

Thematic Area: Developing Practical Toolkit in Support of Adaptation Planning and Implementation

UNDP: Developing Country-level Climate Profiles

Outcomes and impacts of actions

Characterizations of future climate conditions, or scenarios, constitute a major component of Vulnerability and Adaptation (V&A) studies and are a key input for most adaptation policy-oriented V&A assessments. However, non-Annex I countries (NAI) have been confronted with difficulties in developing climate scenarios of satisfactory quality, in particular to support policy-relevant V&A assessments during the development of the Initial National Communications. This is due to constraints in technical capacity, data and information availability and financing. Under Second National Communications (SNCs), NAIs have identified the refinement and improvement of climate scenarios as a priority for V&A work. In order to respond to this priority and address this information gap, country-level climate data summaries were prepared with funding from the GEF/UNDP/UNEP National Communications Support Programme (NCSP), and the UK Government Department for International Development (DFID). The **Climate Change Country Profiles Project** aims to provide a set of country-level information including historic trend and projected future changes using outputs from the most up to date Global Climate Model (GCM) experiments and robust analytical tools.

As part of this project, fifty-two country profiles for NAIs were developed in order to produce an 'off the shelf' analysis of climate data. The profiles also make available underlying national data for use in further studies (in particular for the referenced V&A studies under the Second National Communications projects). For each of the fifty-two countries, a report contains a set of maps and diagrams demonstrating the observed and projected national climates as well as maps depicting changes on a 2.5° grid, with summary tables of the data. Finally, a summary of the data is provided, placing it in the context of the country's general climate. The files are user-friendly, manageable and in text format which can easily be downloaded, reviewed and manipulated.

In addition to the basic climate data and summaries, the country profiles also include analyses of the following climatic parameters on an annual and seasonal basis:

1. Mean temperature
2. Mean monthly precipitation
3. Indices of extreme daily temperatures:
 - (a) Frequency of 'Hot' days
 - (b) Frequency of 'Cold' days
 - (c) Frequency of 'Hot' nights
 - (d) Frequency of 'Cold' nights
4. Indices of extreme daily precipitation
 - (a) Proportion of total rainfall falling in 'heavy' events
 - (b) Maximum 1-day rainfall
 - (c) Maximum 5-day rainfall

Based on a survey of participating countries, carried out by the NCSP in November, 2008 and August, 2009, the country profiles have supported NC country teams that are working to complete their V&A assessments to refine and strengthen local studies. Further, the profiles can be used as a source of climate information to fill data gaps to compare with different climate models, and to produce relevant assessment of their climate risk as a means of communicating with policy makers.

Due to its successful reception, additional countries have requested to be included in a next phase of the project. This phase may involve the country teams more directly in the process to further develop capacity. This active involvement would provide the opportunity for these data-gathering exercises to be replicated at local level. Developing this capacity through training on the use and application of data is important for the adaptation decision making processes. Further, the inclusion of data on extreme events is another future potential addition to the country profiles, as a means of estimating climate risk.

Emerging good practices and lessons learned

Importance of Local Data: One of the main constraints found during the development of the country profiles was the limited participation of national stakeholders. As a result, the climate profile outputs did not include local data or consultations with national teams. The inclusion of local level data would help improve accuracy and relevance of the generated data. While some countries are using data produced by regional centres, countries will need models with strong correlations to observed data and with high prediction capabilities. This type of model will need to be run by local experts and using local observed data.

Downscaling: Some countries have requested to downscale the results of the GCMs in order to increase the applicability of these outputs. These new outputs would then be able to reflect local variability in weather patterns, which is particularly important for small island countries and mountainous countries.

Capacity building: Most countries recognized the importance of including national stakeholders in the data generating process and in the development of the climate profiles.. This would help countries use the climate profile data more effectively and to further develop capacity and expertise at the local and national level.

Value of climate scenarios: Through the process of country profile development and from country feedback, it was recognized that even though climate scenarios can be a resource intensive and lengthy process they are valuable for supporting NAI, particularly for National Communications. Reasons cited include: to communicate with policy-makers and the general public on climate change; for policy dialogues and awareness raising respectively; and to provide inputs for climate change impact, adaptation and vulnerability assessments

Reliability of Country Profile Development: It was reported, through country surveys, that the country profiles could also be used for other thematic areas related to climate change, including defining fragile ecosystems, biodiversity and other projects concerned or affected by the impact of climate.

Emerging opportunities, challenges and further needs

Generating data for climate change studies is fundamental for preparing National Communications and further identifying climate risk at the national and local levels. The development of tools such as the UNDP Climate Change Country Profiles have proven critical for supporting countries in developing their own path for adaptation planning and implementation. Opportunities exist for strengthening partnerships around such exercises and developing national and local capacities to generate information on their own.