

Note on Global Track for Economics of Adaptation to Climate Change Study

Since its inception, the Economics of Adaptation to Climate Change (EACC) study has had two broad objectives. The first was to help decision makers in developing countries to better understand and assess the risks posed by climate change and to better design strategies to adapt to climate change. This requires costing, prioritizing, sequencing, and integrating robust adaptation strategies into their development plans and budgets. Furthermore, this requires strategies to deal with high uncertainty, potentially high future damages, and competing needs for investments in social and economic development.

The second objective was to develop a “global” estimate of adaptation costs to inform the international community’s efforts, including UNFCCC and the Bali Action Plan, to provide access to adequate, predictable, and sustainable support, and to provide new and additional resources to help the most vulnerable developing countries meet adaptation costs. Such a global estimate of the costs of adaptation to climate change in developing countries could greatly support the Copenhagen process.

From the outset, however, the EACC team has argued that these two objectives are somewhat at odds with each other. Supporting developing-country efforts to design adaptation strategies requires analyses at the more local level, incorporating country-specific characteristics and socio-cultural, environmental and economic conditions. On the other hand, providing macro-level information to both rich and poor countries to support international negotiations and to identify the “overall costs” of adaptation to climate change involves a more aggregate analysis, leading to a trade-off with the capacity to focus on specificities of individual countries.

While recognizing this tension, the EACC team developed a methodology that would meet both study objectives, and one that would do so by linking the country-level analysis with the analysis to estimate the global costs of adaptation. In particular, the country case studies were to be used to develop unit least costs of adaptation and then to apply these to similar adaptation conditions in other developing countries as defined by GIS data or other metrics. Specifics of this overall approach for the agricultural and health sector were laid out in the methodology report. At the same time, the report acknowledged that any estimate of the costs of adaptation to climate change for all developing countries based on the finding of six case studies would be prone to large errors but that proposed methodology would attempt to narrow the range of uncertainty.

Consistency between the 6 case studies

As the study team began the country level analysis and thought further about its approach to develop the global estimate, it came to the conclusion that the approach of generalizing from the six country cases was not the best approach to generate the global number. Rather, a more robust, global, and to an extent country level, estimate could be obtained

by pursuing a two track approach – a global track that would use sectoral country-level¹ but global data sets and a more structured framework to produce the global estimate, and a case study track that would use the methodology laid out in the report to develop country-level estimates. As detailed below, and to the extent possible, both approaches are to be linked to further strengthen both the global- and the country-level estimates. The team’s decision was fully corroborated by the study peer reviewers, who were in fact skeptical with the possibility of scaling up lessons from 6 case study countries to produce global estimates.

Value Added of the Global Track

First and foremost, the global track has a number of advantages over the previous approach to obtain the global cost estimate based on generalization from six case study countries. For one, the global track will allow the team to account for international dimensions of adaptation that affect cost estimates but are not likely to get captured in the country case studies. One such dimension is agricultural trade. Country case studies are likely to hold world agricultural prices as given and will then estimate cost of adaptation in agriculture as the cost of investments made in the agriculture sector that bring national nutritional standards to the pre-climate change levels. This approach, however, will likely overestimate adaptation costs as it may be cheaper for the country to instead import food to restore nutritional standards. The global track will allow us to estimate the extent of cost savings that will result from allowing for global trade.

Another advantage of the global track is in terms of timing of deliverables, and in particular, having a global estimate in time to inform the pre-Copenhagen discussions. Due to various reasons, including availability of local consultants, political buy-in from country counterparts, and absorptive capacity of in-country processes, it was determined that it would not be possible to complete country case studies in time to use them to generate a global number and have the results ready in time to inform the Copenhagen process. Moreover, ensuring adequate local participation and buy-in requires allowing adequate time for in-country processes to play out.

In terms of methods, the global track will go well beyond the largely back-of-the-envelope types of methods used by the existing literature. In the infrastructure sector, for example, rather than using a uniform percentage change in annualized cost per unit of infrastructure across all types of infrastructure assets to estimate cost of climate proofing, the study will generate engineering-economic estimates of costs of maintaining the performance of infrastructure assets in the face of changed exposure to floods, wind storms, etc, by countries and by type of asset. No serious attempt has been made to carry out this kind of analysis for any country across the range of infrastructure up to now, even in the US or Europe. Furthermore, while the estimates in the previous literature only consider cost of climate proofing, holding quantity of infrastructure constant, our work will also account for adjustments in the quantity of infrastructure in response to the increase in its cost and change in climate variables, changes that will affect estimates of

¹ For the agricultural sector, for example, the analysis will be done at 5 minute level and therefore at the significant level of detail for most countries. Similarly, in the infrastructure sector the unit of analysis is expected to be a region or a state of 10-20 million people.

adaptation costs. Finally, since the global estimate will be obtained by adding up from the country-level, the approach developed for the global estimate can also be used to derive estimates at the country-level.

Also, unlike the prior literature, the global track will specify the development baseline more thoroughly and consistently across sectors. Only once a baseline has been well established does it make sense to estimate deviations from the baseline needed, in turn, to estimate adaptation costs. This process allows then for a delineation of adaptation from development costs, another value added of the global track.

Value Added of the Case Study Track

The study will help develop methodologies and processes that countries can use, well past Copenhagen, to develop strategies for climate change adaptation in a resource constrained environment. In particular, the case studies will help build capacity in the country to work on climate change adaptation.

Additionally, unlike the global track, the case study track will look at a wider range of potential adaptation measures, from soft measures such as changes in policies and institutions to hard measures such as building sea walls. These studies will also highlight country specificity, especially on impacts on the poorest of the poor. Furthermore, adaptation cost estimates will be based on strategic thinking that allows for optimization inter-sectorally and inter-temporally providing answers to fundamental questions such as “where and when” to adapt. Also, in terms of methods, the case studies will add value by showing how qualitative and quantitative approaches can be combined, especially drawing on the results of the innovative participatory scenario workshops.

Links between Global and Case Study Tracks

To the extent possible given the new timelines for the country studies and the tight deadline for the global estimate, iterations in which results from the global study are compared in detail with the results from the country case studies will be used as a basis for refining methods used in both approaches and improve the quality of both sets of estimates. For one, country-level estimates from the global track will be used to fill in gaps and provide estimates for sectors that are not covered in particular case studies. Also, country estimates can be used to assess the potential scale of savings that can be made in adapting to climate change by adopting something other than a “one size fits all”. The crucial gap between the global approach and the country studies is that between (a) doing the same things differently, and (b) doing different things. The history of economic policy is full of expected disasters that did not happen – the world did not run out of natural resources and billions of people have not starved.

It is important to note that though the current approach of the dual track will provide more robust and systematic estimates of costs of adaptation globally and nationally, these are only first steps in a long process of understanding the responses that will be required to cope with the impact of climate change on developing countries facing different circumstances and opportunities.