaza society. 2. Constant failures of understanding between Gaza and other Palestinian regions.
- **Uncertainties concerning guiding values (UV)**: Societies that have experienced long-term colonial occupation with all kinds of pressive regimes develop frame of mind that is detrimental to political, economic and social self-reliance. De-colonizing the mind takes time. The implementation of the GPRF has an implicit assumption of mass mobilization of the society. For example, 1. The clan-based values may prove to be countervailing to the desires implicit in mass-mobilization efforts. 2. Colonial occupation has created a sense of defeatism that may hinder entrepreneurial initiatives

STEP 5 - Strategies for achieving the objectives of the Gaza Phoenix Recovery Framework

The causal approach that we have discussed above can be simply stated as following:

Alternative scenarios → Uncertainty maps → Strategies → The roadmap for the reconstruction of Gaza

Once the participants in the above outlined process have achieved a consensus about the scenarios and uncertainty map, they have the final task of developing strategies in order to implement building projects as outlined in GPRF.

Strategies are vital for ensuring the implementation of development projects in face of uncertainties.
We illustrate the relationship between the four elements in strategic decision making with the help of one example from each scenario and corresponding set of uncertainties and necessary strategies to manage these uncertainties.

Table 1 - Illustrative relationship among strategic decision-making elements

Scenario	Set of uncertainties	Strategies
Relatively trouble-free implementation of the GPRF	Donor agencies' willingness to finance the reconstruction of Gaza on a piecemeal basis in order to ensure optimal use of their money	"Rolling" evaluation of the construction projects in order to ensure transparency and uninterrupted flow of foreign aid
Incremental and partial achievement of the GPRF	Decisions taken by neighboring regions are contrary to the goals of the GPRF, leading to unstable supply of building material	Mobilizing supportive network of national and international organizations to exercise constant pressure in order to minimize chicanery
Stalemate: "Waiting in the wings"	The clan-based values may prove to be a major obstruction in order mobilize efforts for self-reliant actions in order to improve the living conditions of people living in improvised settlements	Developing a framework of neighborhood mobilization efforts in order to reduce clan-based obstacles

Concluding reflections

In this paper, we have outlined a procedural model for increasing robustness for the implementation of programs and projects outlined the GPRF. Our model advocates that the GPRF is anchored in a knowledge base provided in alternative scenarios enabling the participants to map out of uncertainties and to derive strategies in order to assuage uncertainties, and thereby ensure a sustainable achievement of the reconstruction of the Gaza region.

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