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Mainstreaming Literature Review for the Design of a Mainstreaming Strategy

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ACC DAR Adapting to Climate Change in Coastal Dar es Salaam



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Mainstreaming Literature Review for the Design of a Mainstreaming Strategy

1 Introduction

The overall objective of this study is to identify the basic notions and principles which will serve as a reference for developing the methodology for participatory design of adaptation initiatives that is the aim of Activity 2.3 of the ACCDar project. According to the Project strategy, rather than preparing “new” plans, those initiatives will address the need for integrating CC (Climate Change) issues into the existing Urban Development and Environment Management (UDEM) plans and programs. Moreover, special attention will be paid to ensuring the involvement of local communities in the decision-making process. Indeed, the ultimate goal is to improve the effectiveness of Dar’s local authorities in supporting peri-urban population in their effort to adapt to climate change. Thus the knowledge and aspiration of Dar’s peri-urban residents are crucial for a successful design of the adaptation initiatives to be undertaken by LGAs.

This paper presents the results of a literature review on the main approaches and conceptual frameworks of adaptation mainstreaming, placing them in the broader context of Environmental Policy Integration (EPI) in urban governance. In particular, the review seeks to provide answers to the following questions: i) Mainstreaming what into what, and ii) How achieve mainstreaming. To this purpose, three sources of information have been considered: research and review papers; research reports and working papers by development and government agencies; tool books and guidelines addressed to policy-makers and institutions.

The paper ends with recommendations for the approach to be adopted, that have been drawn up based upon the literature review while considering the specificity of Dar es Salaam’s LGAs (knowledge, expertise, resources, relationships with different level institutions and Dar’s residents), residents (livelihood systems, coping strategies and adaptive capacities) and environmental policy (the UDEM strategy tool).

The development of the participatory design methodology is strictly linked to the training program implemented in Activity 3.2 of the Project, where around 40 officers from Dar’ Las will be guided in the formulation of their own proposal for integrating adaptation into the daily activities. In fact, the training will provide opportunity for discussing and testing a range of mainstreaming strategies with the trainees. Their feedbacks will be essential to finalize the approach and identify the entry point for the exercise of participatory design of adaptation initiatives to be performed in Activity 3.4. By doing so, a twofold result will be attained: on one hand, the LGAs’ officers will be fully involved in the definition of the Project’s approach, while enhancing their knowledge on mainstreaming methodologies in general; on the other, group works performed by the trainees will serve as a feasibility analysis of possible mainstreaming initiatives, thus providing crucial indications for making more effective the design of adaptation initiatives.

2 Mainstreaming Literature Review

2.1 *Conceptualizing Adaptation Mainstreaming*

Adaptation seems to be more amenable to mainstreaming, as compared to mitigation, because the kind of action required differs from adopting self-standing measures. In other words “adaptation is the result of a very diverse set of actions that are in turn stimulated by policy influences originating from many different sectors. It would thus make sense to

address the mainstreaming of adaptation in a broad-based way” (Persson and Klein 2008: 4-5). How to cover such a broad spectrum, “what to mainstream into which kind of policies, unless there are sector-specific interpretations and definition measures” (ibid), it is unclear.

Even if there is a wide consensus about the necessity of mainstreaming adaptation into local planning for urban development and environmental management, most of adaptation mainstreaming research and practices have been focussed on development policy at the national level (Klein, 2002; Huq et al., 2003; Agrawala 2005; Persson and Klein, 2008). Moreover, they consider adaptation as a dedicate domain which has to be integrated in development after defining adaptation objectives and priorities.

Indeed literature on Climate Change in Cities has been mainly oriented to develop a new dedicated policy domain for governance of climate adaptation in cities.

Adaptation as a dedicated domain implies resources, objectives and a formal distribution of responsibilities for climate adaptation, with the ultimate goal to achieve a particular degree of adaptation, and being climate-proof (Biesbroek et al. 2009; Swart et al. 2009, Uittenbroek, et al 2012). It assumes the policy process as linear and the conformance to adaptation norms as criterion to assess policy outcomes. In practice, departing from empirical evidences, practitioners and scholars criticized this strategy claiming for an approach which invests in more comprehensive solutions rather than opting for specific measures addressing climate adaptation issues. Such approach, also called “mainstreaming of climate adaptation”, searches for integrating the adaptation objectives into existing policy domains (e.g. urban planning, water management, etc) (Uittenbroek, et al 2012).

Unlike the approach considering adaptation as a dedicated, in the mainstreaming approach climate-proofing is considered as one of the objectives to be pursued, the policy process as dynamic and the performance as criterion to assess policy outcomes (Uittenbroek, et al 2012). However, although several scholars (Adger and Vincent 2005, Smit and Wandel 2006; Huq and Reid 2004; Huq et al. 2003, Klein et al. (2007), Uittenbroek, et al 2012) promote the mainstreaming of climate adaptation, only a few explain how to conduct this integration process into urban planning and environmental management, and how to evaluate it.

1.1.1. Policy Background

Traced back to the 1992 Earth Summit and to the concept of sustainable development, Environmental Mainstreaming¹ (EM) (Dalal-Clayton and Bass 2009) is the mother concept of both climate change and adaptation mainstreaming. The importance of EM was recognized in the 1980s and formalized by international environmental policies and agreements in 1990s. In the 2000s it became part of the global development objectives as EM’s specific targets were included into the MDGs. Commitments were also made for mainstreaming environment into official development assistance (ODA): donor countries and international organizations provided support programmes for EM in developing countries. As for the regional level, EM is a requirement under the EC Treaty².

Drawing on this policy background, research, programmes and tools for adaptation mainstreaming have been developed mainly within two international policy frameworks:

¹ ‘the informed inclusion of relevant environmental concerns into the decisions of institutions that drive national, local and sectoral development policy, rules, plans, investment and action’ (Dalal-Clayton and Bass 2009: 19)

² In the EC, mainstreaming is “the process of systematically integrating a selected value/idea/theme into all domains of the EC development co-operation to promote specific (transposing ideas, influencing policies) as well as general development outcomes”. Environmental mainstreaming, including the mainstreaming of climate change considerations, is not considered as a goal in itself, but rather as a means of ensuring that development is sustainable and successful and thus delivers the intended benefits. Environmental mainstreaming achieves this by ensuring the development is not undermined by a failure to address the potential negative impacts of development on the resources on which people depend, or risks associated with climate change and variability that might change the contexts in which development occurs, making development strategies and measures irrelevant or even harmful (http://ec.europa.eu/europeaid/infopoint/publications/europeaid/documents/172a_en.pdf) (http://ec.europa.eu/europeaid/multimedia/publications/documents/thematic/europeaid-environmental-handbook_en.pdf)

- The (UNDP-UNEP) Poverty–Environment Initiative (PEI), launched in 2005, which supports the mainstreaming of poverty–environment linkages in Southern Countries. Thus the mainstreaming of climate change adaptation into national and sub-national development planning is part of the broader poverty-environment mainstreaming strategy and many of the reports and guidelines on adaptation mainstreaming come from this framework³;
- The European Environmental Policy Integration (EPI), aimed at ‘moving environmental issues from the periphery to the centre of decision-making, whereby environmental issues are reflected in the very design and substance of sectoral policies (Nunan et al., 2012).

1.1.2. Definitions

Although there is no consensus on a definition of adaptation mainstreaming, the term is often used interchangeably with “integration”. The most common definitions stress the following features:

- The overall goal, ranging from ensuring “the long-term sustainability of investments” as well as reducing “the sensitivity of development activities to both today’s and tomorrow’s climate” (Klein, 2002; Huq et al., 2003 and Agrawala, 2005) to a wider aim as contributing “to human well-being, pro-poor economic growth, and achievement of the MDGs” (UNDP, 2011);
- The nature of the object to be mainstreamed, from solely adaptation to “vulnerabilities or adaptation” responses (Agrawala and van Aalst, 2005);
- The very definition of adaptation, from the only reduction of potential development risks to including “take advantage of opportunities” (OECD 2009, p. 60);
- The applicability to a more or less broad range of policy fields, from “some aspect of [climate] related government policy such as water management, disaster preparedness and emergency planning or land-use planning” (Agrawala and van Aalst, 2005) to “policy-making, budgeting, implementation and monitoring processes at national, sector and subnational levels” (UNDP, 2011);
- The need to refer to “both mitigation and adaptation objectives, strategies, policies, measures or operations” (UNDP, 2005) rather than only to adaptation;
- The possible interchangeably with a climate risk management (CRM) approach - in reality, the two terms are slightly different as mainstreaming adaptation incorporates considerations of long-term effects of climate change, while CRM focuses on current climate variability and no-regret measures (UNDP, 2005);
- The “iterative” nature of the process (UNDP, 2011);
- The type of actors to be involved in the process, which “entails working with a range of government and non-governmental actors, and other actors in the development field” (UNDP, 2011).

1.1.3. Conceptual Background

The conceptualization of adaptation mainstreaming derives from the “climate policy integration” introduced as an extension of the Environmental Policy Integration (EPI) principle⁴ in 2009. In this perspective mainstreaming of adaptation is considered as “a specific form of EPI” and the four indicators used for environmental policy integration

³ UNPEI (United Nations Development Programme–United Nations Environment Programme Poverty-Environment Initiative). 2009. Mainstreaming Poverty-Environment Linkages into Development Planning: A Handbook for Practitioners. Nairobi: UNDP-UNEP.

⁴ introduced in the Brundtland report, 1987

(**inclusion, consistency, weighting and reporting**; Kivimaa and Mickwitz: 2006)⁵ are also used “to analyze the extent to which adaptation is mainstreamed” (Janssen-Jansen, & Runhaar, 2012) ⁶

In most of the literature on climate change adaptation, the mainstreaming approaches divide into two different streams: those referring to a scientific framing (risk-oriented approach) and those referring to a human-security framing (contextual vulnerability approach) (O'Brien, Eriksen, Nygaard, & Schjolden, 2007)

Approaches following the scientific framing aim to secure the urban areas by improved infrastructure and measures for impacts mitigation. They are often also described as “mainstreaming disaster-risk reduction in development planning” (Khailania & Pererab, 2013) or “mainstream climate change adaptation into the comprehensive disaster management (CDM)”.

Within the same framing it has been emphasized the development of dedicated tools with an explicit focus on **screening for climate change** risks and for facilitating adaptation, where screening is undertaken to establish relevance to climate change and justify further examination of climate risks and is complemented by **assessment** which is a detailed examination of the nature of climate risk and of possible risk management strategies.

On the contrary, approaches referring to the human security framing are based on livelihood sustainability and improvement of adaptive capacity, which entails to address the structural inequalities for changing vulnerability context (circumstances) (O'Brien, Eriksen, Nygaard, & Schjolden, 2007, Simon, 2010).

1.1.4. *Discerning (Adaptation) Mainstreaming Frameworks*

Mainstreaming What into What

According to the level and sector, the aim of the mainstreaming process may vary from mainstreaming **adaptation objectives** to **measures** or **actions**.

The mainstreaming “object” also depends on the entry point chosen for mainstreaming, in other words on the choice to integrate adaptation into **policy, programmes, plans** or **project**.

Mainstreaming Adaptation into Development

“A recent study that reviewed more than 100 initiatives labelled as adaptation in developing countries found that in practice there is little difference between these adaptation initiatives and good development (McGray et al., 2007). The difference lies more in the definition of the problem and the setting of priorities than in the implementation of solutions” (Persson, 2008).

The UNEP-UNDP strategy⁷ in order to link adaptation and development, focuses on supporting people adaptive capacity and in straightening institutional adaptive capacity. Therefore within this strategy it is argued that “working through the determinants of adaptive capacity makes it clear that promoting capacity can complement or even advance the

⁵ “The first indicator of inclusion means that the issue is included in the policy process by referring to an issue and the related risks. Consistency translates into a shared understanding of the issue—both impact and measures— among actors, in policy documents or in policies in general. Weighting refers to the priority given to the issue in relation to the other objectives involved. Reporting refers to strategies and specifications for the implementation of adaptation, both ex ante and ex post (Kivimaa and Mickwitz 2006 p. 732). The ex ante reporting includes specifications and strategies regarding the distribution of responsibilities and the allocation of resources. The ex post reporting includes evaluation in the form of feedback that could stimulate a learning process (Sterman 2011; Moser and Ekstrom 2010)”. (Janssen-Jansen, & Runhaar, 2012).

⁶ See the review of EPI: Jordan, A. and Lenschow, A. (2010), Environmental policy integration: a state of the art review. *Env. Pol. Gov.*, 20: 147–158. doi: 10.1002/eet.539

⁷ The UNDP-UNEP Poverty Environment Program formed in 2005, in 2008 was scaled up for the period up to 2012. Moreover preparations are ongoing for a continuation of PEI for the period from 2013 to 2017.

broader objectives of poverty reduction and sustainable development. The issue is to recognise an opportunity for mainstreaming and to use it” (UNDP 2005: 212).

In the Box below are report the Levels of Intervention in Mainstreaming Climate Change Adaptation defined by UNEP-UNDP strategy.

Box 1 - UNEP-UNDP Strategy for Adaptation Mainstreaming

UNEP-UNDP strategy

Adaptation Mainstreaming can be seen as requiring three levels of intervention

1. *making **development efforts consciously aimed at reducing vulnerability** (not necessarily to climate change) **while avoiding maladaptation**. This can be seen as strengthening the base for adaptation by addressing the adaptation deficit and increasing the overall resilience of the country and population.*
2. *The second level is about **ensuring that climate change is considered in the decision,-making of relevant government agencies** so that (mainstream) policy measures catering to climate change are developed. This means not only climate-proofing policies but also addressing emerging needs for adaptation within the different sectors or geographical areas.*
3. *The third level calls for **specific adaptation policy measures** targeting issues that the first two levels have not yet tackled.*

Each of these levels requires changes in the way government deals with policy-making, budgeting, implementation and monitoring at national, sector and subnational levels

The framework proposed here consists of three components, each of which involves a set of activities or modules for which a range of tactics, methodologies and tools can be used:

- *Finding the entry points and making the case is concerned with setting the stage for mainstreaming. It involves understanding the linkages between climate change and national development priorities and understanding the governmental, institutional and political contexts that inform efforts to define pro-poor adaptation outcomes, find entry points into development planning, and make the case for adaptation mainstreaming.*
- *Mainstreaming adaptation into policy processes focuses on integrating climate change adaptation issues into an ongoing policy process, such as a national development plan or sector strategy, based on country-specific evidence (i.e., impact, vulnerability and adaptation assessments, socio-economic analysis and demonstration projects).*
- *Meeting the implementation challenge aims at ensuring mainstreaming of climate change adaptation into budgeting and financing, implementation and monitoring, and the establishment of mainstreaming as standard practice.*

Stakeholder engagement occurs throughout, from inception through policy development, implementation and monitoring

Source: <http://www.unep.org/pdf/mainstreaming-cc-adaptation-web.pdf>

Benefits of Mainstreaming

The benefits of the integration of policies and measures related to climate change adaptation into development policies, planning and sectoral decision-making, as well as of implementing adaptation mainstreaming initiatives/processes, could be as follow:

- To avoid policy conflicts
- Adaptation to climate change will become part of or will be consistent with other well established programmes, particularly sustainable development planning (Adger et al., 2007).

- Conversely, integration of climate adaptation into other development and poverty reduction policies and activities will help prevent actions which go against the goals of development or so-called ‘maladaptation’ (Huq et al., 2006).
- To ensure long-term sustainability (Persson and Klein, 2008) and to reduce risks and vulnerability.
- To ensure that future projects and strategies will reduce vulnerability by including priorities that are critical to successful adaptation.(Lasco et al. 2009)
- To reduce the sensitivity of development outcomes to both current and future climate change (Huq et al., 2003; Agrawala, 2005; Klein et al., 2005; Eriksen et al., 2007 cited in Persson and Klein, 2008)
- Greater efficiency compared to managing adaptation separately: making more sustainable efficient and effective use of financial and human resources than designing, implementing and managing adaptation separately and “stand-alone” from development efforts (planning) (Persson and Klein, 2008), leveraging the much larger financial flows in sectors affected by climate risks than the amounts available for financing adaptation separately (Agrawala, 2004; Srinivasan and Uchida, 2008).
- To enhance the performance and development contribution of each sector and each government body at all level.

Mainstreaming Adaptation into Urban Planning and Management

In the urban context, the mainstreaming approach comes from the broader field of sustainable urban development (Khailania & Pererab, 2013). For those authors climate change represents “a far more serious challenge to the contemporary realm of development planning due to the capitalistic approach to the use of natural resources, production, consumption, and also increasing disposal waste”. Economists highlight the need for improving economic resilience of cities; other scholars call for the mainstreaming of adaptation (and mitigation) **measures** into development planning and implementation processes; others claim the need to mainstream disaster-risk reduction into development planning (HFA).

The coupling of climate change and rapid urbanization (urban growth o urban development?), places increased strain on the urban-planning and management capacity of local authorities (Godschalk, 2003).

Given the participatory dimension of decision-making, some scholars emphasize the importance of inherent resilience conceptualized as the natural capacity of people, communities and habitats to cope with and adapt to disastrous events (Satterthwaite et al., 2007; Ernstson et al., 2010). It exists when people are sensitive to their vulnerabilities, and includes indigenous knowledge. According to Klein et al. (2003) the inherent resilience of the civil society and its adaptive capacity form the first line of defence. In other words, when the civil society, and its organizations, become adequately sensitive about their vulnerability to hazards.

Therefore, Godschalk (2003), Wamsler (2004), Campanella (2006) and Ernstson et al. (2010) have pointed out the importance of a participatory approach in urban planning and the utilization of indigenous knowledge and of inherent resilience in formulating urban planning strategies to adapt to climate change. However there is little evidence of the effort of urban planning for the incorporation and improvement of inherent resilience (Khailania & Pererab, 2013).

Integrating the three phases of the policy process - **understanding, planning, managing** (Moser and Ekstrom, 2010) - with the four indicator for environmental policy integration⁸ - **inclusion, consistency, weighting and reporting** (Kivimaa and Mickwitz: 2006) - and with the concepts of **conformance** and **performance** to evaluate the outcome of the mainstreaming process - derived from the strategic planning literature of planning (Faludi, 2000) - Uittenbroek, Janssen-Jansen, & Runhaar (2012) define a conceptual model of mainstreaming climate adaptation distinct from existing models that conceptualize adaptation as a dedicated policy domain. Framing the model they:

- Conceptualize “the policy process as one aiming at multiple objectives with which adaptation has to be mainstreamed”-,
- Cluster the barriers and opportunities into types (social, cognitive financial, technological and organizational/institutional) and link them to policy phases.
- Assume that “barriers created by other objectives can lead to the postponement or exclusion of climate adaptation”;
- Expect opportunities for adaptation “when its objectives are linked to other objectives in the policy process”;
- Assume a focus on performance as opposed to conformance increases the changes for mainstreaming climate adaptation.

They argue that a mainstreaming process is a dynamic one. The extent of **mainstreaming is constantly reconsidered as a result of barriers and opportunities** which derive from other objectives in the policy process. As a result of this dynamic character of the mainstreaming process, obtaining a climate-proof situation or conformance is hard to achieve. Therefore, it would **make more sense to evaluate mainstreaming processes on their performance**. This implies that strategies should be adopted that focus on establishing **synergies and making deliberate decisions**, that is, **taking into consideration the current and future impacts** (Ibid.)

2.2 Operationalizing Mainstreaming

1.1.5. Implementing Approaches: How to Achieve Mainstreaming

In the Environmental Policy Integration literature, tools and approaches for integration are usually grouped into four categories, which are neither mutually exclusive nor exhaustive (Persson, 2007).

The Procedural Approach

It aims “to introduce new or modify existing decision-making procedures, not least in terms of the information feeding into the decision. ... common procedural tools include ex ante environmental assessments of programmes and projects (e.g., strategic environmental assessment, SEA; environmental impact assessment, EIA), “green budgeting”, checklists, sector environmental reporting systems, internal or external audit functions, as well as improved consultation with and participation of environmental experts and stakeholders (EEA, 2005; Persson, 2007). [...] These tools create opportunities for integration and mainstreaming, but they do not guarantee that substance will follow from procedure (Lenschow, 2002). Importantly, they are often intended to operate within a more or less given organisational structure, knowledge context, and set of political priorities”. (Persson and Klein 2008)

⁸ to measure whether and to what extent climate adaptation is mainstreamed

The Organisational Approach

It aims to introduce organisational changes such as changing formal responsibilities and mandates, creating new institutions, structural changes of budgets. It entails changes “from the level of the individual desk officer to the organisation at large, such as staff training and awareness programmes; amendments of formal staff and departmental responsibilities and mandates (i.e., job descriptions and agency instructions); placement of environmental correspondents in sector ministries; staff rotation and network initiatives; merging of environmental and sector ministries; creation of new ministries; and structural changes of budget lines (Peters, 1998; OECD, 2002; Schout and Jordan, 2008)”. (Persson and Klein 2008).

Organisational changes should “encourage ‘ownership’ of relevant issues within the sectors and ensure that the right capabilities are in the right place. As well as assigning new responsibilities, various accountability mechanisms are used” (EU, 2012).

Organisational changes could be undermined by institutional inertia (whereas changes in procedures can be implemented more quickly) and sectoral compartmentalisation (and the linked competitive behaviour different professional backgrounds and perspectives of bureaucrats (Peters, 2001), and self-interest motives, reflecting budget competition and budget-maximising behaviour (Majone, 1996) (Persson and Klein 2008).

The Normative Approach

It implies a change in policymaking cultures and a “high-level commitments to the issue to be integrated, which in turn can be formalised and elaborated in strategies and policy frameworks and materially manifested in net additions of resources.” (Persson and Klein 2008). Instruments of this approach are “commitments to particular goals in treaties and directives, requirements for sectoral strategies, obligations to report performance, and external and independent reviews” (EU, 2012).

The Reframing Approach

It is complementary to those mentioned above and focuses “on reframing of traditional sector activities over the mid- and long-term” (Lenschow and Zito, 1998; Nilsson, 2005; Persson and Klein 2008). Unlike the operational approach, it helps to enhance “the understanding of the long-term outcome of and conditions for successful mainstreaming” (Persson and Klein 2008).

1.1.6. Participatory Scenario Development

Scenarios provide an opportunity to explore the future in the context of climate change at different scales. Within the backcasting approach, growing attention is being given not only to the developed scenarios, but also to the scenarios’ development process. This entails increasing emphasis on stakeholders’ involvement in developing scenarios, also identified with Participatory Scenario Development (PSD). Given the different degrees of participation in scenario development, varying from involving stakeholders as reviewers of the scenarios developed by climate change ‘experts’ to having stakeholders developed and assessed the feasibility of the scenarios, PSD is found to be a most effective process because it brings together stakeholder and ‘expert’ knowledge. The importance of participation in scenario development has been highlighted in the recent debate (Volkery et al., 2008; Patel et al., 2007; Stirling, 2006).

PSD is a workshop process crucial for adaptation mainstreaming because it provides “a useful way of exploring future development choices and pathways and the impacts of climate change and adaptation options, as well as the forms of policy or investment support needed to facilitate effective adaptation”. It is “a mean for policy makers and service providers to take

into account local people's priorities and knowledge in their decision-making". (Bizikova, Dickinson, and Pinter, 2010: 167)⁹.

Based on experiences and literature, World Bank developed a methodology for PSD under its Economics of Adaptation to Climate Change (EACC) Study¹⁰. This methodology has been adopted and adapted in different context (e.g. CDEMA, 2011)

The steps of PSD are defined as follows:

Defining the scope of the scenario process: the question (e.g. under available projections of climate change, how might the community/city/neighborhood adapt its plans and policies to make the most of their potential future development?)

Identifying key factors shaping the local development: gathering information about current system to understand the feasibility of certain measures in the short and long-terms and the capacity gaps with regard to development and adaptation needs

Developing scenarios: based on discussions of how the identified factors will evolve in the future, identifying a long-term target vision and a series of sequential decisions to attain that vision (Jaeger et al., 2000).

Introducing boundary conditions and reviewing scenarios: the identified scenarios should be carefully examined for their potential to determine climate change impacts on the attainment of local development visions by creating a dialogue on the "what if" question. Can the change or trend in the biophysical indicators be addressed within the future scenarios? This includes identifying impacts of climate change on the local environment and human well-being and then identifying adaptation options and "so what" questions.

Identifying policies and developing strategies: identifying policies that create the environment needed for moving from scenarios and identified adaptation measures to concrete actions, both at short and long-term.

In a recent paper reviewing scenario development and the participatory methods used to engage stakeholders (Reed et al. 2012), it is argued that the following steps are necessary to facilitate effective stakeholder participation in scenario development:

1. Define context (biophysical, socio-economic and political) and establish whether there is a basis for stakeholder engagement in scenario development;
2. Systematically identify and represent relevant stakeholders in the process;
3. Define clear objectives for scenario development with stakeholders including spatial and temporal boundaries;
4. Select relevant participatory methods for scenario development:
 - 4.a During initial construction of scenarios;
 - 4.b To evaluate and select scenarios for further investigation;
 - 4.c To support decision-making based on scenarios.¹¹

⁹ In the context of climate change adaptation, creating future scenarios can lead to the identification of the range of possible adaptation options, as well as the forms of policy or investment support that are needed to facilitate effective adaptation, but also to the realization that current operational and planning practices may need to be re-examined, and current vulnerabilities reconsidered, as part of a larger process of defining and implementing local-scale desired development priorities. The following three questions become especially important (Bizikova et al., 2009): What if? So what? What can be done? (World Bank: http://climatechange.worldbank.org/sites/default/files/documents/PSD-Pro-Poor-Adaptation_EACC-Social%20.pdf)

¹⁰ The design and implementation PSD workshops has been contracted by the World Bank's Social Development Group to a Joint Venture Consortium of ESSA Technologies Ltd. and the International Institute for Sustainable Development (IISD). The World Bank and the International Institute for Sustainable Development (IISD) jointly published a capacity development manual in December 2010 for localities to conduct PSD approaches to climate change adaptation that involve and consider the poor. This emerging tool was also applied in the World Bank's Economics of Adaptation to Climate Change analysis (World Bank 2010). The manual can be found online at: http://climatechange.worldbank.org/sites/default/files/documents/ESSA-IISD_CapacityDevManual-EACC-Social.pdf

1 Conclusions and Recommendations

It is considered that, as with other complex and cross-cutting issues that have broad social and economic implications, government intervention is most effective when implemented through the integration of climate change adaptation within policies for spatial planning and for development more generally (Klein, 2003). This integration should not be understood as the introduction of specific adaptation measures into the planning and implementation of territorial development strategies, but rather as mainstreaming, i.e. the consideration of climate change adaptation in the decision-making and planning processes. The advantages of mainstreaming include guaranteeing long-term sustainability of investments and reduction of sensitivity to environmental change (Hug et al., 2003; Agrawala, 2005; Klein et al., 2005; Eriksen et al., 2007). Mainstreaming is therefore viewed as a strategy for achieving more effective and efficient use of financial and human resources if compared to the definition, implementation and management of climate policies in a manner which is separate and independent from the development initiatives already underway.

The mainstreaming definition assumed in the ACCDar project consider mainstreaming an iterative process “of integrating considerations of climate change adaptation into policy-making, budgeting, implementation and monitoring processes at national, sector and subnational levels” (UNDP, 2011), It requires “a multi-year, multi-stakeholder effort grounded in the contribution of climate change adaptation to human well-being, pro-poor economic growth” (UNDP, 2011),

In the framework of ACCDar project this mainstreaming definition is a guiding concept for integrating CC issues into the existing Urban Development and Environment Management (UDEM) plans and programs rather than developing new specific adaptation plans. In other words, mainstreaming climate change adaptation is conceived as a process of considering effects of climate change on UDEM related plans and programs, and adjusting activities and approaches in order to mitigate/avoid negative impact of environmental changes on Dar’s coastal residents while supporting them in adapting their livelihood strategies to cope with those changes.

This overall **adaptation planning approach** is translated into a specific **mainstreaming approach** and into two specific **mainstreaming strategies** (Figure 1).

¹¹ Reed, M.S., Bonn, A., Broad, K., Burgess, P., Burt, T.P., Fazey, I.R., Fraser, E.D.G., Hubacek, K., Nainggolan, D., Quinn, C.H., Roberts, P., Stringer, L.C., Thorpe, S., Walton, D.D., Ravera, F., Redpath, S., 2012. Participatory scenario development for environmental management: a methodological framework. Sustainable Learning Working Paper Series No.1, [online] URL: <http://sustainable-learning.org/workingpapers/new-working-papers>

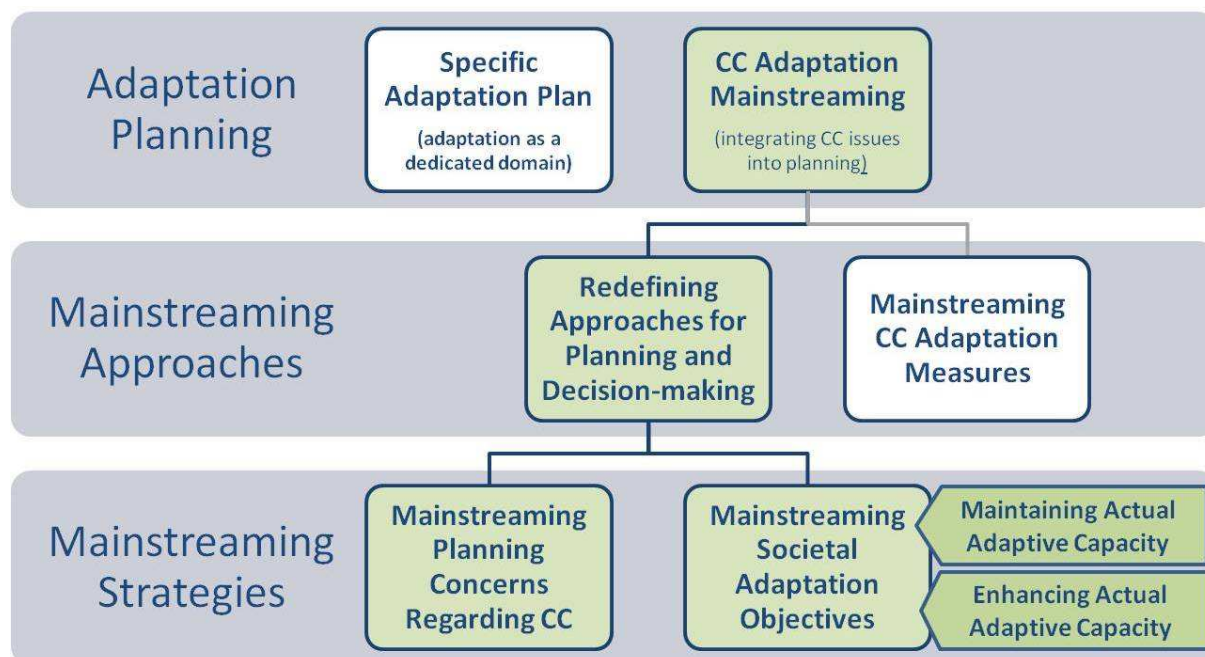


Figure 1 - Mainstreaming Framework

In particular, the chosen mainstreaming approach aims, not to add adaptation objectives or measures to the objective already included in plan for urban planning and environmental management, but mainly to introduce procedural and organizational changes, to redefine UDEM decision-making, planning, and implementation approaches.

These changes will be implemented through two specific mainstreaming strategies. The first is devoted to **mainstreaming planning concerns regarding Climate Change**, thus it identifies measures and strategies to adjust the UDEM projects, plans and programs against predicted effects of CC. Indeed, changes in resource regime and consumption, linked to environmental changes (e.g. lack of energy due to poor availability of water) might undermine the implementability, sustainability or effectiveness of plans and projects. Similarly, chosen technologies, infrastructure and service systems could not be feasible under certain environmental changes or at risk due to the uncertainty in climate predictions.

The second mainstreaming strategy aims to **mainstream societal adaptation objectives** by both maintaining actual adaptive capacity (mitigating measures) and enhancing people's adaptive capacity (proactive measures).

Through the training course, addressed to the Dar es Salaam LGAs officers, (held during the third year of ACCDar project) these strategies will be discussed with the training participants, Therefore, it will be decided if one or more of the above mentioned mainstreaming strategies could be feasible according to the characteristics of Dar es Salaam.

As highlighted in the previous paragraphs, most of mainstreaming research and practices have been focussed on national level implementation while neglecting the role of LGAs. However the Tanzanian Local Government Reform Programme (LGRP) initiates the process of decentralization by devolution, giving to LGAs delivery crucial role in UDEM implementation. For this reason a mainstreaming strategy is needed not only at the strategic (policy) level but also at the operational level, involving municipal (local) governments and institutions. (URT - PMO-RALG, 2007:66).

In this regards, in the ACC Dar project is assumed that, taking advantage from their local and sectoral perspectives, the LGAs' officers can operate in understanding, planning and managing climate threats through identifying barriers and opportunities for adaptation and pursuing two sets of adaptation objectives.

Therefore at the operational level they could play a leading role in procedural and organizational approaches (see § 3.2) while normative and reframing approaches are more suitably implemented at the strategic and policy level (e.g. national level).

In order to both identify the objectives of the chosen mainstreaming strategies and make effective the possible procedural and organizational changes and adjustments in decision-making and implementation processes, a participatory process need. It is particularly relevant because enables to develop future scenarios and to have a better understanding of autonomous adaptation strategies and options as input for mainstreaming. To this purpose it could be helpful to identify relevant pilot areas for the participatory process implementation.

Moreover, since urban local government in developing countries, together with the high uncertainty of climate change and related effects, are facing the coupled effect of the high dynamism and fast urban growth, and the lack of resource for environmental planning and management, it is hypothesized that performance-based decision making (and objectives) leads to a more successful outcome for mainstreaming climate adaptation than conformance-based decision making (following Uittenbroek, Janssen-Jansen, & Runhaar, 2012), In designing strict norms for climate adaptation the risk is to disregard the search for synergies between sectoral and adaptation goals, (crucial for feasibility and effectiveness of climate adaptation measures) while putting all efforts on achieving the norm only.

Finally, if the existing strategies for pursuing the UDEM goals are amiable to improve or limit adaptive capacity (e.g. preventing their access to resources or their coping strategies), and reduce or increase their vulnerability, the sustainability and impact of the UDEM related projects, plans and programs can be increased by integrating climate change concerns. From this perspective the aim is different from a “specific” community-based adaptation project, where the explicit goal is to build resilience to climate change. Mainstreaming climate change adaptation is expected to ensure that UDEM strategies are not at odds with reduction of vulnerability to climate change both now and in the future.

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