

Human settlements and adaptation planning processes: overview, good practices and lessons learned

BACKGROUND

This synopsis provides a brief overview of the impacts of climate change on human settlements, and highlights the good practices and lessons learned in adaptation planning processes addressing human settlements at all levels. The synopsis is drawn from the findings of the following documents prepared under the Nairobi work programme (NWP):

Documents	Information source
“Good practices and lessons learned in adaptation planning processes addressing ecosystems, human settlements, water resources and health, and in processes and structures for linking national and local adaptation planning: a synthesis of case studies” (FCCC/SBSTA/2015/4 ; 2015)	170 case studies contributed by Parties and NWP partner organizations.
“Synthesis report on methods and tools for, and good practices and lessons learned relating to, adaptation planning processes addressing ecosystems, human settlements, water resources and health, and good practices and lessons learned related to processes and structures for linking national and local adaptation planning” (FCCC/SBSTA/2014/4 ; 2014)	Submissions from two Parties and 18 NWP partner organizations.

An overview of the impacts of climate change on human settlements

- The increase in impervious surfaces together with changing precipitation patterns leads to flooding or increased flood risk.
- Sea level rise increases the likelihood of high floods and seawater intrusion posing a risk to coastal settlements, from small settlements in small island developing States to megacities such as New York City.
- Increasing pressure from urbanization and exploitation of natural resources leading to the loss of protective ecosystems additionally increases the vulnerability of coastal settlements.
- Densification of urban population and a lack of green space, compounded with more severe and frequent extreme heat, increase the urban heat island effect in cities, leading to poor air quality and exposing a higher percentage of people to health risks.

KEY FINDINGS

The table below presents emerging good practices and lessons learned on the various aspects of adaptation planning for human settlements, as well as key recommendations to scale up adaptation planning and action for human settlements.

Building an ‘actionable’ knowledge base

How to build and “actionable” knowledge base?	<ul style="list-style-type: none"> • Establish an inclusive, interdisciplinary and systematic assessment of climate impacts and future climate risks to human settlements that: <ul style="list-style-type: none"> * Builds on localized science; * Combines local, traditional and scientific knowledge by engaging community-based knowledge holders as well as scientists; and * Involves all members of affected communities (including indigenous people, and both men and women);
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How to build an “actionable” knowledge base?	<ul style="list-style-type: none"> • Provide training and establish ongoing communication of scientific results to the community-based knowledge holders to make co-production of knowledge effective; • In the framework of a monitoring and evaluation mechanism, connect science and practice over the long term through partnerships with members of affected communities and/or with local institutions.
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Case study 1 - World Federation of Engineering Organizations Knowledge Development and Capacity Building Programme

Engineering Vulnerability Assessment of Infrastructure to Climate Change for the Sewage Collection and Treatment System in Limon, Costa Rica. The Instituto Costarricense de Acueductos y Alcantarillados de Costa Rica, the Instituto Meteorológico Nacional de Costa Rica and the Colegio Federado de Ingenieros y de Arquitectos de Costa Rica, under the guidance of Engineers Canada, developed an analysis of the vulnerability to climate change of the underwater outfall of the City of Limon, Costa Rica. The analysis, conducted using the engineering vulnerability protocol of the Public Infrastructure Engineering Vulnerability Committee, integrated the sewer system, pumping system, wastewater preconditioning plant and the controlled outlet system into the sea (underwater outfall). The result of this analysis was the prioritization of the actions to be carried out by the entity in charge of this infrastructure taking into consideration climate change based risks (nature and intensity of events).

Ensuring inclusive and cross-sectoral adaptation planning for human settlements

Key principles	<ul style="list-style-type: none"> • Social inequalities and differentiated vulnerability including gender considerations need to be addressed; • The vulnerability of the most exposed populations has to be reduced.
What does it take?	<ul style="list-style-type: none"> • Implement an informed and iterative planning process with the participation of the most vulnerable communities; • Enhance synergies and cooperation: <ul style="list-style-type: none"> * Across various sectors and cross-cutting areas (e.g. water, infrastructure, disaster management, health); * Between top-down and bottom-up approaches (e.g. linking community-based learning with municipal policy and strategies); * Among donors, local research centres and non-governmental organizations; • Have a municipal leader/champion to drive the adaptation action forward, and build credibility and social acceptability of actions; • Ensure high-level coordination among multiple sectors that have convening power and leadership, in the framework of an effective institutional set-up; • Include adaptation in all existing municipal (or settlement-wide) development plans and sectoral strategies; • Implement an integrated approach with both ‘hard’ (infrastructure) and ‘soft’ (practice and process) measures; • Maintain the high level of time commitment from all actors throughout the stages of adaptation planning and balance diverse expectations by remaining flexible and inclusive; • Provide financial resources, including through sustainable financial schemes.

Which co-benefits can be expected?

- Plans and strategies that may otherwise negatively impact on adaptation initiatives will be better aligned;
- Financing will be secured;
- Implementation of adaptation actions will be facilitated thanks to effective coordination among key stakeholders.

Which strategies or methods can be implemented?

- Economic and livelihood diversification, including through the development of green jobs, could serve as an effective approach in creating climate resilient settlements;
- Investment in engineering low-cost “prototypes” can act as a springboard for climate-proofing settlements, especially in rural and low-income settlements;
- Community-based adaptation facilitates the identification of the underlying causes of climate vulnerability, supports appropriate choices of adaptation options, is cost-effective, and builds on existing knowledge and capacities in addressing climate variability.

Case study 2 - Innovative school designs increase climate resilience in Mozambique

The UN-Habitat project implements the architectural concept of “double-purpose” public buildings: a social facility such as a school, which serves its own purpose at normal times, but which is designed in a way that it can cope with extreme environmental conditions and be used as a shelter in case of floods or cyclones. In Maniquenique, the building sits on a 1.5 metre-raised platform to serve as a shelter for 850 people in case of natural disaster, but functions normally as a school. This simple and low-cost pilot intervention effectively demonstrates the applicability of the concept of “living with” natural hazards, and provides a concrete answer in terms of adaptation to climate change and disaster risk reduction.

Scaling up adaptation planning and action

What does it take?

- Support and fund pilot initiatives;
- Address the vulnerability of the poorest population in rural or urban settlements (particularly those living in informal settlements) by reducing their underlying socioeconomic vulnerability and developing their adaptive capacity;
- Ensure the transfer of sufficient financial and technical resources, from the national level to the municipal/local level, to enable the implementation of adaptation plans and actions, including “hard” adaptation solutions;
- Build a network of stakeholders to sustain adaptation action over time and despite political changes.

POSSIBLE NEXT STEPS FOR ENHANCED KNOWLEDGE SUPPORT¹

Making knowledge more relevant and accessible

- Building networks and collaborative partnerships that effectively connect knowledge holders.

Addressing critical knowledge gaps

- Closing the gap between research outputs and operational needs of users, regarding in particular downscaled climate data and local social and economic data, so as to integrate climate change vulnerability considerations into the planning process;
- Developing clear measures of effectiveness to demonstrate the impact of adaptation planning and action on reducing the vulnerability of different groups, sectors and/or locations.

For further information, the [Adaptation knowledge portal](#) provides access to:

- Documents [FCCC/SBSTA/2015/4](#), [FCCC/SBSTA/2014/4](#);
- Detailed [case studies](#) on adaptation planning for human settlements;
- More information on [tools and methods](#) for adaptation planning related to human settlements;
- [Additional knowledge resources](#).

¹ Owing to limited technical work on human settlements, only a few recommendations can be made at this stage as to making knowledge more relevant and accessible and to addressing critical knowledge gaps.