

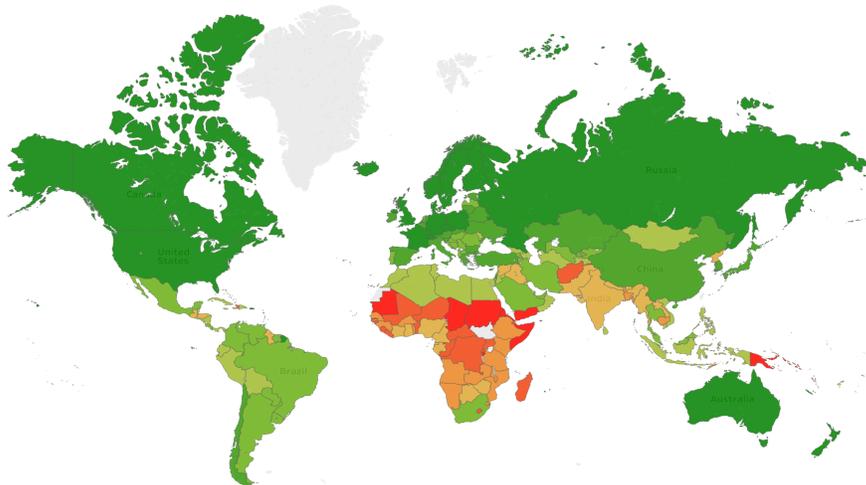
September 30, 2016

ND-GAIN and its key partner the Institute on Environment (IonE) of the University of Minnesota wish to submit the following feedback on the Adaptation Committee (AC) and Least Developing Countries Group (LEG) mandates stemming from decision 1/CP.21, paragraph 45 (b). With regards to ND-GAIN and IonE expertise, this document presents technical information related to vulnerability assessments at various scales, urban adaptation assessments, and climate adaptation tracking.

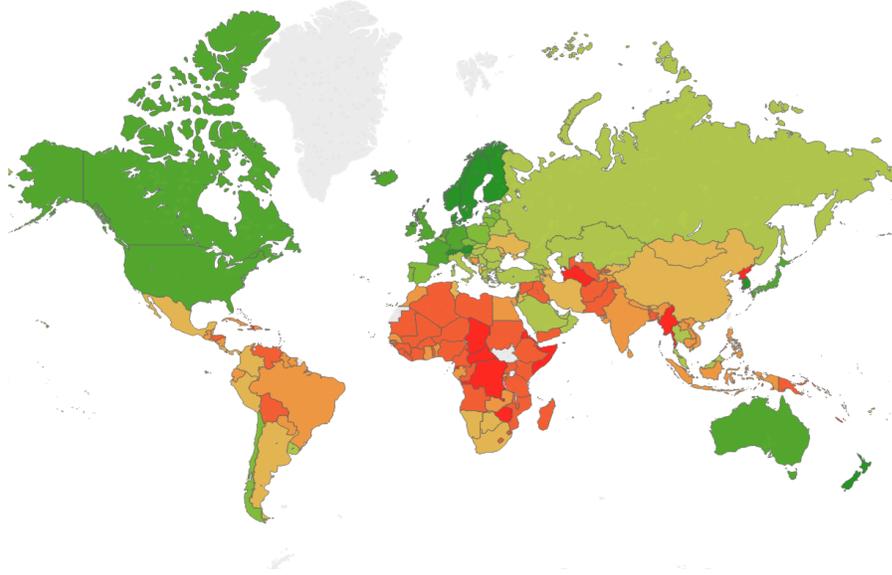
(1) *What information/data or metrics are needed for review of adequacy and effectiveness of adaptation and support of adaptation?*

Improving current vulnerability and readiness assessments, as well as tracking tools to facilitate decision-making, and monitor adaptation progress, at global and local scales is needed. **There is currently no agreed metric to measure and monitor country changes in climate change vulnerability.** One useful tool for the assessment is the Notre Dame Global Adaptation Index (GAIN), further referred as a Country Index. The index assesses a country's vulnerability to the changing climate, impacts on social sectors, as well as a country's readiness to effectively utilize adaptation investment (Figure 1). It is based on publicly available data, focusing on actionable adaptation measures.

(A) **Vulnerability to climate change:**

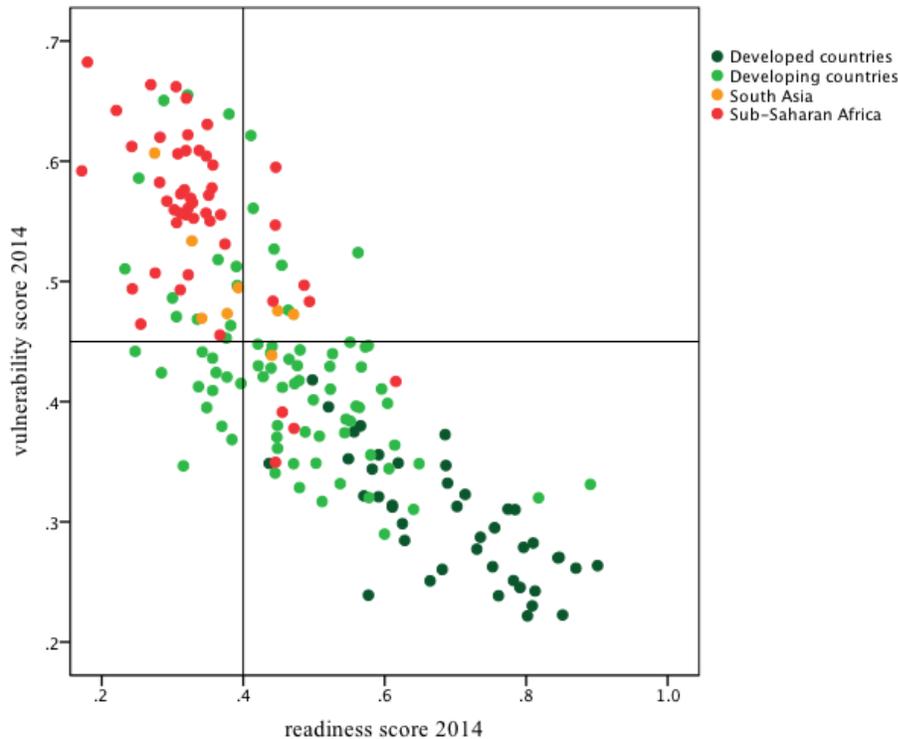


**(B) Readiness – country capacity to absorb adaptation investment:**



**Figure 1.** (A) Vulnerability to climate change: green indicates low vulnerability, red indicates high vulnerability and (B) Readiness to absorb investment for adaptation green indicates high readiness, red indicates low readiness in 2014.

The index has a series of sub-measures that seek to capture the *biophysical* impacts of climate change, the *socioeconomic* features that reduce/enhance sensitivity to climate change and capacities to adapt, and the *economic, governance, and social* preparedness to use and leverage adaptation resources. The two dimensions, vulnerability and readiness of the Country Index are visualized in the Figure 2 and provide a global view on distribution of climate risks and adaptation opportunities. The matrix maybe useful for country governments and funding agencies to both evaluate the effectiveness of adaptation and provide information to facilitate adaptation support.



**Figure 2** Vulnerability – Readiness Matrix, based on 2014 data, each circle represents a country. Most of the Sub-Saharan Africa and South Asian countries are most vulnerable and least ready to absorb adaptation investment.

The Country Index presents an **important starting point** in discussion in implementation of climate adaptation planning and financing. However, there is a need **to refine the index to help local adaptation decision-making** within the countries with diverse regional characteristics and countries most vulnerable to the impacts of climate change. In 2014, the Country Index ranked 21 countries as the most vulnerable, and all of them were Least Developing Countries.

The strength of the Country Index is its national scope but it is also a weakness. We call on the Adaptation Committee **to advance collection of local and regional data** for compilation of vulnerability and readiness metrics that would help Parties to the Convention to better formulate as well as implement National Adaptation Plans. Thanks to international efforts some biophysical data are becoming available (e.g. FAO soil maps, climate data, land use change covers) at a finer scale and the ability to derive information about distribution of human populations and infrastructure is also improving. However, there is still a lack of finer scale, socioeconomic data. Some data can be collected at state, provincial, even city levels through

census data (e.g. demographic data, economic development indices, etc.), but most of the data related to particular local features that contribute to the social vulnerability and readiness are not readily available. For example, data on infrastructure, medical facilities, and governance quality are challenging to obtain.

Further, increased urbanization in developing countries calls for assessment of climate change adaptation at a finer scale. While it may be more relevant to develop a scalable assessment framework that can be applied to evaluate effectiveness of adaptation plans, legislation, and actions at the project level, such a framework may still be challenging to find. For cities we are currently building an [Urban Adaptation Assessment](#), which started from the Country Index framework but was modified to apply to the city-level. The urban framework aims to help decision makers prioritize city adaptation actions. So far, plans are to expand this framework in US cities but the framework can be applied anywhere.

We are also advocating for tools and metrics for **adaptation tracking at global scale**. Such metrics should be consistent with our understanding of *what climate change adaptation is*, and would allow the Adaptation Committee to capture policy processes that drive adaptation actions. In addition, it will allow for monitoring and evaluation of present and future adaptation progress in different countries around the world. Starting from national adaptation tracking helps to conceptualize a framework from which to build a local level index. Data will then be needed to capture detailed adaptation goals and to establish causal links between actions and outcomes of adaptation. **The adaptation tracking metrics will require comprehensive and dynamic data sets that reflect adaptation actions beyond the business-as-usual scenario**, for instance, the type of strategies that address the disproportional climate risks, rating of the policies that enable adaptation investments from private sectors.

(2) *Which lessons learned, good practices and challenges and barriers have been encountered in such reviews?*

We are in an excellent position as academic and neutral institutions to facilitate dialog between science in climate change adaptation and policy-making community as well as local research institutes. Our team at the Notre Dame Global Adaptation Initiative and Institute on Environment of University of Minnesota is open to working closely with local researchers and governments of different Parties to the Convention, Adaptation Committee and Least Developing Country Group to refine the Global Adaptation Index and Urban Adaptation Assessment. In addition, we wish to start a dialog on data needs for vulnerability and readiness assessment that fulfill a needs of different Parties to the Convention. We are ready to demonstrate how these tools can be useful for effective adaptation planning and policies.