ACC DAR Adapting to Climate Change in Coastal Dar es Salaam

A PARTICIPATORY BACKCASTING SCENARIO METHODOLOGY FOR SUPPORTING CLIMATE CHANGE ADAPTATION PLANNING AT COMMUNITY LEVEL: ACCESS TO WATER IN COASTAL DAR ES SALAAM

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1. Introduction, Scope and Motivation

1.1. Background

The ACC Dar Project aims to improve the effectiveness of the municipal initiatives in Dar es Salaam that support coastal peri-urban populations' efforts to adapt to Climate Change (CC) impacts and thus contribute to the implementation of the National Adaptation Programme of Action (NAPA) of the United Republic of Tanzania. More specifically, project activities will enhance the capacities of Dar's municipalities by increasing their understanding of adaptation practices, and by providing them with enhanced methodologies for mainstreaming adaptation into strategies and plans for Urban Development and Environment Management (UDEM) in unplanned and underserviced coastal settlements.
The present study was developed in the framework of Activity 2.2 of the Project, which focuses on the development of scenario approach methodologies for exploring the vulnerability of coastal peri-urban populations under CC.
Previous studies developed within Activity 2.2 indicate that CC will have an important impact on the hydrogeological budget of the shallow aquifer, placing those who depend on wells for access to water at risk (Sappa et al., 2013; Faldi and Rossi, 2014). As such, the present work concentrates on the issue of access to water, particularly in coastal zones where salinization of groundwater is already evident.
So that the population's aspirations, problems and proposals for accessing water can be understood and introduced into adaptation planning at the community level, a specific participatory methodology for building scenarios was developed and tested through a scenario exercise in a peri-urban area within Dar es Salaam's coastal plain.
The results of that activity are reported below, and provide useful inputs as regards defining community-level adaptation objectives and developing a methodology for the participatory design of community-based adaptation initiatives, which is the ultimate goal of Work Package 2 (Activity 2.3) of the Project.

1.2. Goals and Scope

The overall objective of this study is to improve participatory scenario methods for supporting local CC adaptation planning that take into account the community's development objectives as well as factors that influence their potential to reach such objectives.

More specifically, the study aims to provide a participatory scenario methodology, based on the conceptual model of participatory backcasting and use of the Theatre of the Oppressed (TO), which can be used to:

a. explore populations' aspirations for accessing water and the challenges that may undermine their achievement;
b. identify and elaborate possible strategies for overcoming those challenges.

Identification of the population's aspirations and proposals and of contextual obstacles to and conflicts over water access will contribute to the knowledge base (along with information produced through other project activities) upon which community development objectives can then be developed as a guide to mainstreaming CC adaptation into the local UDEM plans already in force.
Figure 1 situates the present participatory activity in the broader context of the ACC Dar activity workflow.

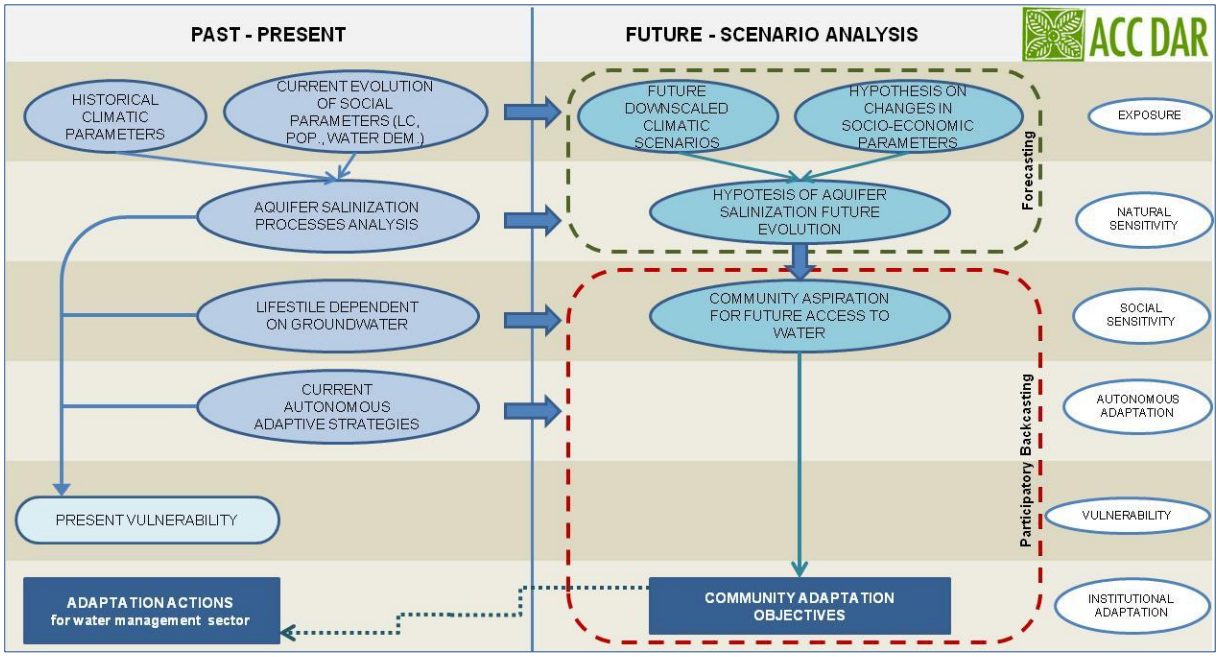

Figure 1 - Participatory backcasting within the ACC Dar Project activity workflow

1.3. Motivation

Growing international interest in and commitment to CC adaptation have resulted in progressively more complex methodologies for defining adaptation strategies, from "classical" impact/risk studies for natural disaster management to more articulated CC vulnerability studies that include analysis of the interaction between the climate, environmental and human factors that determine CC impacts and people's adaptive capacity (Füssel and Klein, 2006).
Among the different methodological tools applied to adaptation planning, scenario analysis is increasingly used by researchers and policy makers because it is considered particularly useful in anticipating and shaping the future, and therefore able to deal with the increased uncertainty and complexity of socio-economic, environmental, and climatic systems (Börjeson et al., 2006).
The present study assumes that planning for CC adaptation in urban areas should not seek exclusively to reduce the potential impacts of CC, but should also identify transformative social projects oriented to sustainability.
This perspective necessitates the innovation of a consolidated scenario approach for local adaptation planning based on the use of downscaled forecasting scenarios for exploring possible future trends in climate and non-climate factors. This type of approach is unable to fully recognize the contextual mechanisms that determine people's trajectories of vulnerability, nor their legitimate expectations for change. As a result, in many cases the need for adaptation has inhibited people's future projects and reproduced or even reinforced mechanisms of vulnerabilization of marginal groups (Adger et al., 2009).
As such, it was considered necessary to develop a scenario building methodology that takes the local community's aspirations into account, as well as the non-climatic factors that may influence these aspirations, by reversing the usual approach to the planning process (*backcasting* rather than *forecasting*) and by promoting direct participation in the definition of objectives and strategies.

The definition and application of this methodology in a coastal peri-urban area of Dar es Salaam also contributes to the much needed development of alternative methods of participation that overcome the limitations of the O&OD approach (Opportunities & Obstacles to Development), currently used in planning processes in Tanzania (URT, 2007). This method, which was introduced in 2001 pursuant to the policy of decentralization in decision-making systems pursued by the Tanzanian government since 1992, has undoubtedly brought some benefits by introducing a certain degree of community participation in the planning process and by making LGAs "responsible" to communities. However,

results have only been partially satisfactory (REDET, 2009). Current decision-making procedures only allow for citizens' participation at the initial (i.e. need assessment) and final (i.e. single project details) stages, leaving strategic choices (i.e. budget allocation) and project selection to higher levels of authority. Apparently, citizens have no voice in shaping development policy and ensuing actions since they do not really participate in key planning activities, which often leads national and local decision-makers to disregard their aspirations and potential for change. Hence, the necessity arises of innovating the existing participatory method in order to bring to light those aspirations and potential as a way for the community to increase its influence over planning decisions.

Finally, a further motivation for the development of the activity reported here originates from the specific issue addressed, namely access to water, which is currently an emerging problem for Dar es Salaam's coastal communities due to the rising level of aquifer salinization caused by increasing anthropogenic pollution and seawater intrusion (Mato, 2002; Mjemah, 2007; Mtoni et al., 2012; Sappa et al., 2013; Faldi and Rossi, 2014). In fact, due to the inadequacy of the municipal water system in meeting the increasing water demands of a growing population (from 1.8 in 1992 to over 4.3 million in 2012, according to the National census), most of the Dar es Salaam's coastal communities depend heavily on groundwater for domestic and productive (mostly agriculture-related) purposes (URT, 2011b). Over the past 15 years, the number of wells has increased significantly, up from a few dozen to more than 2200 official private wells and an unknown number of informal boreholes (Mjemah et al., 2009; JICA, 2012), and these numbers continue to increase (Mtoni et al., 2012). Moreover, the changes in climatic conditions, including significant trends of rainfall decrease (from about 1200mm/year in the 1960s to about 1000mm/year in 2009) and mean temperature rise (the highest temperature values ever recorded have all occurred in the last decade) (Kassenga and Rugai, 2014), have contributed to the impoverishment of local freshwater resources and an additional demand for groundwater. Such a situation could be exacerbated by the effects of CC.
As a consequence, exploration of the community's aspirations, problems, conflicts, and proposals regarding access to water can provide useful information for supporting local institutions in the identification of adaptation activities to be mainstreamed into water management plans and strategies.

2. Approach and Methods

2.1. Overall Approach

Planning for CC adaptation in urban contexts is a major challenge, particularly due to increasing levels of future uncertainty, which is strictly related to the increasing complexity and dynamicity of socio-economic and environmental systems (which are intrinsically unpredictable), and to the difficulty in predicting climate effects at the regional/local level (Oldfield, 2005).
This challenge is even more pronounced in Sub-Saharan cities, like Dar es Salaam, where definition of adaptation strategies has to face not only the uncertainty of future climatic conditions at the local level and the shortage of historical data on climate and environment, but also the lack of planning instruments (or inadequacy of the existing ones) for understanding and governing the dynamic processes under way, such as high rates of urban growth, variability in settlement processes, direct use of natural resources, and complexity of the urban-rural system (Friedmann, 2005).
In order to address these issues, the present study employs a scenario approach. In fact, scenario analysis methods, as previously stated, are particularly useful in anticipating and shaping the future of highly uncertain and difficult to control situations (Peterson et al., 2003), and are increasingly used to support adaptation planning.
In this report, the term "scenario analysis" refers to a set of methodologies through which plausible stories and images of the future (scenarios) are built and used to inform decision-making and planning in a wide range of organizational and policy making contexts (Shoemaker, 1995; Chermack et al., 2001).
The field of future studies encompasses a variety of techniques for scenario development that differ widely in terms of objective, method, content, and “philosophical” approach. In particular, within the literature on future studies, two major areas of research on scenario analysis can be distinguished that correspond to two different scenario-building approaches (Van Notten et al., 2003; Börjeson et al., 2006):

- the forecasting approach (exploratory scenario: What could happen?);
- the backcasting approach (normative scenario: How can a specific target be reached?).

The forecasting approach originates in the strategic planning field. Within this approach, scenario analysis articulates plausible future societal developments, explores pathways from the present to the future, and postulates possible consequences of a given phenomenon. It can be used as a learning process aimed at understanding problem boundaries, key trends and drivers, and exploring the implications that arise from the application of long-term strategies. The forecasting approach has played a dominant role in informing climate change impacts and vulnerability assessments for adaptation, especially at the national and regional levels (e.g. SRES scenarios, socio-economic scenarios, down-scaled climatic scenarios) (Swart et al., 2004). The conceptual framework of the forecasting scenario approach applied to adaptation planning is shown in Figure 2.
The backcasting approach originates in the field of energy studies and can currently be placed within the sphere of sustainability planning. Within this approach, scenario analysis involves the development of desirable future visions, and then looks backwards from that future to the present in order to individuate the strategies and actions, including system change actions, for achieving that future (Dreborg, 1996; Vergragt and Quist, 2011). Although the backcasting approach has recently achieved prominence in transition management studies, in terms of technological (Rotmans et al., 2001) and urban transition (“Transition Towns”) (Hopkins, 2008), its use in adaptation planning has not yet been widely experimented. A recent evolution of this approach is participatory backcasting (Robinson, 2003; Quist and Vergragt, 2006), which is based on the involvement of different stakeholders in creating the future vision and developing future-present pathways. The conceptual framework of the backcasting scenario approach applied to adaptation planning is shown in Figure 3.

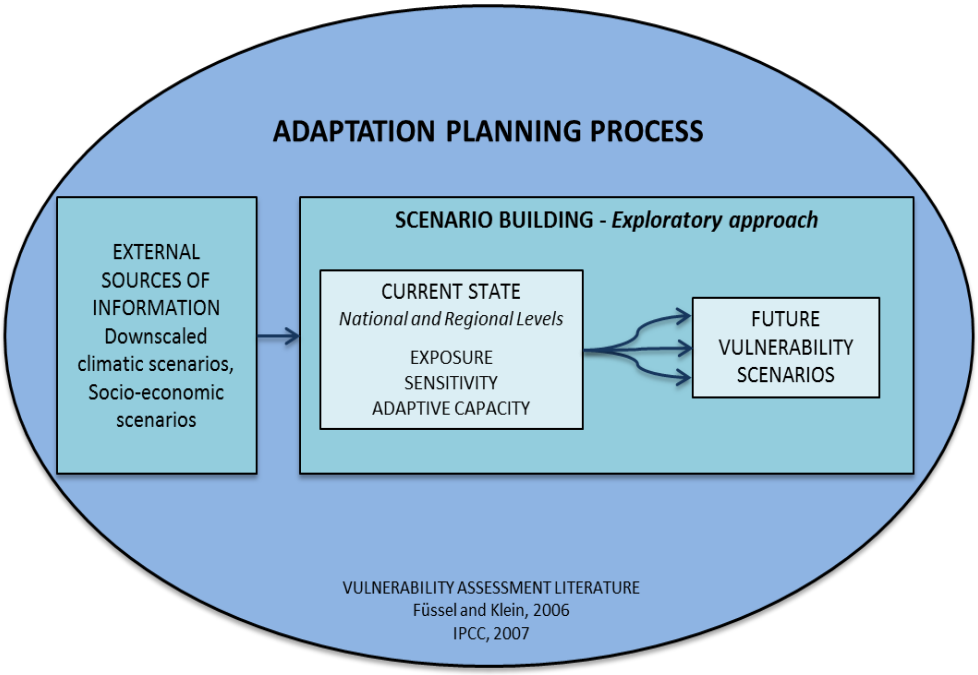

Figure 2 - Conceptual framework for adaptation planning: the forecasting approach

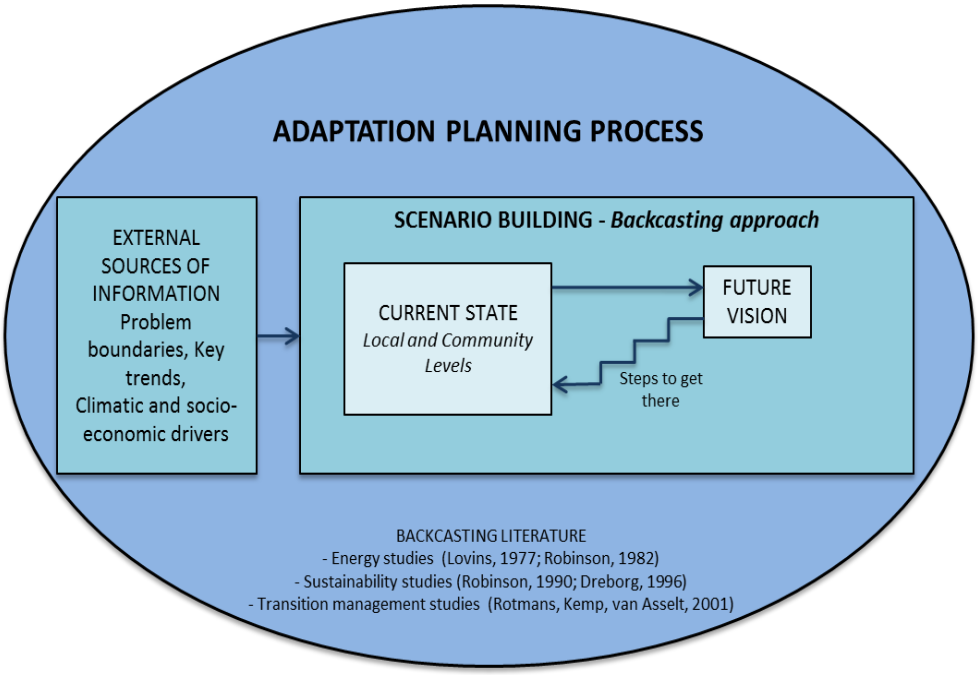

Figure 3 - Conceptual framework for adaptation planning: the backcasting approach

The forecasting and the backcasting approaches exemplify two different conceptions of the value of the future and related uncertainties in relation to the present state of people's vulnerability.
In order to identify which scenario-building approach is more suitable to support adaptation planning at the community level and, consequently, more suitable to be used in the development of the scenario methodology to be tested in a selected coastal peri-urban area of Dar es Salaam, the two main scenario building approaches were evaluated in relation to their capacity to promote a transformative process. Table 1 summarized the main differences between the two approaches.

Table 1 - Forecasting vs. Backcasting Scenario Building Approaches

FORECASTING APPROACH **Exploratory scenario** **(*What could happen?*)**	**BACKCASTING APPROACH** **Normative scenario** **(*How can a specific target be reached?*)**
Dominant role in informing CC impacts and vulnerability assessments for adaptation, especially at the national and regional levels	Its use in adaptation planning has not yet been widely experimented
Articulate different plausible societal developments Explore present-future pathways and possible societal consequences of a given phenomenon Understand problem boundaries, key trends and drivers	Generate desirable future visions Explore future-present pathways Individuate strategies, including system change actions, for achieving the desired future
The future, though uncertain, is strongly influenced by current mechanisms Vulnerability is considered an intrinsic individual characteristic that heavily influences an individual's future trajectory Not suitable to support transformative planning processes, as it is based on dominant trends that may not apply in a specific local context Generate conservative adaptation objectives, i.e. extrapolated from the present conditions of vulnerability	The future is envisioned as a utopia, a desirable horizon beyond the current situation Vulnerability is considered a contextual characteristic, determined by the complex system of relationships that the individual develops with society and the environment Suitable to support transformative planning processes, as it considers the present as just a starting state, thus detaching from the current drivers of vulnerability Can generate potentially transformative adaptation objectives
More suitable for the investigation of path-dependent systems, such as biophysical ones	More suitable for addressing decision-making when faced with highly uncertain systems whose trajectories depends on human choice

In the forecasting approach, the future, though uncertain, is heavily influenced by present mechanisms. Through the use of this approach, it is therefore possible to recognize the dynamics and relationships between different pressures on the system, as well as the boundary conditions of the problem under study. However, this approach is not suitable for supporting transformative planning processes or defining adaptation objectives at the community level, for several reasons. Firstly, it is based on dominant trends that may not apply in a specific local context. Secondly, the adaptation objectives that would result from its use in the planning process would necessarily be conservative, i.e. extrapolated from present vulnerability conditions. In fact, in the forecasting approach, vulnerability is considered an intrinsic individual characteristic that heavily influences that person's future trajectory, leading to the rejection of any possibility of changing the very mechanism that reproduces it. This approach appears to be more suitable for the investigation of path-dependent systems, such as biophysical ones. In fact, despite the uncertainty surrounding future pressure factors, biophysical systems exhibit a degree of structural consistency over time that is sufficient for defining plausible hypotheses of future behavior.
On the other hand, in the backcasting approach, vulnerability is considered a contextual characteristic, determined by the complex system of relationships that the individual develops with society and the environment. Due to the unpredictability of future vulnerability and people's legitimate expectations for change, the future is envisioned as a utopia, a desirable horizon beyond the current situation. By considering the present as a starting state from which to achieve a desirable future, and thus detaching from the current drivers of vulnerability, this approach can combine the development of successful long-term climate adaptation strategies at the community level with the promotion of a

systemic societal transition towards sustainability targets. In fact, the use of the backcasting approach seems more suitable for addressing the problem of decision-making when faced with highly uncertain systems whose trajectory depends on human choice.

Given these reflections on the role and implications of the use scenario analysis for adaptation, the backcasting approach has been selected as the most suitable to be used, pursuant to the hypothesis that it could best contribute to the identification of transformative systemic projects oriented to sustainability and framed in the adaptation planning process.
Moreover, in order to introduce community aspirations for change into the adaptation planning process, and in order to facilitate generation of ideas and an expansion of perspectives on the issue of access to water, researchers promoted direct participation of the community during the entire process, with reference to the methodological procedures of participatory backcasting and using TO as method of participation.
The main theoretical and methodological components of participatory backcasting and the TO method are briefly presented below, as well as the reasons their use was considered opportune. The conceptual framework of the scenario methodology applied in the selected local context, as well as the various phases of the study, are described in subsequent sections.

2.2. Participatory Backcasting

In this section the main theoretical and methodological features of Participatory Backcasting are described, as well as the historical context from which it emerged. Aspects in which participatory backcasting can support local CC adaptation planning are also highlighted.
Backcasting literally means looking back from the future (Quist et al., 2013). Vergragt and Quist (2011) define backcasting as “generating a desirable future, and then looking backwards from that future to the present in order to strategize and to plan how it could be achieved" (pp. 747). It is a scenario approach that involves the exploration of normative and desirable future visions, which define the goal to be achieved through the development of agendas, strategies and pathways.
The backcasting approach was originally developed during the 70’s in the field of energy studies, where it was experimented by researchers (Lovins, 1977; Robinson, 1990) seeking to define soft energy paths aimed at reducing energy consumption and introducing decentralized renewable technologies in a specific context. Such paths were hoped to replace the dominant energy practices of the time, based on large-scale centralized electricity production and use of nuclear energy (Quist, 2013).
During the '90s, backcasting was introduced into the broad sphere of sustainability planning, where it was applied in Sweden, Canada, and the Netherlands in many fields of study, including sustainable transportation and mobility (Höjer and Mattsson, 2000), river basin management (Robinson, 2003), sustainable technologies and sustainable system innovations (Vergragt and Jansen, 1993), sustainable households (Quist et al., 2001), climate policy options for preventing climate change (Van de Kerkhof et al., 2002), urban and rural land-use futures (Carlsson- Kanyama et al., 2008; Kok et al., 2006), and sustainable management of private organizations (e.g., IKEA) (Holmberg, 1998).
It was from this context that participatory backcasting later emerged. In fact, many of the above-mentioned backcasting sustainability studies entailed the involvement of various stakeholders (companies, research institutions, government, public interest groups, the general public) in creating the future vision and developing future-present pathways. Although many participatory backcasting studies involved expert stakeholders, direct involvement of citizens also occurred (Quist et al., 2013). For example, in the Netherlands participatory backcasting was applied to the government program for “Sustainable Technology Development (STD)" (1993-2001) and to the project "Strategies towards the Sustainable Household (Sunhouse)" (1998-2000), which widely involved societal stakeholders such as consumer associations and environmental organization, as well as consumers/citizens (Quist and Vergragt, 2006; Quist et al., 2013). The direct involvement of citizens in vision development was also present in other projects that targeted sustainable urban planning (Carlsson-Kanyama et al., 2007) and the development of sustainable energy futures in Canada (Robinson et al., 2011).
The backcasting literature reflects a great variety of ways in which participatory backcasting can be achieved. This depends on the degree (high, moderate or low) and manner (workshops, creativity, and discussion tools) in which participation is fostered, on the type of methodology (number of visions developed, number and typology of methodological steps) and tools used in the process (participatory,

design, analytical, management coordination, communication tools), on the specific issue and level addressed (national, regional, local), as well as on the type of goals of the exercise (Quist, 2013).
As suggested by Quist (2013: 756), possible goals for backcasting studies include:

- Defining desirable visions or normative scenarios that can be reference targets in societal and political arenas;
- Developing action agenda, strategies and action plan that could lead to the achievement of desired images;
- Stakeholder awareness and learning about the issue addressed;
- Stakeholder support and commitment with respect to vision, design, and follow-up agenda.

Moreover, Quist (2007; 2013), in his detailed work on backcasting methodological procedures and the impacts of backcasting projects applied in the Netherlands, highlights the key theoretical elements of participatory backcasting:

1. Stakeholder involvement and dialogue;
2. Participatory generation of desirable future visions;
3. Stakeholder learning through interaction, vision development and vision assessment.

Stakeholder involvement in the backcasting exercise can increase legitimacy and accountability for the decision and the related action plans, as well as the deepening of the topic under consideration (Quist, 2007). Moreover, "stakeholders are experts in their own field and this expertise is necessary for structuring the problem and finding possible solutions [… They] are also needed and indispensable for putting solutions into practice, as many system innovations towards sustainability require active contributions from government, companies, research bodies and public interest groups" (ibid, pp. 48).
In the backcasting approach, the vision is considered as a guide image to tend towards. It represents not just an analytical construction but also a social construction (Quist, 2007). In fact, a "future vision can be seen as a shared multi-actor construction that may have the potential to guide actor behavior, especially if generated in a participatory or collective process" (ibid, pp. 33). It therefore represents an attractive collective projection that, by focusing on the aspirations of the community, has the capacity to orient choices towards a shared goal, acting as activator and motivator (Dierkes et al., 1996).
Another important element in a participatory backcasting exercise is conceptual actor learning. Indeed, "social interaction between actors and negotiations can lead to learning processes not only on the cognitive level, but also with respect to values, attitudes and underlying convictions. The latter is also known as 'higher order learning[1]'" (Quist and Vergragt, 2006, pp. 1035).

As regards the use of participatory backcasting in CC-related studies, it has not yet been widely experimented, especially in the case of adaptation planning[2]. However, some features of participatory backcasting seem to have good potential in terms of supporting communities and local authorities in the definition of socially shared adaptation objectives, alternative livelihoods, potential agents of development and possible systemic transformative actions (Figure 4).
In particular, the creation of a community vision for future development (or multiple visions ordered according to desirability) facilitates the definition of socially shared adaptation objectives, rather than extrapolating them from a context-neutral vulnerability assessment. In so doing, objectives are identified by maintaining a systemic perspective when considering the key features of natural and human systems and the different ways in which climate change can impact them. Community involvement in vision development fosters social learning, thus broadening the space for actions that incorporate different contextual values and preferences, and for the research on alternative livelihoods and potential agents of change. By flexibly connecting future objectives with adaptation actions to be undertaken in the present, the development of future-present pathways highlights the need for system transformative actions.

[1] Quist (2007: 45) distinguishes first order learning from second (or higher) order learning: "First order learning is related to new insights among the actors involved into 'facts' and the expectations concerning a specific topic. Second order learning is related to gaining new insights into relationships between causal and normative reasoning, resulting in changes in norms and belief systems (or background theories) that guide stakeholders' behavior and perception of the topic or problem concerned".
[2] One example of backcasting as applied to CC adaptation strategy design can be found in van der Voorn et al. (2012). Researchers tested the combined use of backcasting and Adaptive Management when developing adaptive strategies for the Breede-Overberg coastal region in South Africa. In addition, Giddens (2009) has suggested the use of backcasting as a possible alternative to traditional planning, as it allows for progress toward alternative futures when dealing with CC.

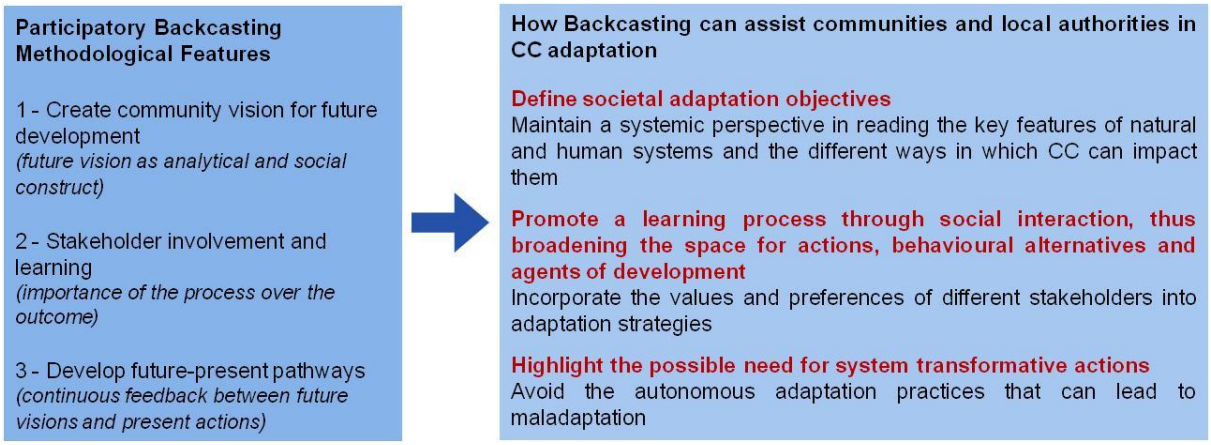

Figure 4 - Aspects in which participatory backcasting can support local CC adaptation planning

2.3. Participatory Theatre: the Theatre of the Oppressed Method

In this section, the main theoretical and methodological components of the Theatre of the Oppressed (TO) method are presented, including the present definition as well as its historical evolution. Justification for using this Participatory Theatre method in the scenario exercise is also offered.

Participatory Theatre is a general term that includes all the participatory approaches that make use of dramatization to involve people in participation. Among these, the TO method is generally considered the most important (Malcor, 2011).

TO is a set of tools aimed at allowing people to bring their everyday issues on stage. By involving the audience in a collective search for solutions, people can try out the transformations that they would like to implement in order to overcome oppression, first on the stage and then in their real lives. The main technique within TO is Forum Theatre. Other techniques include Image Theatre, Invisible Theatre and Legislative Theatre (Malcor, 2011).

Augusto Boal, a theatre director from Sao Paolo and the inventor of TO method, attributes the birth of the TO to two main events (Boal, 1992; 1995). The first occurred in 1967 in northern Brazil, when Boal was directing a play that encouraged rebellion against landowners. Actors sang about their readiness to shed blood for the revolution. At the end of the performance a peasant congratulated Boal and invited him to actually attack several landowners who had just stolen land from some local peasants. Although the play had just suggested exactly this, Boal was uncomfortable. He explained to the peasant that, as he didn't know how to use a weapon, he wouldn't be of great help. The peasants answered: "so the blood that has to be shed is ours, not yours". From this very embarrassing event, in which Boal understood that classical theatre, political propaganda and education often tend to lecture people from an outside perspective, a new form of theatre was born: the **simultaneous dramaturgy**, where the audience is allowed to make suggestions and propose solutions to actors during the play.

The second event occurred in Peru, 1973. During a simultaneous dramaturgy on gender issues, actors didn't understand what a woman in the audience was asking them to do. After she explained three times without being understood, she decided to come on the stage and act it out herself[3]. Boal then understood that it is not enough to propose a solution; it has to actually be tried on stage. Moreover, through actors' improvisations, the consequences of an intervention can also be explored, and the audience can then decide whether the proposal is realistic and, if so, how to implement it (Boal, 1992). So, a new form of dramaturgy was born: the **Forum Theatre**, a technique within the TO method, where people test their ideas through acting.

Over the past 40 years, TO techniques have evolved and expanded in response to various historical and political events.

The main characteristic of TO is that it enables people to bring their issues to the stage and to rehearse the changes that may help them overcome oppression. According to Boal's perspective, oppression is "a concrete relation between individuals who belong to different social groups. It is a

[3] In this particular case, in order to face the problem shown in the stage, the solution proposed by the women was to beat the husband who was cheating his wife (Boal, 1992).

relation that benefits one group to the detriment of the other" (Fritz, 2013). He notes that anywhere in the world, even when he doesn't understand a single word of the local language, three types of oppression are always evident: oppression of women, of workers and of foreigners.
One of the most important TO techniques for understanding oppression is the **Image Theatre**. In the Image Theatre, people sculpt bodies to express complex oppressive situations in a search for a physical understanding of the issues, the power structures underlying them, and the possible solutions. As all the TO tools, Image Theatre studies the structural dimension of individual stories, and attempts to link an individual problem with the system of oppression underlying it. It is thus a useful tool for identifying oppression and building scenarios, unrestrained by linguistic limitations, and it allows participants to communicate very clearly about an issue through use of the body.
Another important TO tool is **Invisible Theatre**, which was invented by Boal during the military dictatorships in Latin America (1964 and 1968 in Brazil, 1976 in Argentina). With this technique, a play is prepared and then acted in a crowded public place without anybody knowing theatre is happening. The goal is to foster political change without being subjected to censorship.
Another form of TO is **Legislative Theatre**, developed by Boal upon his return to Brazil from exile in Europe, after which he was elected to the legislative chamber in Rio de Janeiro in 1992. This technique allows participants to create laws through theatre: during and after the forum play, inspired by the interventions in the forum, people propose laws on specific issues. Boal has presented numerous laws in Parliament that were originally developed using this technique, and 13 of them were approved.
Boal developed many other TO tools were developed in response to the political context, including newspaper theatre, rainbow of desire, and aesthetic of the oppressed. All aim to allow people to express oppression aesthetically and to rehearse solutions.
Of all the TO tools, **Forum Theatre** (FT) is the most well known and the one that has produced the most concrete results. It consists of staging a situation considered to be oppressive (framed in such a way that it could happen to anybody), in which the mechanisms and characters that create that oppression are specifically showcased (Malcor, 2011). In a forum play, the audience first sees a pre-rehearsed play, which necessarily has an unhappy end. After seeing the play a first time, a facilitator, called **the joker**, opens a debate with the audience. His goal is to foster **coscientizaçao**, conscientiousness, by asking questions and helping the audience to create a critical mass of information that will allow them to change the story. Once the audience is activated through games and short debate, the play starts a second time and anybody can stop it to step in and intervene. The **Spect-actor** – the spectator who becomes an actor – acts the role of the oppressed to show what he would do to change the situation. The audience, prompted by "insolent" questions from the joker, analyze each intervention in order to identify the best solutions, options or alternatives to tackle or avoid oppression. The joker challenges the audience, questions solutions that are too easy, stimulates research and triggers the desire to transfer the strategies tried on stage into real life. He helps people to organize, facilitates the passage from thoughts to action, and from action to group reflection, in order to achieve collective change.
An essential aspect of TO is that the audience is sovereign. Members of the community choose the issue to be addressed during workshops, and then decide all together what solutions are possible. The joker helps to frame the question and orient discussion, but has no real control. When done correctly, TO gives full power to the audience, who will grasp the rules of the game very quickly and work hard to get results. If they feel that the joker is in control and is making decisions for them, they become passive or rebel against the process.

TO was chosen as a method of participation for the present scenario exercise because it has proven in various studies to be a very powerful tool for energizing large audiences, increasing knowledge and awareness of environmental risks, strengthening coalitions, building community action agendas and developing community advocacy skills.
For example, Sullivan and Lloyd (2006) carried out a community-based participatory study involving several communities living in the Texas petrochemical belt, a very polluted area of the USA. Using the Community Environmental Forum Theatre Process (CEFT), an approach that integrates the dramaturgy of Augusto Boal's Theatre of the Oppressed into the design and implementation of environmental health research, community health care and education, researchers were able to combine scientific information about environmental dangers with no less important information from the community about risk perception, beliefs and attitudes towards the scientific world. This collaborative approach is now used on a regular basis by the National Institute of Environmental Health Sciences Center in Environmental Toxicology at the University of Texas Medical Branch/Galveston TX.

Use of TO as a method of participation in the present scenario exercise was also prompted by the need for continuity with respect to the work previously done in two other participatory activities of the ACC Dar project, where TO was used as a research method.
The first of these was the feasibility study, performed in 2011 at Ardhi University and in the Mtongani area, conducted to assess community members' interest in TO as a method of participation in CC studies (Malcor, 2011). Results suggested that TO could be a suitable tool for exploring people's concerns about CC related issues and understanding their everyday strategies for adapting to climate change. In fact, TO proved to be an excellent tool for obtaining complex information in a very short time, testing hypotheses and supporting or contradicting the results of previous research. Moreover, by involving many members of the Mtongani community, where a FT event was carried out, TO also allowed communities to address complex issues around the relationship between CC and water resources, which gave them the opportunity to build and share knowledge.
The use of TO as a method of research was further analyzed in the participatory activity carried out in 2012, which sought to contribute to the development of knowledge on CC adaptation issues and people's autonomous strategies for adapting to CC, in particular as regards access to water in the Mtongani area and access to land in the Kigamboni area (Loddoni, 2012). In this activity, TO proved once again to be a useful tool for verifying hypotheses drawn from previous studies of the project, collecting information on dimensions which emerged as critical for livelihood strategies, raising awareness on CC issues among inhabitants and helping people discuss critical topics in a collective way, by sharing ideas and experiences (Loddoni, 2012). Moreover, some reflections and criticalities emerged from this activity, in particular with regard to the structuring of a clearly defined and inclusive context for interaction (in terms of both the objectives and the results of the activity) and the construction of a space for debate/exploration able to more critically problematize the characters and their roles (Loddoni, 2012).
The experience gained in these activities represents an important knowledge base, upon which the present activity was based.

2.4. Backcasting Scenario Methodology: combining Participatory Backcasting with the TO Method

This section presents the conceptual framework of the participatory methodology for building scenarios, applied to a scenario exercise in a specific area of Dar es Salaam, in order to explore the population's aspirations and proposals for accessing water, and to channel this information into adaptation planning at the community level.
The methodology makes reference to the conceptual model of participatory backcasting, introducing into it some variations correlated with the use of TO as a method of participation.
Assuming that people's aspiration should inform adaptation planning, the core idea of the methodology is to begin the process by defining the community's shared future vision regarding access to water, to then look backwards from that future to the present situation in order to identify the challenges that might arise as they work towards achieving that vision, and finally to identify strategies and actions for overcoming those challenges and achieving the desired future. The conceptual framework of the developed scenario methodology is shown in Figure 5.
Following this conceptual framework, the methodology seeks to meet several types of purpose:

- *Target-oriented purpose*: generate a shared target regarding access to water, expressed in the vision of a desired future.
  This allows adaptation objectives to be focused on community aspirations.
- *Knowledge-oriented purpose*: understand the aspirations of the community, the problems and obstacles to meeting its needs, as well as its current capacity.
  This allows information to be extrapolated that is useful in designing adaptation strategies at the community level.
- *Action-oriented purpose*: bring out and share possible community strategies, plans, and actions able to overcome obstacles and meet aspirations.
  This highlights the autonomous adaptation practices already adopted (or planned) in the community, so that institutional initiatives are aimed at encouraging and supporting such practices when these prove to be positive and sustainable, and, conversely, at avoiding maladaptive practices.

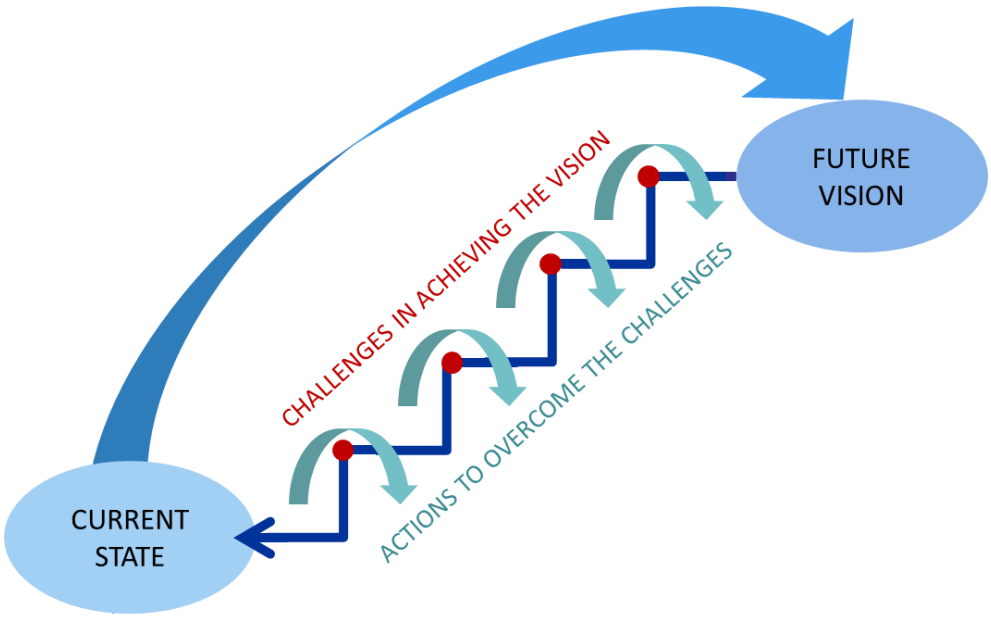

Figure 5 - Conceptual framework of the participatory backcasting methodology developed through the TO method

In addition to these purposes, which configure a typology of backcasting approach that Wangel (2011) defines as *result-oriented backcasting*, it is possible to add a fourth category of purposes linked to the importance that is conferred to the process itself and made explicit by the use of the TO as a method of participation. This *process-oriented* purpose corresponds to the interest in developing and testing a different type of participatory process than that typically used in Tanzania (O&OD). To that end, the methodology used in the present case was assessed in terms of its ability to overcome the inherent limitations of the O&OD method and promote community social awareness and learning on the relationship between access to water and climatic or non-climatic factors. In this respect, the scenario exercise can be considered an inclusive platform where it is possible to build and share knowledge and experiences between the community.

2.5. Phases of the Study

The study progressed through three phases, as shown in Figure 6.

Preliminary Activities

Two sets of criteria were used in selecting the study area and the community members to be involved.

Criteria for area selection:

- location in Dar es Salaam's coastal plain;
- presence of a mixed urban-rural settlement fabric, with family-run agricultural activities;
- presence of emerging environmental issues related to access to water, due, in particular, to increasing coastal aquifer salinization, caused by seawater intrusion and anthropogenic pollution;
- increasing use of groundwater as main source of water supply for inhabitants;
- presence of a community center interested in developing TO skills.

As regards participants' selection, criteria were set such that participants would be representative of the socio-economic composition of the community:

- age - from 18 to 35 years;
- gender - same number of men and women;
- Mtaa of residence - equally distributed in the selected ward;
- level of education - from primary school to high school;

- family's income - from low to high, as compared to the average income in the selected ward;
- type of economic household activity conducted - agriculture, fishing or small "informal" businesses;
- involvement in community social activities and previous experience in artistic activities (theater in particular).

The last criterion of selection was considered in order to capitalize on the community's associative capacity.

Execution of the Scenario Exercise

The scenario exercise was essential in order to fine-tune the proposed methodology and test its applicability within the selected area. After defining the structure of the scenario exercise, the different steps of the methodology were implemented, during which a variety of tools were used in order to determine which were most suitable for specific methodological steps. During implementation, several adjustments were also introduced. Moreover, knowledge of the community's aspirations, challenges and proposals for accessing water, was drawn from the various scenario exercise phases.

Assessment of the Developed Scenario Methodology

Once the exercise concluded, the scenario methodology applied in the case study was assessed with respect to different aspects and capacities of the developed participatory processes:

- capacity to facilitate participation;
- capacity to foster awareness and social learning;
- capacity to provide knowledge for local adaptation planning;
- capacity to support future projects, in terms of targets and actions;
- applicability in the context.

The assessment was performed through a SWOT analysis, which highlights the strengths and weaknesses of the developed methodology, as well as the external conditions that represent an opportunity or a threat to the development of this type of participatory process.

This evaluation was based on a literature review, observations of the process, and the gathering of opinions from people who participated in the scenario exercise through semi-structured interviews executed during different phases of the process.

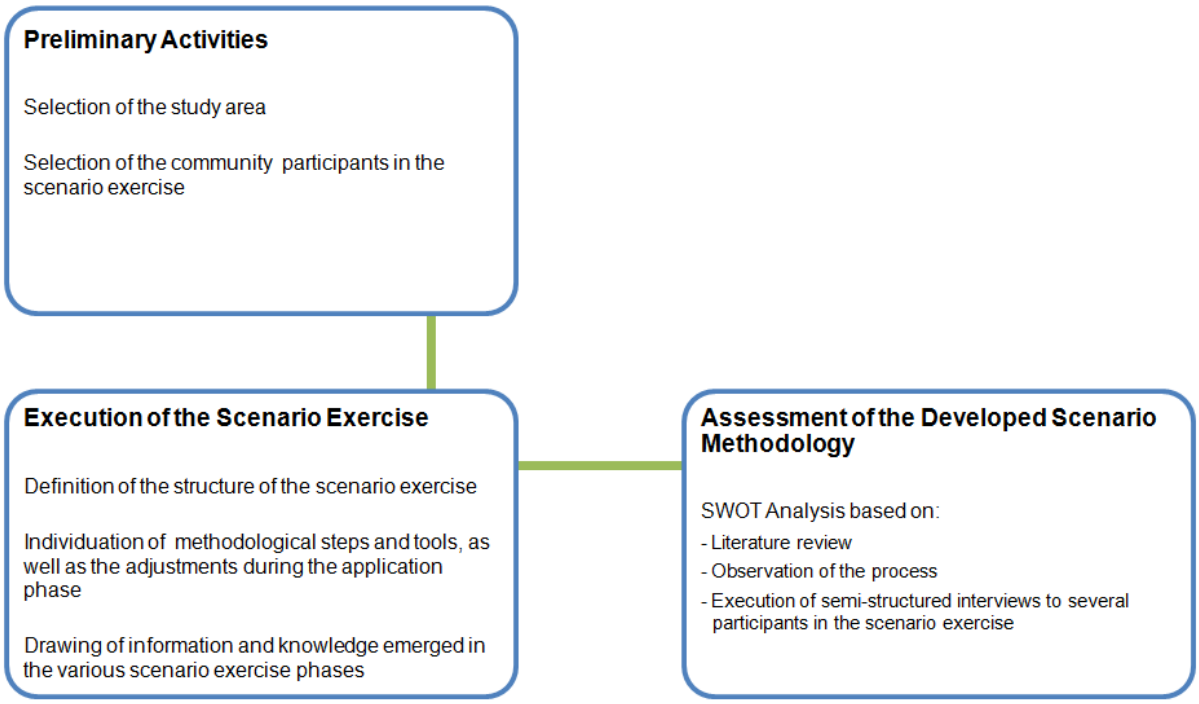

Figure 6 - Activity Workflow

3. Findings

The overall findings consist in the following:

- A participatory methodology for building scenarios has been developed, based on the conceptual model of participatory backcasting and use of the Theatre of the Oppressed (TO) as a method of participation.
  A detailed description of how the methodology was applied in the study area is provided below, including the overall structure of the scenario exercise and the specific steps entailed therein. Adjustments adopted during the application phase are also addressed.

- The community's aspirations as regards access to water, as well as the potential obstacles and conflicts they anticipate in this respect and their proposals for overcoming them have been identified.
  A detailed description of the information and knowledge acquired throughout various phases of the scenario exercise is provided below.

- The scenario methodology applied in the case study has been assessed in detail.
  Discussion of the strengths and weaknesses of the developed methodology, and the external conditions that represent an opportunity or a threat to the development of this type of participatory process, is provided below. Potential improvements for future applications of the methodology are proposed.

3.1. Application of the proposed methodology in the Kigamboni ward

Following an overview of the study area, the methodology developed in the present case study is described below in detail, both as regards the structure and organization of the scenario exercise and the specific steps entailed therein. Adjustments adopted during the application phase are also addressed.

3.1.1. The Study Area: Kigamboni, Temeke

The study area selected for the scenario exercise is located in the Kigamboni ward of the Temeke municipality (Figure 7). This area was selected because it met all the selection criteria (see Sec. 2.5).

Kigamboni is situated in the coastal plain immediately south of the Dar es Salaam city center, though it is physically separated from the center by the Magagoni Creek, which currently represents the boundary of urban development. Kigamboni consists of a mixed rural-urban settlement fabric, and can be considered the "entrance" to the entire peri-urban area that extends south along the only main coastal road in the Temeke district.

As regards access to water, Kigamboni presents several problematic aspects that render it appropriate for the development of the scenario activity. These aspects depend on numerous and tightly interconnected factors, including:

- the absence of a municipal hydro system;
- water supply drawn predominantly from groundwater (community and private wells) and purchase at moderately elevated prices (above the city average) from street vendors or from other areas of the city (at least 2-3 kilometers away);
- increasing salinization of the coastal aquifer, caused by seawater intrusion and anthropogenic pollution (absence of sewer system).

An additional factor that influenced the selection of Kigamboni as the study area for the present exercise was its involvement in previous activities of the ACC Dar project (Loddoni, 2012).

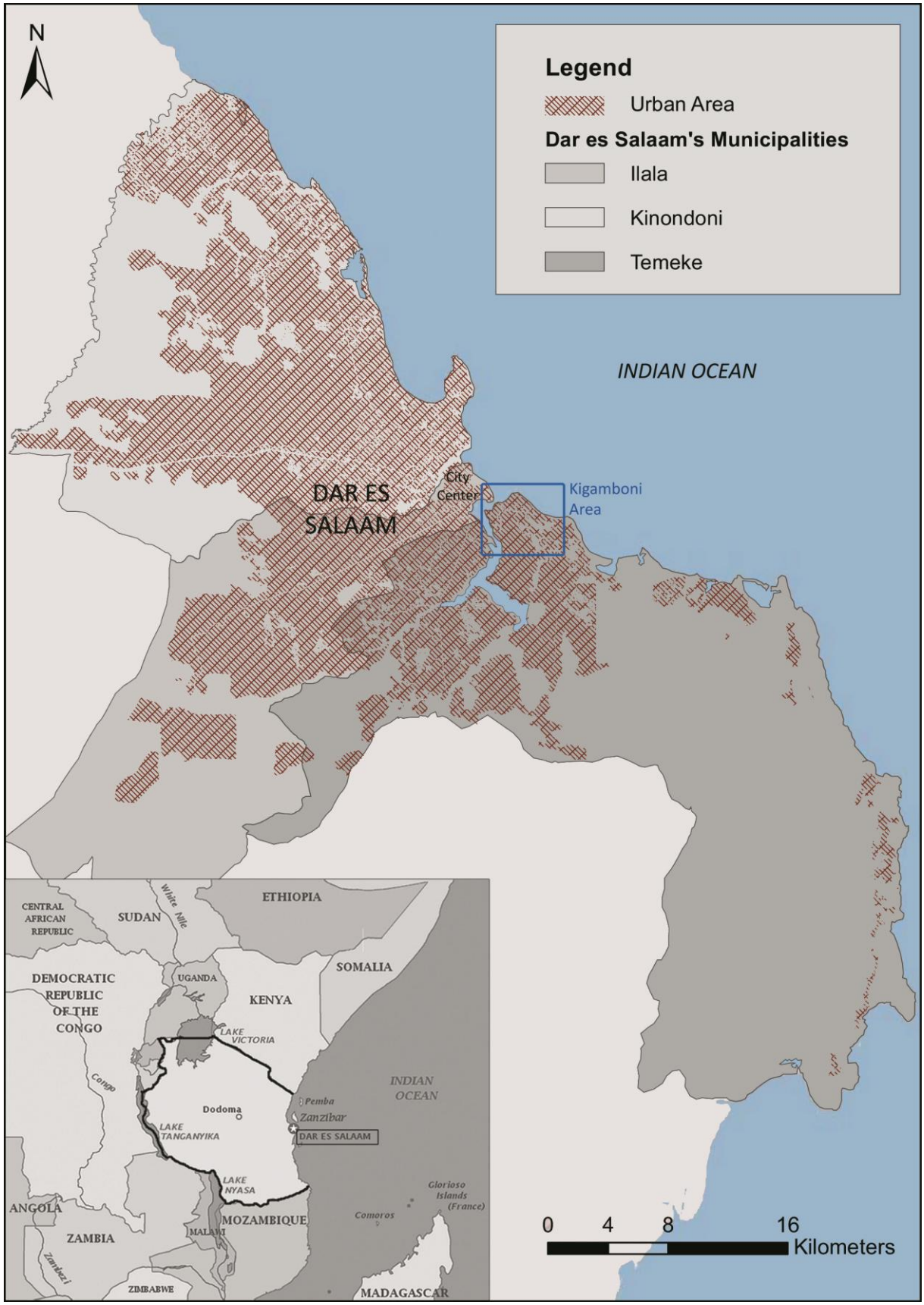

Figure 7 - Location of the Kigamboni area in the Dar es Salaam Region

3.1.2. Structure of the scenario exercise

Drawing on the methodological framework described in 2.4, the methodology was organized into 4 consecutive steps, which were developed through the execution of a two-phase scenario exercise (Table 2). The scenario exercise was carried out in September 2013, mainly in the Kigamboni ward (Temeke municipality), though it also involved a few other locations in the Kunduchi and Somangira wards (belonging respectively to the Kinondoni and Temeke municipalities).

Table 2 - Phases of the scenario exercise

Scenario Exercise Phase	Step of the Scenario Methodology
Community Scenario Workshop	1. Development of a shared vision of future access to water
	2. Identification of the challenges in achieving that vision
FT Sessions	3. Preparation of a theatrical representation that stages the vision and related challenges
	4. Search for alternative actions and strategies to overcome challenges

Community Scenario Workshop

In the first phase of the scenario exercise, a five-day Community Workshop was conducted in the Kigamboni ward, from 9 to 13 September 2013.

The activities carried out during this phase corresponded primarily to Steps 1 and 2 of the methodology: the development of a shared vision of future access to water, and the staging of different stories that identify problems, obstacles and challenges to achieving that vision. Other activities were also carried out during the workshop, including introduction of the TO method to the workshop participants (and refreshment for those who participated in the previous participatory activity within the ACC Dar project), training of the facilitator who led the following FT public events, and provision of technical information, if requested, on water resources in Dar es Salaam.

Workshop participants

The community scenario workshop involved a group of 24 youngsters[4] from various Mtaa within the Kigamboni ward. The group was composed of an equal number of men and women, aged between 18 and 33. Participant's levels of education and family income ranged, respectively, from primary to high school and from low to high (as compared with the average income in the Kigamboni ward). The main economic activity conducted by participants was family agriculture, though many were also involved in other activities, such as fishing, small "informal" businesses and other community activities.

Moreover, most of the participants collaborate with the Kigamboni Community Center (KCC), a non-profit organization deeply rooted in the community, which organizes social and economic activities that involve hundreds of community members on a daily basis (including community education and empowerment; talent development in drama, arts and dance; textile and handcraft activities[5]). Additionally, some of the participants at the workshop were already involved in the previous participatory activities within the ACC Dar project.

[4] Participants were informed of the purpose and method of the exercise before the beginning of the workshop, in order to make clear that the workshop was not an employment opportunity, but a research study that could entail several benefits for the community (such as theatrical skills, technical knowledge about water related issues, relational and advocacy skills). Only those who showed interested in the subject were selected to participate.

[5] More details can be found at: kccdar.com.

In addition to the team of Italian researchers (consisting of one TO expert and two Sapienza University researchers), 3 other individuals participated in the running of the workshop:

- a Tanzanian expert in participatory processes from Ardhi University, responsible for the organization of the activity;
- a Tanzanian facilitator from Club Wazo, the local theatre and dance company responsible for the artistic preparation and staging of the theatrical representation during the FT events, who was involved in the workshop in order to be trained in TO techniques.
- a young Tanzanian researcher from Ardhi University and expert in water management in Dar es Salaam, who provided information on water related issues if it was requested by participants.

Forum Theatre Sessions

In the second phase of the scenario exercise, the theatrical representation was prepared and 11 FT public events (2 shows per day) were performed, mainly in Kigamboni ward but partly in Kunduchi and Somangira wards, from 16 to 24 September 2013.

The activities carried out during this phase corresponded primarily to Steps 3 and 4 of the methodology: structuring a play made up of different scenes that showcase the vision and the challenges that emerged during the workshop, and collective exploration of possible actions to overcome the challenges presented in the show during the FT public events. During this phase, the training in FT of the local facilitator was also expanded.

The artistic creation and the staging of the show were entrusted to a local company of artists, Club Wazo, who created scenes on the basis of the workshop results (vision and challenges). The role of the joker in the FT performances was given to a member of the group, who had been trained in TO and FT techniques during the workshop and subsequent creation of the show.

The decision to engage a company of professional artists, rather than the workshop participants themselves, to conduct the FT public events was motivated by experiences gained during the TO activities carried out in 2012 (Loddoni, 2012). Although the workshop participants can sometimes show displeasure in seeing professional actors engaged to play issues they had previously discussed and acted (Loddoni, 2012), the use of professional actors ensures high quality in all parts of the artistic representation (drama, music, dance and facilitation), which facilitates the success of FT events[6]. The TO method insists on the fact that actors *do* theatre and normal people *are* theatre, and this was made clear to the workshop participants from the outset.

Performance Locations

The performance locations were chosen in collaboration with the workshop participants and with the permission of Mtaa leaders, who were invited to join and actively participate in the FT events.

The locations of all the public events held in the Dar es Salaam Region, and in Kigamboni ward specifically, are shown in Figure 8.

Given the specificity of the issues raised in the workshop, the show was mainly staged in the Kigamboni ward. In total, 8 FT events were performed in Kigamboni. Two locations (Tuamoyo Market and Tuamoyo Ground) were chosen because the performances held there in 2012 were great successes. In 2 areas (Ufokoni Primary School and Tuamoyo Ground), where community interest and participation in the event was particularly high, the show was replicated the following week in order to further explore new solutions that may have occurred to participants during the interim. This idea was inspired by the technique of the TO Indian group Jana Sanskriti, who usually performs each play 3 times in the same place (Ganguly, 2010).

Three additional FT events were carried out in the Kunduchi and Somangira wards. Two areas (Ununio and Somangira) were selected because of their similarity to Kigamboni in terms of environmental conditions (coastal areas with aquifer salinization problems), and modality of access to water (primarily from groundwater). The show was performed in these areas in order to verify the validity and reproducibility of the methodology, and to test the consistency of the issues represented (i.e. the vision for the future and the challenges that emerged as regards access to water). The third area (Bahari), which has a different predominant type of access to water (primarily from the municipal water supply system), the show was performed in order to highlight and understand the possible differences in terms of problems and collective action proposals.

[6] For example, in order to reach large audiences of 200-800 spectators, as in 2012, the actors need great skill and experience to be heard by the public. In addition, acting in front of one's own community can be embarrassing, as became evident during the FT events held in the Mtongani area in 2012 (Loddoni, 2012).

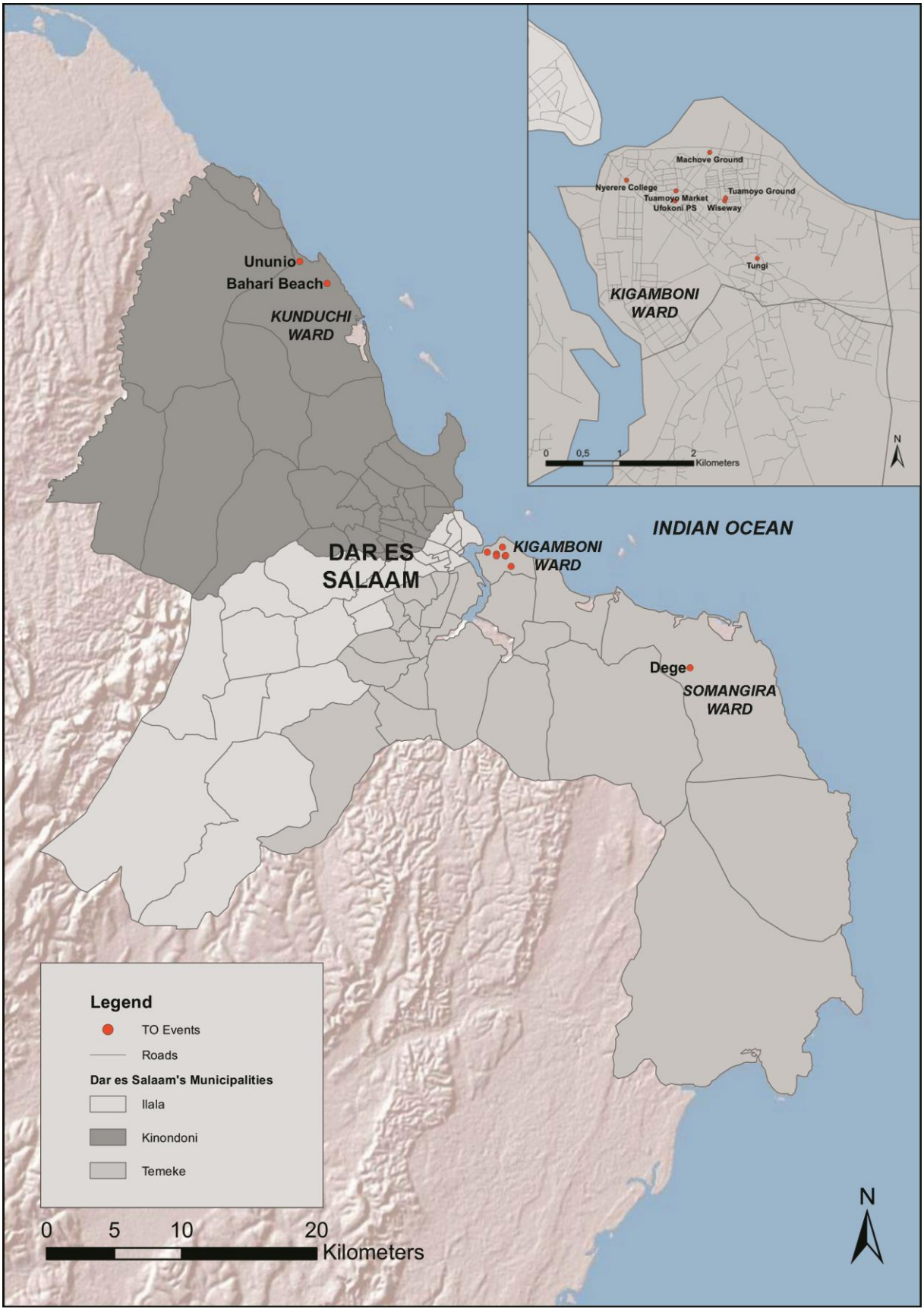

Figure 8 - Locations of public FT events

Community participation in FT public events
The average attendance at FT events was approximately 200 people per show. The number of participants in each FT session, which was likely influenced by the quality of the performance, the weather conditions and the location choice, varied from 50 participants to more than 300. In addition, many of the workshop participants were present as spectators during public events, participating actively within the FT session. In total, more than 2000 people were involved in the 11 performances.

3.1.3. Steps of the Scenario Methodology

This Section describes the structure and the main characteristics of the different steps and sub-steps in which the methodology was set up, the adjustments during the application phase, as well as the tools pertaining to the TO method, which were used during the participatory process carried out in Kigamboni. Table 3 shows the sub-steps of each 4 steps of the developed methodology, while Table 4 summarizes its main characteristics.

Table 3 - Steps and sub-steps of the scenario methodology

Steps of the Developed Scenario Methodology	Methodological Sub-steps
1. Development of a shared vision of future access to water	- *Team Building: execution and analysis of fun games, confidence games and strategy games* - *Introduction to the issue of access to water: understanding the present* - *Envisioning: expressing future aspirations*
2. Identification of the challenges in achieving the vision	- *Comparison between the present and the vision for the future* - *Identifying the challenges in achieving that vision*
3. Preparation of a theatrical representation that stages the vision and the challenges	- *Definition of the content and the structure of the story to be staged* - *Artistic creation of the play and aestheticization of the scenes*
4. Search for alternative actions and strategies to overcome challenges	- *Advertising the event* - *Presentation of the event* - *Forum Theatre*

Table 4 - Main characteristics of the scenario methodology applied in the Kigamboni area

Purpose	*Decision support* Decision support for designing adaptation strategies to be implemented at the community level. Purpose reflects a multiple orientation: target-oriented / knowledge-oriented / action-oriented / process-oriented	
Scenario Characteristics and Content	Inclusion of norms	*Normative* - Policy options and interventions are considered in the scenario analysis.
	Starting point of the storyline	*Future* - The methodology uses backward inference (backcasting approach).
	Number of storylines and temporal nature	One vision and multiple actions to overcome the challenges and achieve the vision (chain scenario).
	Time scale	*Undefined (long term goal)* - In the scenario analysis a specific time horizon is not defined. The vision is translated into a long-term goal but is positioned in a temporally indefinite future.
	Spatial scale	*Local* - Scenario analysis is performed in the Kigamboni area (Dar es Salaam).
	Subject	*Issue-based* - Scenario analysis focuses on the issue of access to water.
	Driving forces and Variables	*Heterogeneous* - Driving forces are internal, i.e. controllable to some extent by the community, and variables include diversified factors: social, political, economic and environmental.
Process Design	Type of data	*Qualitative* - The developed process heavily relies on qualitative knowledge (local knowledge system). Words, symbols, narratives, stories, and scenes are used in the scenario analysis.
	Method of data collection and integration	*Participatory method* - The developed process presupposes the use of creative techniques in which the interactive group work represents the central point: TO used as a method of participation (with the introduction of a phase of visioning).
	Stakeholder involvement	Active participation of the community during the entire process.

Step 1 Development of a shared vision of future access to water

The first step of the methodology concerns the definition of a shared vision regarding future access to water in the Kigamboni area. It was developed during the first and second day of the Community Scenario Workshop.

The process of vision development is a crucial element in the methodology, and, in general, in a backcasting exercise, as shown in Sec. 2.2 Therefore, it is worth analyzing how the TO method was adjusted to properly meet the need to start from the future rather than the present.

The idea to start the process with the definition of the vision of a desirable future implies a change of perspective in the TO method. In fact, as illustrated in Sec. 2.3, the TO method is more involved with everyday problems than with positive visions of the future, as it usually works on oppression. In order

to produce this change of perspective, it was necessary to make reference to some TO techniques that focuses on desired ideals, like the "image of happiness"(Boal, 1995), the "image of ideal" and the "image of the transition from oppression to ideal"(Boal, 1992), which are not usually used during an FT session, since a play has to demonstrate oppression and unsolved problems in order to trigger participation. In any case, before the beginning of the visioning process, it was considered appropriate to analyze the present condition of the community regarding access to water[7]. This activity, however, didn't require a thorough analysis of current oppression, which could influence the search for a shared ideal, but only an understanding of the starting state. In fact, in a backcasting exercise, the present is only considered an initial state from which to move towards a utopian horizon, a desirable future free from present constraints.
The process of defining a shared vision was divided into 3 consecutive methodological sub-steps, which involved the use of different TO tools. These are described below:

- *Team Building: execution and analysis of fun games, confidence games and strategy games*
  This sub-step was aimed at creating a tight-knit group among all the workshop participants, through the execution of different types of games[8], proposed by the facilitator (and sometimes by the participants themselves).
  Fun games and confidence games are exercises designed to create union among the participants, a sense of sharing and inclusion in the process[9].
  Strategy games are challenging exercises designed to stimulate people's creativity when finding solutions for a particular difficulty. In these games participants have to develop collective strategies to overcome a challenge, established by the facilitator[10].
  To prepare participants for the visioning exercise, all the games that had been executed were analyzed and discussed collectively in order to draw lessons from what had happened during the exercises. In fact, games allow relevant issues to be introduced and addressed in a direct and enjoyable way, such as the themes of leadership and power relations, the values of the community, or the importance and the strength of a shared strategy.

- *Introduction to the issue of access to water: understanding the present*
  This sub-step was aimed at understanding the starting state of the visioning process. It consisted in the execution of an exercise called "Times of the day or Image of the hour" (Boal, 1995), where participants had to mime activities relating to water, in which they are involved at a certain time of the day, by answering these leading questions: "*What do you do with water at 6 a.m.* (and other hours of the day)*?*", "*What type of water do you need at 6 a.m.* (and other hours of the day)*?*", "*How much water do you need at 6 a.m.* (and other hours of the day)*?*" In order to verify that there was general agreement among all participants, interpretations were discussed collectively.

[7] This was consistent with Freire (1994: 58): "you never get *there* by starting from *there*, you get *there* by starting from some *here*". This means that, in order to start a process with a community, the joker has to work somewhat on the *here* of the community, both for himself (to know where *he* is) and for the community (to agree on where *they* are).
[8] Games were, however, played at the beginning of each workshop day, regardless of what the methodological steps were for that day. In particular, strategy games were very much used throughout the workshop week, especially during the community vision-building phase, where great emphasis was set on how to reach an ideal shared strategy.
[9] For instance, 2 participants have to clap their hands at the same time, without an agreed signal. Then the whole group has to clap at the same time, and starts over every time that it is not synchronized. In a more physical version all have to start walking at the same time, and then stop walking all at the same time. This brings laughter when the group is not yet well connected, and great satisfaction when the group achieves harmony.
[10] For example, one game played during the Workshop consisted in crossing the room without touching the ground, by using 4 sheets of paper to avoid walking on the ground. Participants were divided into 2 groups of 13 people each. The first group whose members had all passed to the other side of the room without touching the ground would win. In this game, groups usually start screaming and taking action without organising. In this case, the strategies that emerge spontaneously are individualistic. For example, one person goes with 2 sheets and once on the other side he/she tries to figure out how to send the sheets back. But when the groups recognize that the individualistic strategies do not lead to victory, people stop screaming and moving and start organizing in a collective strategy, which is usually successful. For instance, in the Workshop, someone became responsible for helping people to pass and would quickly bring the sheets back to members of the group still waiting to pass.

- *Envisioning: showing future aspirations*
  This sub-step was at the core of the process for developing a shared vision. It consisted in the execution of various consequential visual activities, with the participants divided into 4 groups.
  Through the use of the Image Theatre technique, the first activity involved execution of an exercise in which the different groups were invited by the facilitator to create "human sculptures" (mute images constructed through the participants' physical interaction) depicting an image of their ideal access to water scenario, and then performing them for the other participants.
  Secondly, in order to detach themselves as much as possible from the present condition, participants were encouraged to "deepen" their imagination, to break free of present constraints and "dream up" the best possible future situation, by answering this leading question: "*What is your wildest dream as regards water?*" After another round of imagination deepening, the 4 groups were asked to create sculpture interpretations of their dreams for water access, and to represent them on stage for the other participants. The 4 visions were thus discussed collectively to determine which elements of the image were positive or negative.
  The third activity consisted in the execution of the exercise "Motivated Theft," in which each group was encouraged to "rob" elements from the other group's vision. After the revamped representations were performed once more, participants were invited to vote for the vision of the future that they most preferred. The most popular future scenario was represented on stage and then analyzed collectively, in order to refine it by introducing new elements if considered appropriate by the participants. In this way the final vision that emerged from the process appeared to be the most shared by all the participants.

Step 2 Identification of the challenges in achieving the vision

The second step of the methodology entailed the identification of obstacles and challenges that the community would need to address in order to achieve the previously defined shared vision of the future and thus satisfy their needs/desires. The community's current problems, resources and capacities were used as a starting point. This activity was carried out during the third, fourth and fifth days of the Community Scenario Workshop.
Compared to the "classic" conceptual model of backcasting, which attempts to directly identify the actions necessary to achieve the vision for the future, this step was introduced in the methodology because the TO method, by its nature, addresses oppression prior to beginning the search for actions.
The introduction of this step required some adjustments to the methodology regarding the relationship between everyday oppression and obstacles to achieving the shared vision, and the temporal dimension of the path toward the vision.
In this specific case, oppression manifested in the present was not considered. Only the obstacles that might arise in the course of attempting to achieve the vision were considered relevant for the process, assuming that, although obstacles are not oppression, they would reveal the power dynamics underlying the various challenges people face. The term challenge is used here to represent a set of obstacles of a similar nature; challenges could be political, economic, social, technical and environmental.
Moreover, the introduction of this methodological step required the reshaping of the temporal dimension of the path towards the vision. As TO encourages work on real everyday stories to prompt more involvement and guarantee the veracity of the issues addressed, the obstacles identified, even when situated in the future, always maintain a tension with the present situation because they are related to the current experiences, perceptions, and capacities of the community. Consequently, challenges (and obstacles) are placed in an atemporal dimension with respect to the achievement of the vision. The only possibility for temporality is therefore relative to other challenges existing in the same atemporal sphere. Namely, it is possible to define a path of challenges to overcome, but it is not possible to assign a specific temporality to that path.
This is why the time scale of the scenario exercise was not defined. The vision can be translated into a long-term goal, but is positioned in a temporally indefinite future. Only with the subsequent definition of the actions to overcome the challenges[11] it would be possible to identify a specific temporal dimension of the pathway towards the vision. In any case, the definition of a precise temporal program of follow-up activities was beyond the scope of this scenario exercise, which focused mainly on understanding the population's aspirations, problems and proposals for accessing water in order to introduce that information into adaptation planning at the community level.

[11] In fact, the dimension of the overcoming on obstacle implies a movement towards the future.

The process of identifying the challenges and obstacles the community will have to face to achieve their shared vision was divided into 2 consecutive methodological sub-steps, which are described below:

- *Comparison between the present and the vision*
  This sub-step, which was carried out at the beginning of the second step of the methodology, was aimed at highlighting in a direct and "impactful" way the differences between the vision developed in the previous step and the present conditions as regards access to water.
  Some of the participants were invited to represent the image of the vision on one side of the stage, and on the other side an image (agreed to by all participants) representing the current conditions, in terms of activities and issues related to water access and use.
  This representation allowed participants to visualize directly and clearly the difference and the gap between "where we want to go" and the "where we are".

- *Demonstrating the challenges to achieving the vision*
  This sub-step, which occupied the last 3 days of the workshop, was aimed at identifying the existing challenges to achieving the vision, and consisted in the representation of multiple scenes that depicted those obstacles.
  Participants, divided into 4 groups, were invited by the facilitator to create and represent on stage various scenes that answered these leading questions: "*What are the obstacles that may arise in achieving the vision (or a specific element of the vision)?*", or "*What are the challenges that you could imagine between the dream and the present?*"
  Each group had 5-10 minutes to create a scene.
  The first day focused on the representation of the challenges in achieving the overall vision, while in the following days the analysis of the obstacles was deepened, focusing on the challenges that impacted specific components of vision.
  In order to further analyze and enrich the representations of the obstacles, several rounds of scenes were performed, in which the groups were also invited to work on the definition of the temporal relationship between the challenges, starting from this leading question: "*Once a challenge (obstacle) is hypothetically overcome, what other challenges (obstacles) related to the previous one may arise?*"
  After each group had performed their scenes, participants were asked to collectively discuss the issues addressed and the critical aspects that emerged in each scene, beginning with the facilitator's questions: "*What obstacles emerged in this scene?*" and "*What kinds of problems does the scene show?*" When requested by the participants during the collective discussion, the experts on water management provided information on technical and scientific aspects[12].
  In the conclusive part of the workshop, the scenes that depicted the challenges (and obstacles) most relevant to the community were selected with input from the participants. These scenes, along with the representation of the vision, provided the basis for the construction of the final show (Step 3) to be performed in the FT events (Step 4).

Step 3 Preparation of a theatrical representation that stages the vision and the challenges that emerged during the Workshop

The third step of the methodology entailed the preparation of the show that to be performed at the FT events. It was divided into 2 consecutive methodological sub-steps, which are described below:

- *Definition of the content and the structure of the story to be staged*
  This sub-step was aimed at defining the content and the structure of the story of the play to be represented in the FT session.
  The story was inspired and built based on the results of the previous methodological steps. The content of the story included the shared vision of future access to water and the main challenges in achieving it, which emerged during the Community Workshop. In particular, the story was composed of a scene depicting the vision for an ideal future, as well as various scenes containing the challenges that could arise. Each challenge included different obstacles, which were made explicit through the presence in the story of three clear questions for each scene.

[12] It must be highlight the that in this phase the task of the experts was just to provide information on the issue, if requested by the participants, and not to propose possible solutions to the problems, in order to not influence the entire process.

As the story could not be too long (the entire street play should last up to 15 minutes), only the most relevant obstacles, thought to trigger the most interesting information, strategies, actions, suggestions and proposals from audiences in the TF events, were selected for inclusion in the story. Since the scenes could each represent various problems, many of the workshop scenes could be included in the story.
The structure of the story reflects the conceptual model of backcasting, showing first the image of the desired future, and then, after an abrupt transition to the image of the present condition, a pathway of challenges that are positioned between the present and the future, which the community has to face to achieve the vision. The intermediate image of the present condition, which represents a variation from the "classical" pathway of backcasting, was introduced for stylistic representation reasons. The transition from the desired dream to the problematic condition of the present (return to reality) has a very engaging effect, which nevertheless keeps the conceptual structure of backcasting intact.

- *Artistic creation of the play and aestheticization of the scenes*
  Starting from the set content and structure of the story, this phase was aimed at creating the play and setting the scenes to be performed at the FT events. This activity was developed in collaboration with a company of local artists, responsible for staging the show and facilitating the FT sessions.
  In order to develop an inclusive and stimulating FT event able foster broad participation, and to provide a "comfortable" environment where the public could react and propose clear answers and strategies, the play (called the "antimodel" in TO terminology) needed specific technical and stylistic characteristics:

  - Scenes must include the presence of one main character acting as "the oppressed".
    This character is struggling to achieve change and justice, and must trigger empathy and solidarity in the audience. Also, oppression should be embodied in a character that the community can recognize. It must not be a caricatural, and it can change through the scenes. Sometimes the oppressed ends up oppressing as well.
  - Scenes should show an unsolved problem.
    Throughout the course of the story, the situation for the "oppressed" characters should continue to worsen. Scenes should have a "bad end", in order to trigger the will not to let the story come to that end.
  - Scenes should be simple and clear.
    The audience should be able to recognize the issues that are represented. In particular, it is important that the challenging moments of the scenes are explicitly shown and articulated together with clear questions. Moreover, it is important that the situations and the characters are perceived as realistic by the auditors, so that the audience can identify itself with the situations that are observing.
  - Scenes should be provocative and thrilling.
    By developing empathy and solidarity with the "oppressed" character, the auditors should be inspired to react (and re-act) to the represented problems, and try to change something. Technical issues present in the story should be always paired with human elements. Moreover, it is important that the words (and dialogues) used by the actors are clean, relevant and aesthetically provocative (sometimes jokes can be useful for this purpose).
  - The show shouldn't be too long.
    If performed in the street, the show should not last more than 15 minutes. It is important that it is not too substantial, since it must leave sufficient time for the forum.

  In addition to meeting these requirements, the scenes were enriched by songs, melodies (with guitar and drums), and dance in order to make the show more energetic and encourage audience engagement with the issue represented.

Step 4 Search for alternative actions and strategies to overcome challenges

The fourth step of the methodology was dedicated to the collective exploration of possible paths of action to overcome the challenges presented in the show. In this step, developed during the FT events, the community was directly involved in the search for possible strategies to overcome the identified obstacles and meet their needs as regards access to water.

The FT event was divided in 3 consecutive sub-steps, the first two of which constitute the preparation for the event. They are described below:

- *Advertising the event*
  In this sub-step the event was advertised in areas close to the place of representation.
  The artists performed local music and dances to encourage the participation of the community. This method has proven very useful in the previous TO activities within the ACC Dar project (Loddoni, 2012).

- *Presentation of the event*
  Once a large audience was gathered, in this sub-step the facilitator presented the group of artists and briefly explained the purpose and function of the FT activity to the audience.
  Before the beginning of the show, the facilitator led various fun games to create a sense of unity and confidence among audience members.

- *Forum Theatre*
  The fourth sub-step represents the heart of the FT activity. The entire FT session could generally last 60 to 90 minutes, depending on the interest and participation of the audience.
  According to the FT method, the entire show is presented to audience once. Following the first representation, the facilitator starts to animate the discussion by asking the audience: "*Is there a problem in this story?*"
  Following the indications from the audience, actors repeat each scene individually in order to provide an opportunity for the spectators to intervene at points of the story they consider important. At this stage, the facilitator fosters participation through a series of specific questions, such as: "*Is the situation depicted realistic?*", "*What is the problem represented in this scene?*", "*Is it a real problem?*", "*Who is the oppressed (and the oppressor) in the scene?*"
  When a spectator identifies a problematic situation that requires a change, the facilitator gives him/her the possibility to intervene by replacing a character in the scene and acting out his/her proposal for overcoming the obstacle.
  The spectator can only replace the "oppressed" character or another character whose action can support the "oppressed" in overcoming his/her problems, but not the "oppressor" character, as this would mean eliminating a problem without actually solving it.
  The other actors in the scene (the "oppressors") maintain their characters during the discussion, and react to the proposals of those who intervene, provoking and hindering them to test their proposed courses of action. If the actors find the proposed solution plausible, they will change the story accordingly, otherwise they will resist.
  The goal during the FT sessions was to analyze all the challenges depicted in the show. The audience, through its interventions, has the power to decide which scene/challenge must be addressed in more detail during the FT session.

3.2. Results of the Scenario Exercise

The second finding concerns the presentation of information and knowledge developed during the various phases of the scenario exercise (Community Workshop and FT session) carried out in Kigamboni.
In this section, the specific results of each step of the methodology are presented. In particular:

- The shared vision and the present conditions of water access that emerged during the Community Workshop.
- The challenges (and obstacles) in achieving the vision, identified during the Community Workshop.
- The plot and scenes of the performance staged during FT events.
- The actions and strategies to overcome challenges proposed by the audience during FT sessions.

3.2.1. The vision and the present condition

Future Vision

The shared vision that emerged during this process corresponds to a future scenario in which every family in the community has access to a sufficient amount of water for their domestic and productive purposes. The amount of water desired is 2000 L/day per household (this is the volume of many of the water tanks found on the roofs of wealthy families' houses).

Water supply should be ensured by at least 2 different sources, the management of which would be entrusted to the community: one or more well-constructed, deep wells with various public distribution points (public standpipes) connected to the municipal water system. Each family should have the opportunity of building its own tertiary system of pipes for transporting freshwater to their home. Other possible water supply options considered include rainwater collection at the household level and water harvesting in collection basins managed at the community level.

The need for alternative water sources derives from need to guarantee continuous and stable supply without prolonged interruptions of service in cases of malfunction or environmental problems such as pollution, flooding, and increasing seawater intrusion, thus preventing people from spending a considerable part of their day obtaining water. This would also allow for the use of brackish or salty groundwater for non-potable domestic uses and the use of freshwater from the public standpipe for potable or agricultural purposes.

In addition, adequate access to water would allow people to develop various socio-economic activities on a broader scale, both at the household level (such as family agriculture) and the community level (such as larger-scale agriculture, livestock grazing, ice production for consumption, and fish farming in artificial pools. Such activities would help to amortize the costs of building and managing hydro systems, while also representing an opportunity for community development.

Present condition

The current water access situation in the Kigamboni community appears problematic according to workshop results. As it is impossible to hook up to the municipal water system, which due to structural deficiencies serves only the military base and the industrial area, the main sources of water are private or community shallow wells that often produce salty or polluted water. The salty water is used mainly for domestic purposes. The lack of a municipal water system renders it very complicated and laborious for the community to access freshwater at reasonable prices. In fact, to obtain fresh drinking water women (men are not expected to carry out this task) are forced to purchase freshwater from local street vendors at a relatively high prices (500 Tsh/bucket) or from vendors in other areas (for example Kisiwani) at moderately high prices (250 Tsh/bucket) and then transport it for many kilometers. In any case, with such acquisition practices people can never be certain of the quality of the freshwater they acquire. In addition, certain members of the community cannot afford to obtain freshwater at such prices, and are forced to drink salt water, with all the attendant health risks.

Community aspiration for access to water

The vision building process involved the construction of various images of the ideal access to water scenario, which are shown in Annex 1 (I). This provided the cognitive basis upon which workshop participants constructed their shared vision of water access.

The shared vision highlights the main hopes of the Kigamboni community as regards access to water, as well as the most widely shared priorities. The hopes that are reflected by the vision of the future reflect the different perspectives on access to water among community members, which translate into well-defined and shared future objectives for the community. Such perspectives are outlined below in the order of priority determined during the vision building process:

- *Water as a stable primary good*

  The Kigamboni community's legitimate expectation to have stable access to good quality water at a reasonable price derives from the natural consciousness of the central role and the social and economic weight that access to water currently has in people's daily lives, both in terms of the obvious physiological need, as well as the work (especially for women), time (for transportation from different areas) and money (a considerable portion of a family's daily budget) involved.

  In the community's vision, stability is guaranteed by the possibility of accessing various water sources at the same time. According to workshop participants, source diversification would ensure quality (freshwater from the municipal system rather than purchased from third parties

without quality control), provide flexibility of use (saltwater could be used for domestic purposes while freshwater could be used from drinking and agriculture) and keep prices at a level of the net cost of hydro systems and maintenance. The community is also open to contributing to such costs in the context of a collective project.

- *Water as a motor of local development*
  The final shared vision and vision building process indicate that people's hopes are not limited to the satisfaction of their primary needs. Rather they have broader development goals for the future. Adequate access to water is considered an opportunity to generate one or more socio-economic activities at both the individual and community level.
  Such activities are viewed by some as a necessity for amortizing the costs of hydro infrastructure (wells, pumps, pipes) and the costs of monitoring, managing and controlling community water access points. Others see them as potential new income sources.
  According to the shared vision, agriculture (both at the household level and on a larger scale) is given priority over other economic projects, probably due to the fact that agriculture represents the predominant daily activity of workshop participants. However, other typologies of economic and socio-recreational project did emerge during the vision building process: from livestock grazing and fish farming, to more creative ideas such as ice production and the construction of a waterpark[13].

- *Water as a crux of community togetherness*
  Sharing within the community also emerged as an important element in the population's aspirations. This dimension is manifest in the typology of desired water supply (community well and community standpipes hooked up to the municipal water system) and in the definition of socio-economic projects, in which workshop participants considered the community component a strength and an advantage.

3.2.2. Challenges and obstacles in achieving the vision

Depicting the obstacles to achieving the vision

Exploration of the obstacles to achieving the vision focuses on a specific component: diversifying sources of water (presence of a community well as well as public standpipes connected to the municipal water system). Based on the vision building process, this is the most important element of the community's aspirations.

As such, the obstacles that could arise in trying to obtain the community well and the standpipes were identified, and the possible temporal relations among them were further explored in two distinct time periods of the future vision:

- Regarding the community well, the obstacles identified involve the building stage, and the subsequent management and maintenance phase;
- Regarding the public standpipes, obstacles are anticipated during the works to connect the Kigamboni area to the municipal water system (transition from primary conduit along the main Temeke coastal road) and subsequently during the management and maintenance of the local distribution system.

The scenes ideated by Community Workshop participants, which describe the obstacles to achieving the vision, are shown in Annex 1 (II).

Multidimensionality of the challenges to achieving the vision

The obstacle identification process enabled discussion of problems, conflicts and critical points related to the water access issue that require intervention in order to facilitate changes to the system. In particular, it became clear that the problem is very complex and involves a series of interrelated dynamics (social, political, economic, and technical-environmental). In fact, the identified obstacles demonstrate the transversal character of the water issue, as it involves multiple aspects of community life, including the need for economic resources, interaction with authorities, technical knowledge, and community agreement. In order to organize the results of this phase of the process, the identified obstacles were divided into 4 different, albeit interrelated, types of challenge:

[13] Participants explained this particular proposal as the ultimate expression of having more than enough water to meet all of their needs.

- *Social Challenges*
  This includes obstacles related to the difficulty of reaching collective agreement to a specific community project.
  Many of the scenes developed through the workshop demonstrate that the difficulty of reaching a collective agreement regarding a project for resolving the water access problem depends on various factors, such as misinformation, disorganization, disillusionment and growing disinterest in public participation among community members, caused by a widespread diffidence and lack of trust as regards political authorities.

- *Economic Challenges*
  This includes obstacles related to the difficulty of accessing credit to finance community projects.
  Many scenes depict the difficulty of depending on the limited economic means of the community and the scarcity of public funds available to local authorities (and the difficulty of accessing funds through the central government). Moreover, even the "most common" fundraising practices depicted in workshop scenes, such as collecting donations or requesting a private loan, present further obstacles related to the difficulty of managing the money collected (theft and scams are common) and of repaying private loans.

- *Political Challenges*
  This includes problems related to the potential for political conditions that may impact the development of community projects.
  Many scenes highlight the difficulties that arise as a result of the lack of communication between the community and political leaders, or among various political levels (the Mtaa, Ward, and District level), which often determine the flow of public resources on the basis of priorities established without consideration for the needs of the community. Corruption of local politicians (and the technicians responsible for the management of public projects) is also problematic, as they abuse their power for personal profit at the expense of the community and resulting in the failure of community projects (not to mention the loss of the funds collected by the community or assigned by public administrators for such projects).

- *Technical and Environmental Challenge*
  This includes obstacles related to technical and environmental conditions that may impact the development of community projects, especially during the construction and management of the water supply system.
  Many workshop scenes depicted problems arising due to inadequate technical support for the community when designing, constructing and managing community boreholes and water supply systems.
  In the case of a community well, for example, a variety of problems can arise as a result of incorrect location and insufficient planning, with negative potential consequents as regards the quality of groundwater drawn from the well. In addition to being salty, water may also be polluted (as is the case with shallow wells dug in the proximity of sanitary facilities). In other cases, there may simply be no water at all, or the quantity may be so small that it is quickly exhausted (this may occur where specific surveys of the aquifer characteristics have not been carried out). This is attributable to the lack of technical competence among community members who often autonomously construct wells, and to the unreliability or corruption of the technicians responsible for carrying out surveys. Additional problems may arise as a result of inadequate maintenance or a lack of monitoring of water supply systems, resulting in periods of malfunction, damage, or theft of equipment such as pumps, pipes and electrical systems. Lastly, obstacles may be caused by the lack of communication and coordination between the community, politicians and technicians from various sectors of local government (water, urban planning and design, roads, energy). For example, the community water supply system (financed by the community or a specific sector of the LGA) could be damaged during the construction of a road (planned by a different sector of the LGA).

Figure 9 summarizes the challenges and obstacles that may arise in working to achieve the community's vision of future water access, as identified by workshop participants.

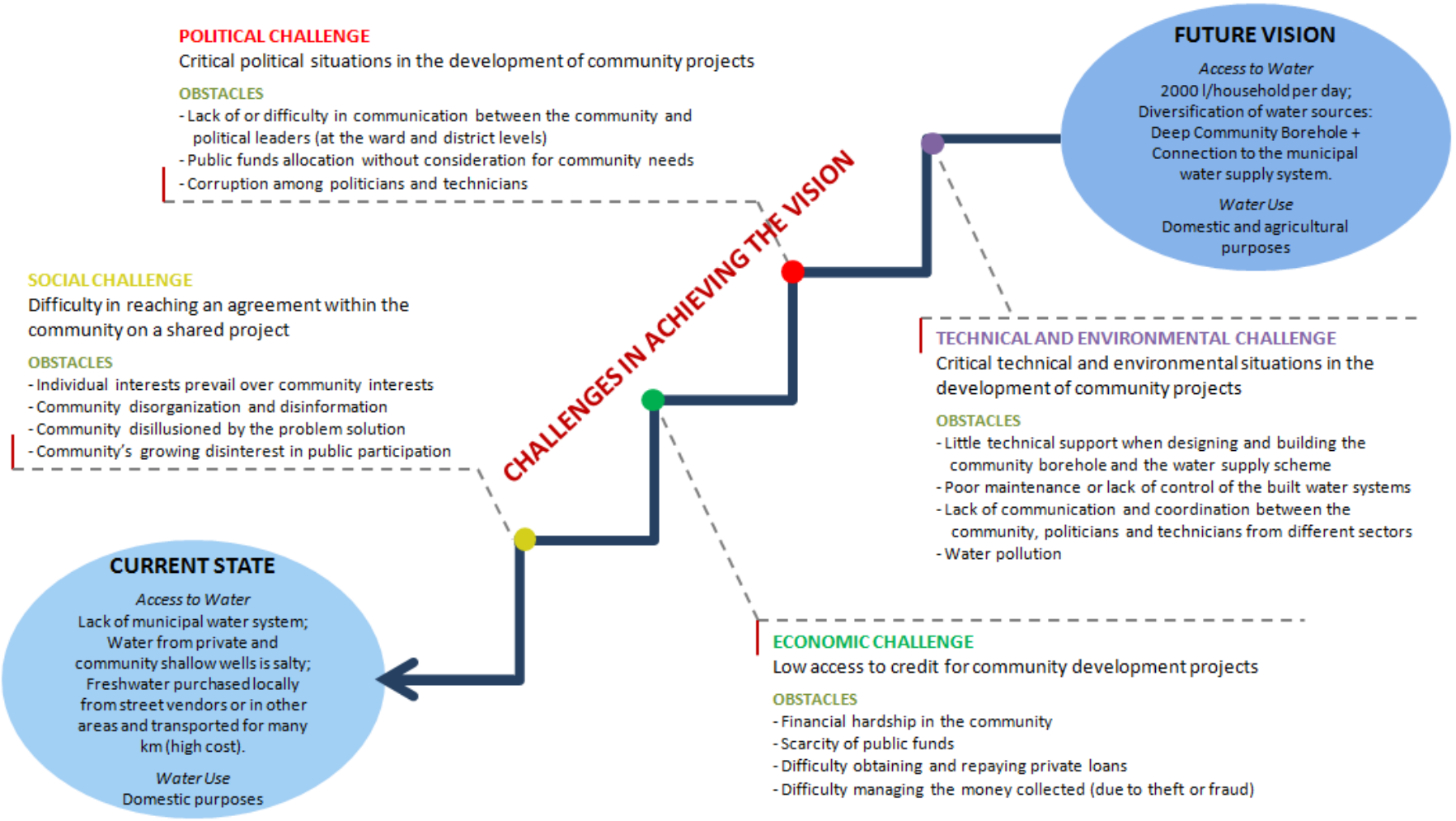

Figure 9 - Obstacles in achieving the vision

3.2.3. The theatrical representation: staging the vision and the challenges

The content and structure of the story

The content of the story includes the shared future vision as regards access to water and the main challenges in reaching it, as identified during the Community Workshop. In particular, the story is composed of a dynamic image, which represents the vision, and various scenes, each of which contains challenges of a different nature. Each challenge included different obstacles.

The structure of the story reflects the conceptual model of backcasting, showing, first of all, the image of the desired future vision, and then, after an abrupt transition to the image of the present condition, a pathway of challenges that are positioned between the present and the future, which the community has to face to achieve the vision. Figure 10 schematizes the content and the structure of the story.

A detailed plot of the performance

A boy in the community is asleep at the center of the stage while people dance and sing around him, interpreting his dream and acting as though they have water in abundance.

The text of the song they sing, *Tutashinda pamoja*, describes the things people want: water for everyone, water for agriculture, water for domestic use, and water from different sources to guarantee constant access. In the dream, water sources are diversified: there is a community well and a pipe system connected to the municipal aqueduct.

The dancers around the sleeping boy interpret domestic and agricultural activities until they gradually also fall asleep, signifying that these images of a happy life are only a dream.

Suddenly a guitar and drums play loudly, and the boy wakes up to discover that reality is much different form his dream. A vivacious market atmosphere is quickly established: the boy sells water on the street at a very high price (2000 Tsh for a 20 L bucket), a woman struggles to lift a bucket of water that she has come to buy from very far away, another woman feels ill after drinking contaminated water, and yet another complains that the water from the well is salty.

At this point, the woman who performs the role of the "oppressed" protagonist addresses other members of the community (and the audience) with a small monologue that underlines the unsustainability of the current situation and the need to change it. In a tropical country with heavy rains, she says, people should have water every day. The boy who had previously been dreaming intervenes to offer her his support.

Although they don't initially agree, the community members listen to the woman and decide to go together to the Mtaa leader and ask for a community well to meet the community's needs.

A new song, *Safari*, is sung by the group as they make their way to the office of the Mtaa leader. This song is subsequently repeated at the end of every scene to symbolize the series of challenges that the community must overcome.

Having reached the Mtaa leader's office and expressed their needs to him, he answers that unfortunately he cannot give them what they ask because the annual budget is already closed and therefore they'll have to wait until the following year.

Given the negative response from their leader, the community members try to come up with another solution to resolve their problem without relying on the financial support of the local administration.

The protagonist proposes that they pay for the well with their own money, but the other community members have a variety of reasons for disagreeing: one man is against anything being built in the vicinity of his house, another maintains that the project is impossible, the boy who sells water faints when he hears what it would cost to build the well, and in any case he is not interested in the project since it would deprive him of his livelihood.

After this discussion, the group manages to agree that they will try to collect donations from community members in order to build the well.

Having collected many donations and obtained the amount necessary to build the community well, the group returns to the Mtaa leader's office to get permission to build it. The Mtaa leader summons the Ward delegate, who agrees to the wall.

As the group leaves the office, singing out of happiness at their success, the boy who sells water pulls the Mtaa leader aside and proposes a "Secret Agenda" to sabotage the construction of the new well, offering to share the profits from his continued water sales. The leader accepts.

After a time lapse, the community is gathered around the newly constructed well, anxious to draw water. The protagonist takes a drink, but immediately spits it out because it is salty, and soon shows signs of feeling ill. It appears to everyone that the well was not well planned or well constructed (it is not deep enough, and not located in the right area).

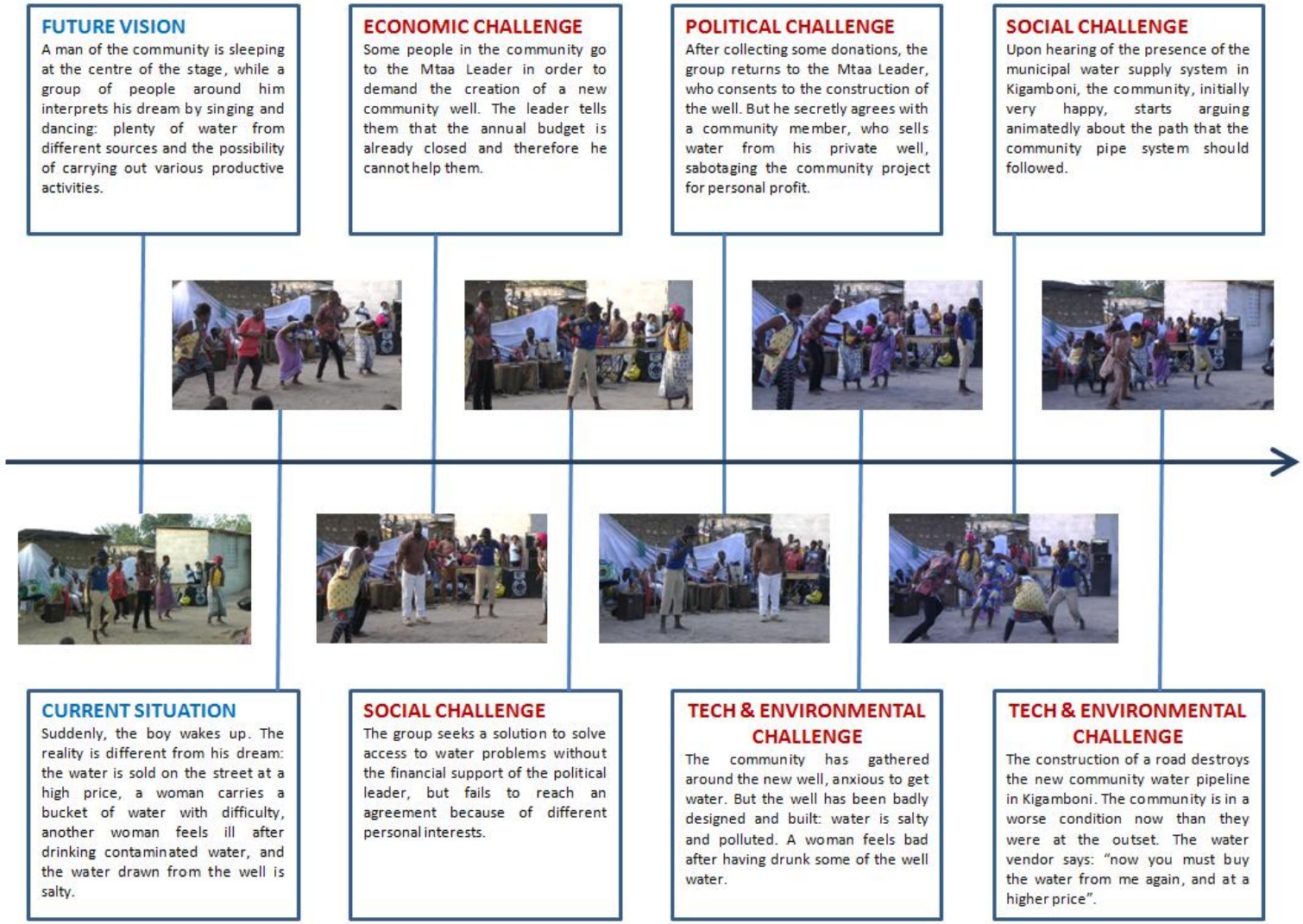

Figure 10 - The content and the structure of the story

The whole community, with the exception of the water seller, appears disappointed and defeated. Just then, a man enters who informs them that a primary conduit of the municipal water supply system is going to be built in the Kigamboni area. This will allow them to hook up to the water network, providing water for the whole community. Everyone receives the news with enthusiasm, but only moments later they are already fighting heatedly over the route that the secondary water supply system should follow, since everyone wants it to go past their own house. The protagonist intervenes in an attempt to calm the argument.
At this point, technicians and other employees from DAWASCO (the organization responsible for the construction and management of Dar es Salaam's water supply system) enter the scene, and with the community's support they build the new pipeline that will bring water to Kigamboni.
Right away, an employee and technician from the municipality arrive to pave a new road in the same area where the new conduit has been constructed. Ignoring the community's complaints, they go ahead with the road, destroying the water pipeline.
At the end of the story, despite all their efforts the community is in even worse circumstances than they were at the outset, as evinced by the last line of the play, in which the water seller says: "*Now you'll have to buy water from me again, and the cost is higher than ever (2500 Tsh)!"*.

3.2.4. Actions to overcome the challenges

Action and strategies proposed in the FT events
The audience proposed a variety of actions and strategies for overcoming the challenges depicted during the FT events.
Although the structure of the play indicates that the vision for the future can only be reached if certain obstacles are overcome through a comprehensive strategy, FT event attendees often proposed actions that responded to single and specific challenges. In some cases, plans of action (strategies) were developed that responded to multiple challenges.
Figure 11 demonstrates the main actions that emerged from the FT events, with the corresponding challenges they seek to address. A complete list of the actions proposed during the course of the events, subdivided by challenge typology, can be found in Annex 1 (III).

Possible modalities of action and development agents
The collective exploration of possible action and strategies for overcoming challenges and meeting the community's access to water needs facilitated the identification of several potentially key factors to changing the current situation as well as development agents that may be able to transform the community into their desired vision.
These factors represent potential modalities of action, compatible with the capacities of the community, which could favor change. In particular, 3 such modalities emerged from the FT activities:

- *Community Cooperation*
  Although reaching cohesive agreement within the community was identified as one of the main challenges, it is also considered a key point to the majority of actions and strategies proposed during FT events (e.g. the collection of donations to overcome financial limitations, or the strategy of creating a Community Water Association).
  In addition, this dimension constitutes a central value in the community's aspirations for the future.
  Community cooperation therefore constitutes an important factor that could be the subject of intervention.

- *Willingness to participate in the decision-making process*
  Growing disinterest in public participation among inhabitants, caused by a widespread sense of diffidence and mistrust towards political authorities, and disillusionment with regard to the water access problem are some of the main obstacles to developing a shared project that emerged during the workshop. Nevertheless, many of the actions and strategies proposed during FT events seem to indicate a "renewed" willingness among community members to assume central roles in decision-making processes (e.g. the organization of a community group to collaborate with the Local Water Committee) and to increase the community's awareness and knowledge of the laws, rules and plans impacting water access in order to increase their "negotiating power" with political and technical authorities.

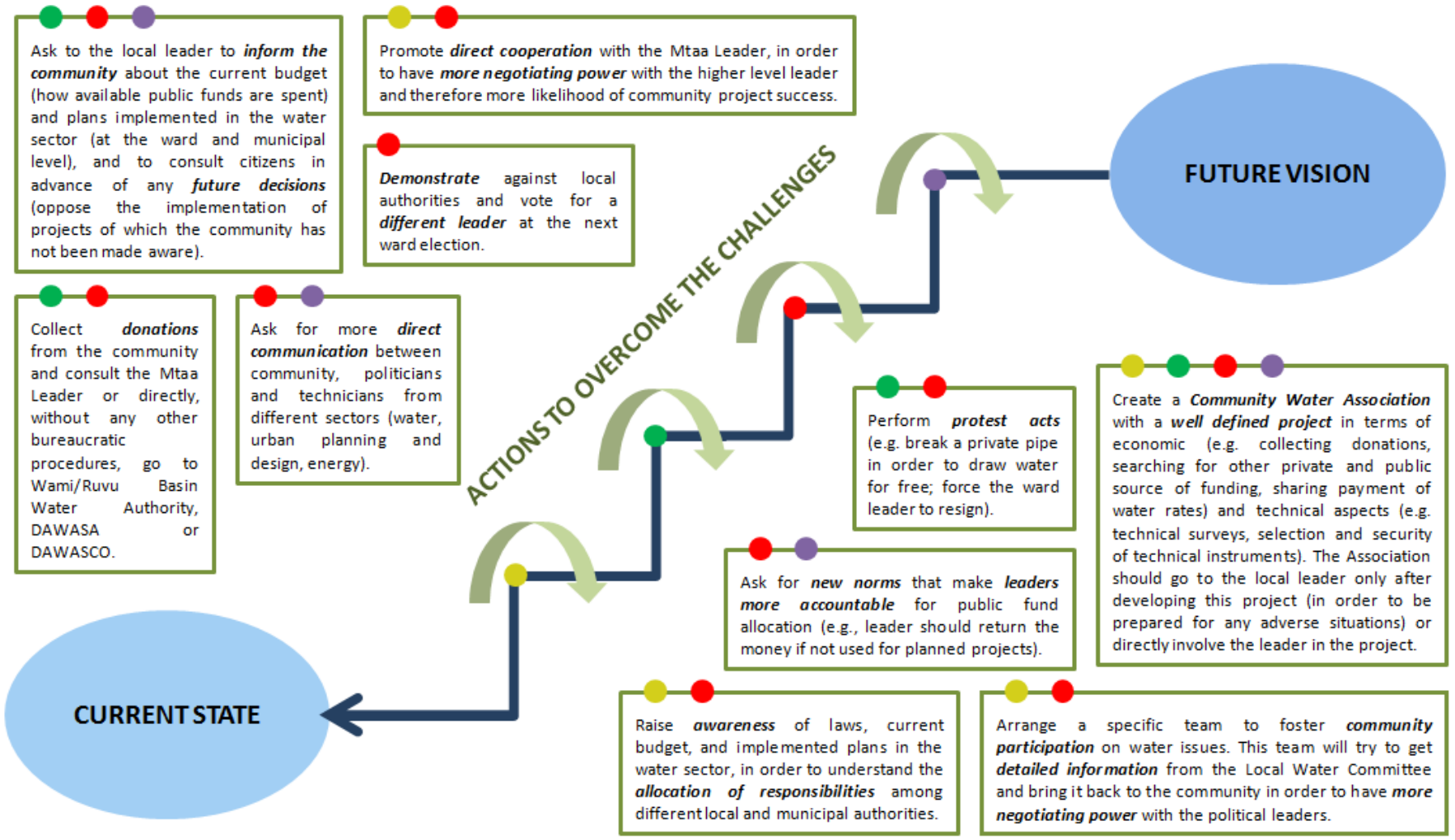

Figure 11 - Modalities of action that emerged from the FT activities

To this end, the more “active” members of the community, such as community associations, may be able to catalyze more engaged public participation.

- *Involvement of the Mtaa Leader in community projects*
  The Mtaa Leader appears to be an ambivalent figure. As indicated in the performance described above, the Mtaa leader is perceived as an oppressor within the community, the source of economic, political and technical-environmental challenges. At the same time, workshop results indicate that Mtaa leaders also collaborate with the community, battling against oppression originating from higher levels of decision-making.
  Despite this ambivalence, the centrality and importance of the Mtaa leader’s role in the public and political sphere is widely recognized. In fact, he/she is the first collector and bearer of the community requests to higher levels.
  As a result, the involvement of Mtaa leaders in community projects, and the sense of ownership that this could engender, may lend greater legitimacy and political power to community actions, as indicated by some of the proposals that required a positive collaboration between the community and the Mtaa leader.
  This may therefor be an important factor upon which to intervene to facilitate the success of community projects.

3.3. Assessment of the participatory methodology in the Kigamboni area

The third finding concerns the scenario methodology applied in the case study. In particular, the participatory processes applied in this study has been assessed with respect to several different aspects:

- capacity to facilitate participation;
- capacity to foster community awareness and learning;
- capacity to provide knowledge for local adaptation planning;
- capacity to support future projects, in terms of targets and actions;
- applicability in the Kigamboni context.

This evaluation was carried out by means of a SWOT analysis, identifying specifically the internal strengths and weakness of the methodology, as well as the opportunities and threats presented by external conditions (in Kigamboni specifically)
This evaluation is based on literature review as regards external conditions, and observations of the process combined with interviews with Community Workshop and Forum Theatre participants as regards internal strengths and weakness. With respect to the latter, semi-structured interviews were conducted during various phases of the process:

- a sample of workshop participants were interviewed during and after the workshop, and during and after the FT events;
- particularly “active” participants of the FT events were interviewed after the FT sessions;
- the Mtaa Leader of Tuamoyo (the sub-ward where the majority of performances were held), who participated in some FT sessions, was interviewed after the activity;
- the Tanzanian expert in participatory processes, who took part to the entire process, was interviewed after the activity.

This assessment helped researchers identify potential improvements and updates for the methodology, which are presented at the end of the present section.

3.3.1. SWOT analysis of the developed methodology

Strengths and weaknesses

Participation
The applied methodology proved capable of facilitating broad community participation in the FT sessions as compared with classical methods such as meetings and focus groups, particularly considering the time constraints.

In total, more than 2000 people were involved in FT events over 7 days. The public actively participated, often confirming the existence of the problems depicted, and sometimes proposing possible solutions to the challenges portrayed on stage.
This capacity may be directly connected to the type of participation instrument used. By stimulating people's interest through acting, music, dance and games, the Theatre of the Oppressed allows complicated issues to be addressed with a simple and enjoyable language that is accessible to all. The use of such techniques, as well as the clarity and relevance of the questions addressed on stage, help to create an atmosphere of levity, without constraints, where people want to participate and intervene without feeling embarrassed[14]. During workshop events, too, the participants interviewed confirmed that they felt a comfortable and inclusive environment had been established. No form of pressure or conditioning was perceived. It bears mentioning that the majority of workshop participants also attended the subsequent FT events. This reflects not only to their interest in the topic addressed, but also a sense of ownership of the work begun during workshops and completed at FT events.
An additional strength of the methodology as regards participation was the involvement of a community-based organization (CBO), the Kigamboni Community Center (KCC), which provides training, activities and volunteer opportunities for community youth. The involvement of young people involved in various community activities meant their experience and capabilities could be capitalized on, and also lent legitimacy to the workshops in the eyes of the community[15].

One weakness that was mentioned by several interviewees, was that the partial involvement of individuals in decision-making roles within the community (such as Mtaa leaders and Local Water Committee members) or people with economic interests in the water sector (water sellers, owners of private wells, managers of community wells) whose contributions could encourage or impede the suggestions of other participants. This lack is likely due to the time constraints under which FT events were prepared, which limited the ability to publicize events, provide information on events beforehand, or identify all potential stakeholders.
In addition, no "higher level" actors were involved, such as local administrators (ward or district level), water management agencies, or experts[16].
In any case, this type of stakeholder was not invited to participate so that workshop and FT event participants would not feel subjugated by power dynamics that might have had a negative influence on the process.
An additional point related to the time limits of the preparatory phase is the choice of location for the FT events. Location choice was essential in ensuring a quality performance and continued participation of audience members. Various factors had to be considered in this respect, including shade, space for children, and the potential for confusion due to traffic or commercial activities in the area. In some cases, unfavorable conditions (lack of shade, constant traffic) detracted from the success of the event.
Another weakness that arose during the FT events is the number of sessions per day. It proved difficult for the performers to hold two events per day, which impacted the quality of their performance and their ability to foster interest and participation on the part of the audience. Limiting performances to one per day would therefore be more desirable, and would also leave more time after events to delve deeper into various issues that may arise during the FT session, thereby establishing deeper relationships with community members.
A final weakness as regards participation is that the joker was not a member of the Kigamboni community. A local joker could be useful as regards encouraging more participation and a greater sense of community ownership of the overall process (as well as the solutions or actions developed through it)[17].

[14] Nevertheless, people with public roles (such as Mtaa leaders or other people with a public function related to water) sometimes hesitated to participate, while at other times they inhibited public involvement by dominating events.
[15] In fact, the workshops provided additional theatrical and advocacy skills to the KCC youths, giving them a chance to improve their communication skills, their capacity to bring the community together, to identify and promote collective strategies, which may have lasting positive impacts on the community.
[16] With the exception of the experts and researchers who participated in the workshops.
[17] In any case, the Tanzanian joker who facilitated the FT events proved extremely adept at handling audience participation.

Awareness and Learning

The methodology has proven very useful for facilitating the community's collective awareness of existing water access problems, their capacities and responsibilities, and consequently of the role that they could assume in decision-making processes regarding water.

Theater allows real people and situations to be depicted in a clear way, allowing the audience to empathize. Problems that are depicted on stage appear more concrete, and thus the possibility of resolving those problems also appears more concrete. At the same time, the collective dimension of the process should be considered a strength, insofar as people are encouraged to discuss their problems once they realize that other people share them.

The facilitation of learning within the community is another strength[18]. In fact, the communication and interaction among participants during the workshop and the FT events (development of the shared vision, identification of challenges, creation of the scenes to be acted, search for solutions and actions to overcome obstacles) facilitated knowledge building and the sharing of ideas and experiences among community members. Also very useful in this respect was the provision of information on water management issues to people with no knowledge on the subject who would not normally seek such information out.

The theater also favors clear, rapid and direct comprehension of the problems portrayed on stage as well as the actions or solutions proposed in the forum.

The entire process can be considered an interactive platform that provides people with the opportunity to critically discuss existing problems, aspirations and capacities, sometimes together with community leaders. This favors the development of a collaborative mentality that is absolutely positive for the community and may extend beyond the immediate context of the forum[19].

One weakness that was noted in the course of the interviews was the lack of technical information, particularly during the FT session, although expert advice could be useful in expanding the community's objectives and their understanding of the options available to them. The decision not to involve experts was motivated by the desire to exclude any external elements that might have conditioned the process, the main purpose of which was to rely exclusively on the local knowledge system and to be as inclusive as possible.

Knowledge provision

The ability to rapidly highlight community problems, conflicts, needs and proposals has proven to be a great strength as regards the design of adaptation strategies at the community level.

This capacity was more evident during the workshop phase than during the FT events. It was the "intimate" and "comfortable" environment in the workshop, free of any conditioning factors (power relations, cultural differences, the presence of individuals with a role in public governance) facilitated the emergence of complex and elaborate discussions.

In particular, the definition of a shared vision allowed researchers to understand people's main aspirations as regards access to water. At the same time, the vision construction phase highlighted which aspects were most widely shared and what peoples' priorities were. In addition, the challenge identification and representation phase facilitated the immediate emergence of a multitude of problematic situations related to water access. This allowed for clear and instantaneous connections between various dimensions of the problem (social, political, economic, technical-environmental) and the motivations behind different actions.

The methodology's ability to facilitate the development of strategies for overcoming specific problems was also clear during the FT event. It should be noted that the need to compose a play with a simple and stereotypical story where the characters remain as faithful as possible to their characters during the discussion often prevent deeper exploration of certain aspects of the problems addressed and their relative solutions.

[18] The learning process referred to here corresponds to first order learning (Quist, 2007). However, researchers were unable to verify whether the methodology promotes social learning (high order learning), which would facilitate the emergence of new mental frameworks and behavior alternatives in the community. This would require additional evaluation phases prior to and following the scenario exercise.

[19] The sharing of experiences encourages awareness of problems is perfectly evinced by an event involving an elderly woman who participated in an FT session. Because she shared her past experiences with respect to water access, a group spontaneously organized around her to determine an action plan on the basis of her advice.

The resulting difficulty in portraying examples where problems are successfully resolved, or where "oppressor" characters demonstrate virtuous behavior, is therefore a weakness of the adopted approach. For example, the Mtaa leader is always the "oppressor" role in the play and imposes economic, political and technical-environmental challenges. However in reality the leader often acts in the interest of the community, defending them against oppression from leaders at higher levels of governance. Nevertheless, in both the workshops and the FT events, it was sometimes possible to analyze situations with a positive outcome, or where the oppressor became the oppressed.
During several FT events several members of the public "broke" the TO rules and intervened to take on the role of the oppressor (specifically, the Mtaa leader) in order to demonstrate how the leader should act in order to remove or prevent the obstacle addressed in a particular scene.
These examples, although they may not be particularly realistic, are nevertheless important because they demonstrate the type of good behavior to which actions and solutions make reference.
Another element of the methodology that merits discussion is the identification of locations for FT events. The choice to hold performances in 2 different areas (Kunduchi and Somangira) with characteristics similar to Kigamboni allowed researchers to verify the consistency of the questions portrayed. A second repetition of the performance in two places (Ufokoni PS and Tuamoyo Ground) 4 days after the first performance (pursuant to the TO technique developed by the Indian group Jana Sanskriti) was unsuccessful in prompting new actions or solutions, probably because the time interval between the two performances was too short.
Lastly, the division of the process into two separate phases (definition of the vision during the Community Workshop, and exploration of actions/solutions during FT events) also constituted a weakness. This type of partially rigid structure, in which iteration and modification are possible within single phases, but not within the broader process, does not allow for the vision itself to be modified or further explored during the FT phase, as this would entail starting the entire process again from the beginning, with new challenges and a new performance. As a result, during the FT event the vision can only be analyzed to understand whether it is truly shared by the community; there is no room for modification. Fortunately, at no time did the FT audience participants intervene to modify or contest the vision developed during workshops[20].

Support for Future Projects (targets and actions)
The most important strength in this respect is the central value of the shared vision (and the shared process through which it is defined) within the methodology.
The vision represents a guiding image that, embodying the aspirations and desires of the participants, has the capacity to favor development of shared objectives by acting as a motivator, activator and catalyst of change. In fact, have defined the objective according to their own desires, people are more determined to reach or at least draw nearer to it, thereby facilitating the development of potentially transformative actions.
By beginning the process of developing a shared vision allows people to visualize the future in a positive way (detaching from the oppressive conditions of the present) and to feel that they are in a position of power, the masters of their own destiny, confident in their capacity to overcome obstacles and change their circumstances (as opposed to the general sentiment of skepticism and resignation).
The process of constructing a vision of the future appears to have created great energy and to have stimulated participants. Beginning discussions with the question *"What is you wildest dream as regards water?"* as opposed to "*What are you everyday problems as regards access to water?"* seems to have been effective in this respect.
Another advantage of the methodology used here as compared with the "classic" conceptual model of backcasting relates to the expectation of change. Various authors (Van Notten et al., 2003; Börjeson et al., 2006) have evinced how "classic" backcasting creates too many expectations of change, resulting in more disappointment and disillusion in cases where change does not occur. By contrast, with the present methodology, which introduces the challenge identification step prior to exploring actions and solutions (which was necessitated by the use of TO) renders the expectation of change less problematic. In fact, the difficulty of achieving the community's aspirations is heavily emphasized in the performance, where the situation of the "oppressed" characters worsens consistently and does not have a happy ending.

[20] During one FT event, the facilitator specifically asked the public whether the vision was actually shared and whether it represented their most desirable future, and they confirmed that it did.

Although the methodology has a demonstrated capacity to identify the critical aspects of access to water that necessitate change as well as the potential agents of development that could promote the necessary transformations, some difficulty did arise in defining a plan of action to facilitate change. Most often, single actions were proposed in response to specific challenges, while a plan of action that responded to multiple challenges was only rarely proposed[21]. Moreover, many people intervened in the FT event to formulate single opinions on the causes of a specific obstacle, rather than to propose concrete actions/solutions to overcome it.
However, more time would be needed to produce a temporally defined action plan (this cannot be achieved in the course of a single FT event). As such, another weakness of the methodology is the lack of a short-term follow-up phase to support and verify the implementation of the actions identified during FT events. Due to time constraints, it was impossible to include this type of activity in the scenario exercise, and this could be improved in the future.

Opportunities and Threats

Applicability in the context
The identification of opportunities and threats in the Kigamboni context for this type of participatory process was based on the interviews with the Tanzanian public participation expert, on a review of the literature on participatory democracy in Tanzania (REDET, 2009), and on comments regarding improvements to community participation in development initiatives, contained in the Temeke Strategic Plan (2010).
The main opportunities derive from the existence of a central and local government in favor of improving social, economic and environmental conditions of the Temeke population, especially as regards the quality and quantity of service delivery through structural and socio-economic reforms (Temeke Municipal Council, 2010). This commitment could lead to reforms of the current participation mechanisms, favoring greater community participation in the definition of development objectives.
One important economic opportunity derives from growing international interest in CC adaptation in urban contexts, which has translated into increased funding for adaptation projects in the Global South. In fact, many cooperation initiatives are already underway in the Temeke area[22]. Recognition among the community and Local Authorities of the positive or negative aspects of such initiatives may represent an opportunity to promote alternative participation practices.
Another opportunity concerns the method of participation used in the scenario exercise in Kigamboni. Participatory Theater (although not exactly the same as the TO method) is a relatively well-known approach in Tanzania, and is already recognized as valid due to its successful implementation in many spheres, including in HIV/AIDS prevention programs.
The last opportunity that derives from the Kigamboni context is the presence of deeply rooted community associations, such as the KCC, which can facilitate community involvement in this type of participatory process, thus favoring the success of potential initiatives.

Threats mainly originate in the current Tanzanian system of public participation in planning processes, which only allows for citizens' participation at the initial (i.e. need assessment) and final (i.e. single project details) stages, leaving strategic choices (i.e. budget allocation) and selection of projects to higher levels. As a result, the implementation of various actions concerning a specific development program (including service delivery programs) often responds to priorities that differ from those of the community, and thus frequently fail to meet population's needs.
Because the population has grown accustomed to this type of participation often translates into a form of inertia. Sentiments of diffidence and disillusion as regards political action are widespread, and the consequence of this is an increasing disinterest and lack of trust in public participation.

[21] If only one challenge is considered at a time, there is a risk that the solution will be of a limited nature, and may not be effective in the long term. For example, the widespread strategy of autonomously building a private well or collecting donations to build a community well may be a good solution in terms of overcoming economic and political challenges, but not as regards technical-environmental ones. Such wells often work for a limited period only, and the water may be salty. Consequently, even if this type of action allowed the population to have a certain quantity of water for domestic uses, it clearly cannot definitively resolve the access to water problems.
[22] For instance, the project "Teka Maji", funded by the EU and the Belgian Development Agency (BTC). More details can be found at: http://www.btcctb.org/en/casestudy/teka-maji-community-owned-water-company-dar-es-salaam.

At the same time, the Temeke Municipality's Strategic Plan (Temeke Municipality Council, 2010) highlights how the conflicting interests of various stakeholders represents a threat to increasing community participation in local development projects:

> "*On the side of improving participation of the community in development initiatives, conflicting interests between community and other stakeholders in development have been observed. In some cases inadequate accountability of community members, delay of funds and support from Ministries and political interruptions have effected work plans and budgets hence delays in improving living conditions of the society at larger.*" (pp. 31).

A final threat is posed by the "Kigamboni New City Project", an internationally funded government initiative that plans to redevelop the area to address various problems, such as lack of housing, traffic, deteriorating environmental resources and access to primary services. By 2030 the project intends to have developed a modern city with multiple functions (residential, business, industrial, tourism, and education) (URT, 2011a). Aside from the questionable feasibility and sustainability of such a project (discussion of which would be beyond the scope of the present work), it is clear that such an overhaul of the Kigamboni area would cause a shift in demographics, pushing a large portion of the current population to migrate to more affordable areas of the city. In this respect, such future development plans may constitute a threat to the development of alternative participation processes in the present. Some inhabitants consider the New City Project a solution to the water access problem (that consequently there will no longer be the need to address). At the same time, the existence of the project decreases many inhabitants' interest in resolving water access problems at all, since they assume they will leave the area in the near future (motivated by compensation mechanisms included in the Project). Nevertheless, given that access to water remains a pertinent issue throughout Dar es Salaam, increasing awareness of such problems may be of value even among inhabitants who will eventually move to other areas of the city.

Assessment Matrix

The strengths, weaknesses, opportunities and threats of the methodology are summarized in Table 5, below.

Table 5 - SWOT Matrix

Strengths (S)	**Weaknesses (W)**
PARTICIPATION - Ability to favor broad participation: TO stimulated interest and creates a pleasant and inclusive atmosphere - No conditions of subjugation among participants due to the absence of conditioning elements such as cultural differences and power dynamics - KCC involvement in the process *AWARENESS AND SOCIAL LEARNING* - Capacity to favor collective awareness of problems, capacities and responsibilities - Ability to represent real problems in a clear and simple way - Capacity to favor a primary learning process within the community through building and sharing of knowledge, ideas and experiences - Ability to provide the community with an opportunity to critically discuss existing problems and future aspirations, thus favoring the creation of a collaborative mentality	*PARTICIPATION* - Limited amount of time dedicated to the preparation phase of FT events (pre-information, advertising and stakeholder identification) - Partial involvement of actors in decision-making roles within the community (Mtaa Leaders, Local Water Committee members), or with economic interests in the water sector (water sellers, private well owners, managers of community wells) - No involvement of actors involved in water issues at a "higher level" (LGAs, water resource management agencies, experts) - Lack of a joker from the Kigamboni community *AWARENESS AND SOCIAL LEARNING* - Lack of information and technical opinions during the FT phase: expert advice could be useful in expanding the objectives and the options available for reaching them (or in identifying options that are impracticable)

KNOWLEDGE PROVISION - Capacity to quickly highlight problems, conflicts and needs of the community - Understanding of the populations' aspirations as regards access to water - Ability to quickly identify connections between various dimensions of a problem - Capacity to quickly identify potential strategies that the community would adopt (or already adopts) to overcome a challenge *FUTURE PROJECT SUPPORT* - Ability to favor the development of shared objectives based on the shared vision of the future - Vision as an activator, motivator and catalyst of change - Vision building process allows the future to be visualized in a positive way, and creates a sense of empowerment, favoring participants' confidence in their ability to overcome obstacles - Capacity to avoid creating unrealistic expectations of change: the difficulty of achieving shared aspirations are clearly demonstrated in the performances - Ability to highlight critical points of the access to water issue where changes are needed, and potential development agents that could facilitate transformation	*KNOWLEDGE PROVISION* - Necessity of staging a simple and stereotyped story does not allow for deeper and more complex exploration of certain problems (or the oppressor characters that create them) and the respective solutions/actions for overcoming them - Partial difficulty in identifying "positive" examples corresponding to successful actions and virtuous behavior on the part of "oppressor" characters - Partial rigidity of the process structure: iteration and modification are only possible within single phases (the future vision cannot be modified during the FT phase) *FUTURE PROJECT SUPPORT* - Partial difficulty in defining a plan of action for change: actions proposed during FT events were usually in response to specific challenges, whereas a more comprehensive action plan to respond to multiple challenges was rarely formulated - Difficulty in obtaining actual action proposals as opposed to mere opinions during FT events - Lack of a short-term follow-up phase to monitor the implementation of the actions identified
Opportunities (O)	**Threats (T)**
APPLICABILITY IN THE CONTEXT - Political engagement of central and local governments to improve the social, economic and environmental conditions of the Temeke population - Increasing international interest in CC adaptation in urban contexts has translated into increased funding for adaptation projects in the Global South - Existence of multiple cooperation initiatives in the Temeke area on community management of access to water resources: recognition of the positive or negative aspects of such initiatives by the community and Local Authorities may represent an opportunity to favor alternative participation practices and processes - Participatory Theatre is recognized in Tanzania as a valid and effective approach, already used in many areas - Presence of the KCC, a deeply rooted community-based organization	*APPLICABILITY IN THE CONTEXT* - The current participatory system in Tanzania only involves the population in the initial and final phases, but not on strategic choices or the selection of development projects - Diffidence and disillusion among the population as regards political action, resulting in growing disinterest in public participation - Conflicting interest among various stakeholders in local development projects - The Kigamboni New City Project

3.3.2. Potential improvements of the methodology

In light of the foregoing evaluation, potential improvements and updates for the methodology used in the present study can be identified. Improvements seek to minimize weakness and limit threats, while capitalizing on strengths and opportunities:

- Introduction of a preparatory phase in the days prior to FT events.
  This would be dedicated to determining which locations would be best for the FT events, identifying the key community actors who could favor change, publicizing the event, and describing the activity

objectives (pre-information), such that participants would be more aware of the purposes of the exercise from the outset.
The task of sharing information could be entrusted to workshop participants and CBOs in a given context. In Kigamboni, the KCC could be an excellent resource in this respect.
As regards the number of events, the Kigamboni experience suggests that it is best to plan only one event per day in order to set aside more time after the event to delve further into certain topics that may arise during the FT session, and in order to establish stronger relationships with the community.

- Training a community member in TO facilitation techniques so that FT events can be conducted by a local joker.
  This could be carried out during the Community Workshop, but would require preparatory work in order to select the right person. The presence of a joker who lives in the community could be useful in terms of encouraging more motivated participation and a greater sense of ownership of the process (and of the solutions/actions that emerge therefrom) within the community, and would give continuity and sustainability to repeated applications of the methodology.

- Dedicate more time during the FT event to analyzing the vision in order to determine whether it is truly shared and represents the more desirable future for the community.
  Naturally substantial modifications of the vision cannot be made, at least not within the same FT session, but broadening the discussion and the vision would allow for deeper knowledge of community aspirations. It could be useful to provide actors with a limited amount of education on the themes address prior to their performance, so that they will be better prepared to accommodate all modifications proposed by the public, and thus "supporting" the audience in their development of solutions/actions.

- Introduce moments during the FT in which the public is able to intervene in the role of the "oppressor", which has already occurred to a limited extent during the exercises carried out. If this were allowed for brief moments (lest it interfere with the whole purpose of the FT activity) it would facilitate the emergence of "positive" examples which would explore what exactly is meant by good behavior of an "oppressor", which would be useful since proposed actions/solutions often refer to this good behavior without clarifying exactly what it would entail.

- Introduce a follow-up phase, in the short-term to support the articulation of a specific action plan and to verify that it is indeed implemented, and in the medium-term to verify that system change has been achieved through the implemented actions.
  In the short-term, an addition discussion workshop involving the most active community workshop and FT participants in order to learn their opinions and get their feedback on how to define a temporal project of specific actions.
  In the medium-term, a useful template may be the FT techniques used in India (Ganguly, 2010), where the FT group often stays in the village/area where they perform for 3 days in order to verify that what has been decided was actually implemented. They then return a month later to monitor progress, and offer another opportunity to rehearse and act out desirable changes. A third follow-up takes place after a longer interval in order to monitor system changes, to define the final changes that may be needed or to modify the previously determined strategies that have proven problematic, and to propose that the community create their own TO group.

- Involvement of "higher level" actors interested in the topic (LGAs, water resource management agencies, experts) in a subsequent phase (in the medium-long term) once the community has achieved greater awareness and knowledge on the topic of study (and has perhaps already implemented some of the actions/solutions identified during FT events).
  The community's familiarity with the method and knowledge of the topic acquired during FT sessions may reduce conditioning of the process due to cultural differences and power dynamics among participants.
  This activity could broaden objectives, facilitating a more complex understanding of the problems to be faced (and the role of the "oppressor"), and therefore the identification of additional actions that could be more effective in overcoming those challenges. Such action may acquire greater "legitimacy" if shared by actors with greater decision-making power.

4. Conclusions and Recommendations

4.1. Conclusions

The present study has adopted the view that adaptation planning should not seek exclusively to reduce the potential impacts of CC, but should also identify transformative social projects oriented to sustainability. As such, the consolidate forecasting scenario approach for local adaptation planning, which is based on the exploration of dominant trends, and is therefore incapable of fully recognizing contextual vulnerability mechanisms, must be modified. A specific population's aspirations for the future should be embraced, and the opportunities for transformation that flow from them should be supported.

In the light of this assumption, the primary contribution of this study is the experimentation of an alternative scenario approach for supporting local adaptation planning. By flipping the usual perspective on future planning (from *forecasting* to *backcasting*) and promoting participation throughout the entire process, this approach takes into account the community's development objectives as well as factors that influence their potential to reach such objectives.

Study results indicate that participatory backcasting is a useful complement to forecasting, as it allows for recognition of the complex system of relationships between the individual, society and the environment, while also introducing into the planning process people's legitimate expectations for change. This renders the approach suitable for community level adaptation strategy development by promoting the process of transition to sustainable models.

The experimentation carried out in the present study has revealed that this approach can effectively support various aspects of the process of mainstreaming CC into local adaptation plans, because it offers:

- the possibility to define shared adaptation objectives based on the community's aspirations;
- the possibility of overcoming a particular problem by defining specific actions and strategies proposed by the community according to their wants and needs, such that institutional adaptation initiatives can favor and support such actions if they are sustainable;
- the possibility of providing criteria with which to evaluate potential adaptation options on the basis of the community's aspirations, problems, conflicts, and proposals;
- the opportunity to promote a process of sharing ideas, experiences, and knowledge within the community, which may facilitate a broadening of the potential for transformative action.

The second contribution of this study is that a specific participatory scenario methodology has been tested. Based on the conceptual model of participatory backcasting and use of the Theatre of the Oppressed (TO) as a method of participation, this methodology has been used to explore a specific population's goals in terms of accessing water, the challenges that may undermine their achievement, and possible strategies to overcome those challenges.

The evaluation of the present case study highlights the various capacities of the methodology developed (Figure 12), including:

- Ascertaining the aspirations, needs, problems, conflicts and proposals of the community as regards access to water;
- Quickly identifying connections between various dimensions of a problem (social, political, economic, and technical-environmental);
- Favoring community awareness of existing water access problems, capacities, and responsibilities, as well as the role that the community could assume in the decision making process as regards access to water and other central questions;
- Facilitating a primary learning process within the community by giving people the opportunity to critically discuss, among themselves and at times with community leaders, existing problems, desires and capacities in order to promote a mentality of collaboration and debate;
- Promoting development of shared goals regarding their desired future access to water (vision as activator, motivator and catalyst of change);
- Facilitating identification of critical points where a transformation is needed and possible factors that can lead to transformation;
- Facilitating definition of the actions proposed by the community to overcome obstacles and fulfill aspirations.

The use of the TO method of participation contributed considerably to the development of the foregoing methodological capacities. It has proven an effective instrument for facilitating broad community participation, stimulating people's interest through performance, music, dance and games, while allowing complex questions to be addressed and shared using simple and accessible language.
Methodological weaknesses have also been identified:

- The partial involvement of individuals whose contributions may have influenced the proposals for change put forward by other participants, specifically those in decision-making roles within the community or those with economic interests in the water sector; and the lack of involvement of technical information and opinions, though expert advice could have been useful in expanding the objectives and available options for reaching them. In any case, the choice not to involve these types of stakeholders was motivated by the need to eliminate conditions of subjugation that may have been caused by cultural differences or power dynamics, so that the process would be as inclusive as possible.
- The partial difficulty in allowing "positive" examples to be portrayed, demonstrating actions successfully taken to overcome a given problem, or virtuous behavior on the part of the "oppressor" characters;
- The partial difficulty of defining a temporally specific program of action that, by addressing multiple challenges, would facilitate transformation of the current situation towards the desired vision.

Given the results of this evaluation, potential improvements and updates that may be useful in future implementations of the present methodology, include:

- Introducing a preparatory phase into FT events, dedicated to identifying the best locations for the events, the key community actors that could facilitate change, advertising the event, and pre-information;
- Involvement of a joker who is a member of the community in order to obtain more motivated participation and a greater sense of ownership among the community, and to provide a sense of continuity and sustainability for further applications of the methodology;
- Dedicating more time during the FT event to analysis of the vision, in order to understand whether it does indeed represent the most desirable future for all community members;
- Introduce moments in to the FT session in which the public is allowed to intervene in the role of the "oppressor", in order to facilitate the emergence of the "positive" examples and to explore the "good" behavior on the part of those oppressor, to which participants can refer when proposing actions and solutions;
- Introduce follow-up phases: in the short-term to support the specification of an action plan and to verify that it is implemented; and in the medium-long term in order to verify that those actions have led to system change;
- Involvement of "higher level" actors involved in the theme (LGAs, water resource management agencies, experts) in a subsequent phase (in the medium-long term) in order to facilitate identification of additional actions that could be effective in overcome the challenges identified, which would be "legitimated" if shared by individuals with greater decision-making power.

In the view of future applications of the participatory process developed for this study, either in the same sphere or with respect to other areas of study, analysis of the results obtained poses several important questions that must be addressed. In particular, some critical aspects of the methodology require further exploration (Figure 12). They can be summarized in the following research questions:

- How can a specific temporal follow-up agenda of activities be defined (based on the community action proposals that emerged during the Forum Theatre sessions)?
- How can system transformations be evaluated in terms of social learning (identification of alternative livelihoods and agents of change) and the actions to be undertaken?
- How can this type of approach be effectively integrated into a centralized institutional decision-making system, such as the Tanzanian one?

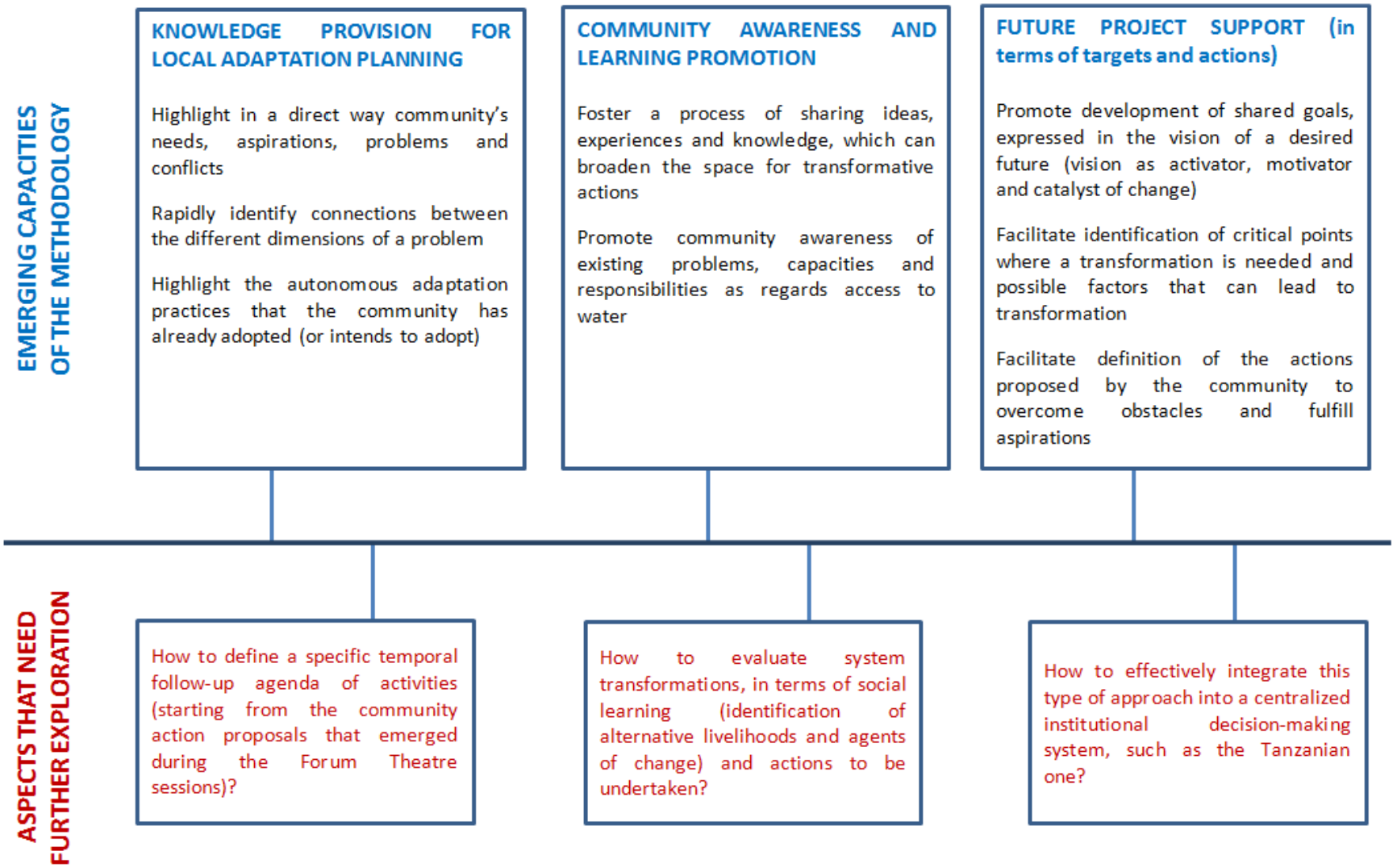

Figure 12 - Emerging capacities of the developed methodology and aspects that need a further explorations

4.2. Recommendations

Two types of recommendation can be formulated on the basis of the results of the present study: those regarding the type of approach to supporting adaptation planning at the community level; and those concerning the possibility of implementing the methodology in different areas.
As regards the former, participatory backcasting has proven to be a potentially appropriate approach to developing adaptation strategies at the community level, through the promotion of a transition process towards models of sustainability. Its use is therefore recommended for two specific phases of the adaptation process:

- Definition of adaptation objectives, since it allows for the identification of targets that are shared by the community and focused on community aspirations;
- Development of adaptation strategies, since it allows for exploration of community proposals and the provision of evaluation criteria for adaptation options based on information that emerged during the participatory process (aspirations, problems, obstacles, and conflicts).

This type of approach can also be recommended where local authorities are primarily interested in facilitating learning processes and awareness generation within the community regarding a specific topic.
The approach applied in the present study can also function well when combined with the “classical” forecasting approach, which considers the dynamics and effects of external pressures (both climatic and socio-economic) in a specific system or context, and can therefore provide important information to be introduced into the participatory process and the definition of an action plan for reaching shared goals.
A combination of the two approaches would require specific methods and instruments for introducing technical information into the process (resulting in experts assuming an active role) while preventing conditions of subjugation within the community during the process.
It is highly recommended that the following information be taken into consideration when developing community development objectives and adaptation option evaluation criteria as a guide for mainstreaming CC adaptation into local UDEM plans already in force (which is the goal of the ACC Dar Project Activity 3.4): information regarding the population’s aspirations (i.e. physical and economic stability in access to water, generation of socio-economic activities at the individual and community level based on stable access to water, communal sharing of water supply systems and development projects); community proposals for facilitating change (i.e. community cooperation, willingness to participate in decision-making process, involvement of key actors); contextual obstacles and conflicts over water access (i.e. multidimensionality of challenges: social, economic, political, technical, and environmental challenges).
As regard the second type of recommendation, the developed methodology could easily be applied to other areas due to its simplicity and linearity, and because it can be easily learned and autonomously reproduced by community, especially in context where community-based organizations are already present.
In particular, the use of backcasting is recommended in particularly complex situation where there is a need to change current conditions and dominant trend are part (or sometimes the cause) of the problem. The use of TO is also recommended in such situations, and is a particularly useful method of participation where there is a need for simple, clear and direct communication.
In addition, the combination of backcasting and TO, although it requires several theoretical and practical adjustments, especially to the TO method, has proven effective at facilitating adaptation planning at the community level (see the above-mentioned specifications). As a result, the joint use of both methods is recommended. This does not mean that the methodology cannot also be implemented together with other methods of participation (e.g. focus groups) and the corresponding changes to the participatory exploration of actions for achieving the future vision.
In order to implement the present methodology in other areas, it should be further improved on the basis of the foregoing assessment.

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Annex 1

I. Images of ideal access to water that have emerged in the visioning process (Community Scenario Workshop)

Leading Question: *What is your wildest dream as regards water?*			
	Preliminary Images of Ideal Access to Water	**Ideal Deepening and "Motivated Theft"**	**Notes from the discussion**
Group 1	Presence of an artificial water basin (a type of community pool) for community recreation (water sports) and economic activities (fish farming). The water would be supplied by a series of community wells (the water they provide could also be salty).	Additions to the preliminary ideal: - Use of water for larger-scale family agricultural activities - Swimming course for children	During the discussion, workshop participants appreciated the community dimension of this ideal, but at the same time they emphasized that meeting primary needs was a priority.
Group 2	Presence of numerous community standpipes for distributing freshwater primarily for domestic use ("possibility of having a freshwater shower daily") The water source is a series of community wells.	Additions to the preliminary ideal: Introduction of another water sources: standpipes connected to the municipal water system to provide freshwater. - Use of available water to practice agricultural activities at the community level. - Presence of a community project manager	During the discussion, workshop participants appreciated the possibility of using two different water sources (in order to have constant supply during breakdowns or repairs to one source, and to be able to differentiate between the use of salt and freshwater) and the existence of an economic project at the community level.
Group 3	Presence of an artificial freshwater basin (water harvesting), to be used for family agricultural activities and livestock. The water source is a private well.	Additions to the preliminary ideal: - Use of available water for intensive agricultural activities (with the use of agricultural machinery). - Presence of a water distribution point (with storage tanks) for domestic use.	During the discussion, workshop participants appreciated the type of economic project represented by the ideal, but pointed out the difficulty of providing the Kigamboni area with the amount of freshwater that would be needed.
Group 4	Presence of a rainwater collection and storage system. The water collected could be used during the dry season for families' agricultural activities. Presence of a community standpipe to distribute water for domestic uses. The water source is a community well (the water provided could also be salty).	Additions to the preliminary ideal: - Presence of an artificial water basin (water harvesting) to be used for fish farming and livestock at the community level. - Use of available water for intensive agricultural activities (with the use of agricultural machinery). - Use of available water for community production of ice for consumption.	During the discussion, workshop participants appreciated the complexity of these ideals, both in terms of meeting families' needs (even if this is not a specific type of freshwater access) and as regards defining a detailed and diverse economic program for the community.

II. Scenes showing obstacles to achieving the vision that emerged during the Community Scenario Workshop

Leading Question for the Scene	Scene Plots Created by the Groups	Obstacles Identified	Types of Challenge	Notes from the Discussion
What general obstacles may arise in achieving the vision?	1. One individual proposes how to resolve the water access problem to a group of men collecting rainwater and a group of women carrying canisters of freshwater from far away. No one listens to the individual because they don't believe the problem can be solved.	- Difficulty in developing shared community goals - Disillusion with respect to a potential solution to the freshwater access problem	*Social Challenge*	
	2. A pregnant woman is strongly encouraged by her husband to go collect water. The woman answers that it takes too long and she has no money. The two argue animatedly. A police officer intervenes and they decide to consult the Mtaa leader to resolve problem of excessively high water prices. Initially, the local leader doesn't want to listen and then answers that he can't do anything because there isn't any money. He thinks a higher level of government should resolve the problem.	- Community and public funds available to local leaders are limited - Difficulty of communicating with local political leaders (Mtaa leaders) who complain of the lack of communication with higher levels of government - Gender issue: only women have to worry about providing water for the families, no matter the cost	*Economic Challenge & Political Challenge*	Some workshop participants maintain that it is too bureaucratically complicated to bring an issue to the central government, with too many steps (Mtaa, ward, district). Others maintain that the local government does resolve problems when they arise, but it takes a very long time. They need a way to speed up the local government's decision-making.
	3. A woman is looking for affordable freshwater. She goes to the house of her friend, who suggests that she take out a private loan to build a community well and start a productive activity. They ask an acquaintance for the loan, and are refused.	- Community economic hardship - Difficulty in obtaining and repaying loans - Development and management of a productive activity.	*Economic Challenge*	Some workshop participants maintain that, once a loan has been obtained, the problem is repaying it. Therefore a portion of any loan should be used to develop a productive activity.
	4. A person feels ill after drinking water from a community well. The community rebels against the Mtaa leader, who did not use available funds to solve the problem. They bring him to the well and force him to drink the polluted water. Then they denounce him to the next highest level of government. The leader is arrested.	- Polluted water: the well was poorly built and poorly managed - Corruption of a local politician	*Technical and Environmental Challenge & Political Challenge*	Some workshop participants felt that violence cannot resolve problems, but in fact makes them worse because it may result in being sent to prison. Others insist that it is just to actively protest against corrupt leaders, though it would be better to do so through non-violent means.

What obstacles may arise in obtaining a community borehole in Kigamboni?	5. After having done a survey that discovered the presence of freshwater in a plot of land, several people ask the land's owner for permission to build a community well. The owner refuses, but later makes a secret agreement with another person to build the well in order to earn money by selling the water to the community.	- Difficulty in uniting the community on a shared project (private interests prevail over community interests) - Secret agendas between private actors	*Social Challenge & Political Challenge*	
	6. Several people discuss the possibility of constructing a community well, but are unable to organize because they all have different needs. Some want the well close to their homes, others want a modern well with a pipe system, others want to avoid spending money because they mistrust the political authorities that they'll have to deal with. In the end they are unable to reach any agreement.	- Difficulty developing a community project - Disorganization within the community - Mistrust of political authorities	*Social Challenge*	
	7. A group of people from the community, having decided to build a water supply scheme for all the inhabitants of the street, goes to the Mtaa leader to ask for financial support. Since he lives in the same street, he approves of the project, and gives the people money that was supposed to fund other already planned community projects. The group of people buys the materials they need, but these are stolen during the night.	- Priority given to investments that to not meet the needs of the whole community, but only of political leaders - Difficulty in developing and managing projects: lack of monitoring of acquired instruments (theft of materials)	*Political Challenge & Technical and Environmental Challenge*	Some workshop participants maintain that this situation is unrealistic: the Mtaa leader would not give money to the people. Others maintain that the situation was indeed realistic.
	8. The community collets donations to build a well, then consults the Municipal Water Department, which approves of the building of a well and provides the remaining funds needed, promising to build a deep, modern well. The director sends a technician to conduct a survey and the well is constructed, but it works poorly and is not very deep: it's not the well that was promised. The leader and the technician stole some of the money the community had collected.	- Secret agenda between politicians and technicians - Untrustworthiness or corruption of technicians	*Political Challenge & Technical and Environmental Challenge*	Some workshop participants reiterated that such situations occur frequently because leaders and politicians feel that they can do whatever they want. Other participants maintained that it is possible to monitor leaders and remove them if they abuse their power.

Once the community borehole is built, what other obstacles may arise?	9. There is no water in the newly constructed community well. A group of people turns to another community member with a private well and asks if the community can use his water at a reduced price. The owner refuses, and raises the price of water.	- Untrustworthiness of technicians: the survey was incorrect - Difficulty in uniting the community for a shared project (private interests prevail over the interests of the community)	*Technical and Environmental Challenge & Social Challenge*	
	10. The water in the newly constructed community well is very salty. A girl shares it with a boy; they both drink it and feel ill.	- Mistaken location and development of the community well: salty and polluted water - Pollution of groundwater	*Technical and Environmental Challenge*	
	11. An old woman realized that much of the water from the community well is lost due to a broken pipe in the distribution system. During the night thieves steal various technical components: conduits, connectors, and an electric generator. The next day, the community meets to find a solution, but they have no money to repurchase the stolen equipment.	- Lack of an organization for managing community projects: lack of maintenance or monitoring of community water services - Economic hardship within the community	*Technical and Environmental Challenge & Economic Challenge*	
	12. Some members of the community with connections to the community well distribution system are forced to pay unusually high water prices. If their consumption remains constant, the prices will continue to rise. They discover that the rising cost of water is caused by the local technician who manages the wells. He has been illegally connecting other community members to the system, for money. The technician is arrested.	- Lack of organization in the management of community projects: lack of monitoring of community water services - Untrustworthiness and corruption of technicians	*Technical and Environmental Challenge*	

What obstacles may arise in connecting the municipal water supply system to Kigamboni area?	13. The community meets to decide whether to connect the aqueduct to access freshwater at a low cost. They decide to consult the DAWASCO to learn more. However, they realize that the investment and the electricity requirements would be too onerous, due to the distance between primary conduit and their neighborhood. They abandon the idea.	- Difficulty reaching community agreement - Economic hardship within the community	*Social Challenge & Economic Challenge*	
	14. The cost of freshwater has increased and the community asks their local leader to do something so that they can use the aqueduct. The local leader responds that the annual budget is already closed and he can therefore do nothing but wait for next year's budget.	- Limited financial means in the community and scarcity of public funds available to local authorities - Difficulty communicating with local political leaders	*Economic Challenge & Political Challenge*	
	15. Having learned of the project to bring water to the Kigamboni area (Kigamboni New City), the community, supported by the Mtaa leader, consults a higher-level politician (a member of parliament) to explain their needs and to ask that the future water system service them as well. The MP answers that he/she can't do anything because his/her priorities lie elsewhere.	- Communication difficulties between the community (including the Mtaa leader) and other political leaders at the ward and district levels	*Political Challenge*	
Once the Kigamboni area is connected to the municipal water supply system, what other obstacles may arise?	16. The construction of a street in the Kigamboni area destroys the water conduit that services the community.	- Lack of communication and coordination between the community, politicians and technicians from different sectors of local authority (water, urban planning and design, roads, energy)	*Technical and Environmental Challenge*	
	17. The community collects donations to construct a secondary conduit system in order to access the municipal water system, but various people oppose the project because they don't want the conduit to cross their property.	- Difficulty in reaching a fully shared community agreement - Difficulty in designing the secondary water supply scheme (low technical support when designing and building the water supply scheme)	*Social Challenge & Technical and Environmental Challenge*	

	18. A woman who did not participated in the Mtaa meeting where the construction of a secondary water system connected to the aqueduct was discussed (because she distrusts political authorities) opposes having the conduits cross her property.	- Difficulty in reaching a completely shared community agreement - Disinformation within the community as regards planned projects - Disinterest in public participation, caused by a lack of trust in political authorities - Difficulty in designing the secondary water supply scheme (low technical support when designing and building the water supply scheme)	*Social Challenge & Technical and Environmental Challenge*	
	19. The DAWASCO technicians are developing a primary water system that will bring freshwater to Kigamboni. Several people oppose the project because they do not want the conduits to cross their property. One of these people is a witch doctor who casts the evil eye on the project, sabotaging it: the technicians' instruments for building the water system no longer work.	- Misinformation in the community regarding the planned projects - Lack of communication and coordination between the community, politicians and technicians	*Social Challenge & Technical and Environmental Challenge*	

III. Actions and strategies proposed during FT events to overcome challenges

	Proposed Actions and Strategies
Social Challenges	- Raise awareness of laws, the current budget, and plans implemented in the water sector, in order to understand the allocation of responsibilities among different local and municipal authorities. By accessing such information, citizens can take action regarding interventions they do not support. - Ask water sellers where they get their water so that the community can go directly to the source rather than paying high prices. - Create a Community Water Association with a well-defined project in terms of economic (e.g. collecting donations and searching for other private and public source of funding, sharing payment of water rates) and technical aspects (e.g. technical surveys carried out by trusted technicians, the choice of water source, the choice of appropriate instruments, organization of security systems for technical instruments purchased). Involve local leaders only after the project has been developed (in order to be prepared for unfavorable circumstances), or involve him directly in the project. - Arrange a specific team that fosters community participation on water issues. This team will try to get detailed information from the Local Water Committee and bring it back to the community in order to have more negotiating power with the political leaders. - Organize meetings in order to promote community unity and have more control over project development. - Promote direct collaboration with the Mtaa leader (who should be respectful and speak to the community with moderation) in order to have more negotiating power with superior leaders and thus higher probability of successful projects.
Economic Challenges	- Collect donations from the community and then consult the Mtaa leader. - Collect donations and then directly consult (omitting any additional bureaucratic steps) an organization that manages and plans municipal water systems, such as the Wami/Ruvu Water Basin Authority, the DAWASA or the DAWASCO (which is responsible for the water distribution through Dar es Salaam). - Ask water sellers where they get their water so that the community can go directly to the source rather than paying high prices. - Create a Community Water Association with a well-defined project in terms of economic (e.g. collecting donations and searching for other private and public source of funding, sharing payment of water rates) and technical aspects (e.g. technical surveys carried out by trusted technicians, the choice of water source, the choice of appropriate instruments, organization of security systems for technical instruments purchased). Involve local leaders only after the project has been developed (in order to be prepared for unfavorable circumstances), or involve him directly in the project. - Ask the local leader to explain to the community how resources are spent and to consult citizens prior to making decisions. - Destroy the wells of any private owner who sells water at an excessively high price. - Ask water sellers to lower their prices. - Undertake protest actions (e.g. break a private pipe to draw water for free, force the ward leader to resign).

Political Challenges	- Raise awareness of laws, the current budget, and plans implemented in the water sector, in order to understand the allocation of responsibilities among different local and municipal authorities. By accessing such information, citizens can take action regarding interventions they do not support. - Ask the local leader to explain to the community how resources are spent and to consult citizens prior to making decisions. - Ask the Mtaa leader to find out about any existing long-term plans (at the municipal or ward level) and inform the community. - Oppose the development of any projects of which the community has not been informed. - Collect donations and then directly consult (omitting any additional bureaucratic steps) an organization that manages and plans municipal water systems, such as the Wami/Ruvu Water Basin Authority, the DAWASA or the DAWASCO (which is responsible for the water distribution through Dar es Salaam). - Protest the local leader if he doesn't support the community, if necessary, involve superior authorities in order to do so. - Vote for a different representative during the next elections. - Undertake protest actions (e.g. break a private pipe to draw water for free, force the ward leader to resign). - Create a Community Water Association with a well-defined project in terms of economic (e.g. collecting donations and searching for other private and public source of funding, sharing payment of water rates) and technical aspects (e.g. technical surveys carried out by trusted technicians, the choice of water source, the choice of appropriate instruments, organization of security systems for technical instruments purchased). Involve local leaders only after the project has been developed (in order to be prepared for unfavorable circumstances), or involve him directly in the project. - Arrange a specific team that fosters community participation on water issues. This team will try to get detailed information from the Local Water Committee and bring it back to the community in order to have more negotiating power with the political leaders. - Promote direct collaboration with the Mtaa leader (who should be respectful and speak to the community with moderation) in order to have more negotiating power with superior leaders and thus higher probability of successful projects. - Request more direct communication between the community, local politicians and municipal technicians of various sectors (water, urban planning, roads, energy). - Make leaders take responsibility by implementing rules, the violations of which would lead to consequences, for example the repayment of money not used for the projects to which they were allocated.

Technical and Environmental Challenges	- Request more direct communication between community, politicians and technicians from different sectors (water, urban planning and design, energy). - Create a Community Water Association with a well-defined project in terms of economic (e.g. collecting donations and searching for other private and public source of funding, sharing payment of water rates) and technical aspects (e.g. technical surveys carried out by trusted technicians, the choice of water source, the choice of appropriate instruments, organization of security systems for technical instruments purchased). Involve local leaders only after the project has been developed (in order to be prepared for unfavorable circumstances), or involve him directly in the project. - Ask for reimbursement of fund invested by the local government if wells are not properly built. - Make leaders take responsibility by implementing rules, the violations of which would lead to consequences, for example the repayment of money not used for the projects to which they were allocated. - Make technicians of local organizations responsible for the final decision regarding the route for pipelines. - Do not argue over the placement of pipelines; rather search for solutions that can make everyone happy, bearing in mind that the most important thing is that a pipeline is indeed built. - Oppose the construction of new roads where water conduits pass. - Place the pipeline as deep as possible in order to protect it from eventual road construction. - Make any road construction company pay to replace any pipelines that it may destroy. - Request that the DAWASCO conduit that were closed years ago to be reopened.

Photographs

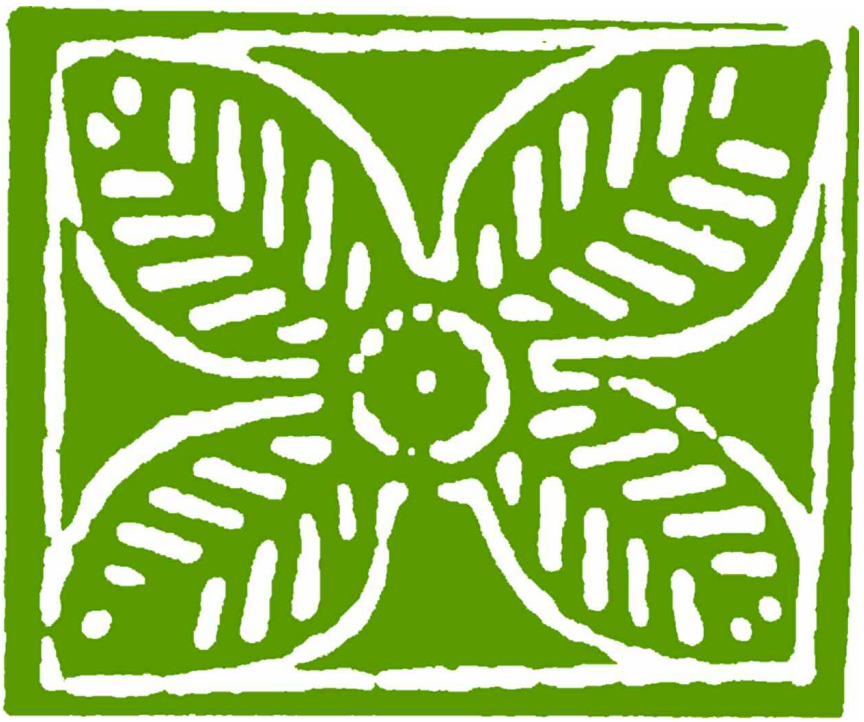
Figure 13 - Community Scenario Workshop: the visioning process

Figure 14 - Community Scenario Workshop: portraying obstacles to achieving the vision

Figure 15 - Forum Theatre sessions: the theatrical representation

Figure 16 - Forum Theatre sessions: exploring actions and strategies for overcoming challenges

Figure 17 - A Forum Theatre Event



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Associate in the Action:	**Dar es Salaam City Council**