Views on the integration of socio-economic information into vulnerability assessment

Submission of SustainUS

SustainUS, the United States network of youth advocating for sustainable development, is in strong support of research and analysis on matters relating to the availability of information on the socio-economic aspects of climate change and improving the integration of socio-economic information into impact and vulnerability assessments, including information on the development of socio-economic scenarios and for understanding adaptive capacity. We wish to express our support for the work of the Nairobi Work Programme; we believe that international collaboration to advance our understanding and approaches to adaptation is crucial. Because the impacts of climate change are already evident in many parts of the world, we believe that efforts must be expedited for the sake of safeguarding the life of millions of people at risk of natural disasters, particularly those most vulnerable.

Risk: A symptom of failed development

In 2000, the United Nations agreed on a comprehensive set of targets and goals to combat the most daunting challenges facing humanity: poverty, environmental degradation, health, and education. Billions of dollars are being invested in reaching these Millennium Development Goals (MDGs), and the little progress that has been achieved might be in danger of being curtailed by the increasing frequency and intensity of natural disasters. Development policy must be combined with risk reduction, in order that sustainable development is a tangible and long lasting result.

Some organizations, such as the United Nations Development Programme (UNDP), have started to consider the connection between natural disasters and human development; others, like the World Bank, are considering climate risk in all of their investments. However, a comprehensive approach for social and economic development in light of disaster risk, particularly in vulnerable areas, is still in the making. As humanity starts to grasp the confirmed and potential impacts of climate change, it is necessary to reconsider how socio-economic status can affect vulnerability to climate variability. For those nations that have actually met the commitments agreed at the World Summit on Sustainable Development and created National Sustainable Development Strategies (NSDS), it is necessary to modify those strategies to enhance national, regional, and local adaptive capacity. For nations that still have not considered how to make progress toward sustainable development, it is imperative that, for the sake of future generations, they consider how their societies can cope with a changing climate. As the global climate changes, communities are starting to understand how vulnerable they are. NSDS must

consider adaptation needs and vulnerability to climate change, and include socioeconomic considerations to enhance resilience.

Because effective adaptation in the future starts in the present, SustainUS strongly supports efforts in the Nairobi Work Programme to better develop and integrate socio-economic information into adaptive capacity building efforts. Adaptive capacity is dependent on socio-economic conditions, like access to natural resources and access to information and technology in a community, so successful adaptation planning must integrate that information. Additionally, adaptive capacity cannot be viewed as anything "inherent" to a social system; in other words it is not built in. Though system and sub-system scale projects are necessary to build adaptive capacity, the international community must address larger-scale processes.[1]

I. Measuring Vulnerability: One size does not fit all

Overall, any approach or indicator for adaptation should be 1) measurable, 2) relevant, 3) limited to key factors, 3) analytically and statistically sound, 4) understandable and easy to interpret, 5) sensible and valid, 6) accurate and reproducible, and 7) cost effective.[2] A common understanding of what is meant by vulnerability is essential to develop a coordinated adaptation strategy. SustainUS recommends the vulnerability definition used by the International Federation of Red Cross and Red Crescent, which says that vulnerability is "the characteristics of individuals or groups in terms of their capacity to anticipate, cope with, resist and recover from the impact of a natural or anthropogenic disaster, considering that vulnerability is made up by many political, institutional, economic, social, cultural, and environmental factors". One of the biggest challenges for any vulnerability assessment process is keeping it cost effective while still sensitive and specific to hazard-dependent and hazard-independent contexts.

Global databases are insufficient and lack detailed information to understand vulnerability at a sub-national level. While there has been progress in understanding vulnerability at a superficial national level for cross-country comparison, the current indicators do not provide insight for designing national policy or determining national priorities. Global indicators for vulnerability assessment are backward looking, and as such can only provide decision-makers with information to decide if a country is at risk of experiencing economic or human losses based on previous disasters. While high frequency of natural disasters could indicate high vulnerability, addressing disaster risk

1 Brooks, Nick "Vulnerability, risk and adaptation: A conceptual framework. Tyndall Centre for Climate Change Research, Working Paper 38, November 2003. pp. 12.

2 Birkmann, Jorn. "Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies" Indicators and criteria for measuring vulnerability: Theoretical bases and requirements, p 55-77. United Nations University, 2006

requires of forward-looking approaches to index vulnerability in NSDS by addressing the complexities that make risk at the grassroots level.

For decision-makers to stream vulnerability into the work of formal and informal institutions, it is necessary to select indicators that are appropriate to the context. V.W. Maclaren recommends selection indicators by first defining relevant goals for the vulnerability assessment.[3] Once the goals are set, it is necessary to determine the scope and purpose and the temporal and spatial bounds to then select the appropriate themes and indicators. Depending on whether the assessment is to be issue or causal based, potential indicators must be selected balancing between both historical and forward-looking approaches. These indicators must be evaluated against previously developed criteria to guarantee that selected indicators will respond to the goals set for the vulnerability assessment. Having verified the appropriateness of the indicators, researches can collect and analyze data. Once this data is prepared and presented, it is then important to assess the statistical performance of such information in order to be useful for policy-making.[4] Selecting, developing, and testing indicators requires an understanding of the context they apply to, both physical and socio-economic, and must be done with the ultimate goal of using information to promote changes at the policy and grassroots level.

II. Available Approaches to Integrating Socio-economic Information: A few stars in the dark sky

Years of work and research have gone into providing approaches to understand the vulnerability and adaptive capacity of our environment and society. These general approaches provide a good starting framework in order to map the gaps in knowledge and theory in creating policies that integrate socio-economic information into climate change adaptation planning.

The **Americas Indexing Programme (AIP)** from the Universidad Nacional de Colombia and the InterAmerican Development Bank provides a framework for systematic and quantitative benchmarking of countries between 1980 and 2000. The data-driven approach provides for the depiction of disaster risk at the national and sub-national level. Its main advantage is that it allows disaggregating results and identifying factors that should take priority in risk management actions. While measuring the effectiveness of those actions, it allows for controlling risk representing elements of vulnerability.[5] The

3 Maclaren, V.M in Birkmann, Jorn. "Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies" Indicators and criteria for measuring vulnerability: Theoretical bases and requirements. United Nations University, 2006, p 55-77: 66.

4 ibid.

5 Cardona, Omar D. "Measuring Vulnerability to Natural Hazards: Towards Disaster Resilient Societies" A system of indicators for disaster risk management in the America. United Nations University, 2006, p 189-210

Programme developed four different indices, each providing different information to policy makers. These are the disaster deficit index, local disaster index, prevalent vulnerability index, and risk management index. Although the AIP aims to produce indicators that are transparent, robust, representative, replicable, comparable, and easy to understand, the expertise required to manage the data is a challenge. In the addition, the complexity of the data and limited availability in some parts of the developing world might limit the replicability of the approach. SustainUS believes this approach should be considered in the NWP process because it offers a more thorough localized analysis to aid in policy-making.

SustainUS identified the **Emergency Events Database (EM-DAT)** as the most accessible database for decision-makers at any level. EM-DAT was created in 1988 and is maintained by the World Health Organization (WHO) Centre for Research on Epidemiology of Disasters (CRED). EM-DAT data includes a disaster reference number with location and date; a disaster group (natural disasters, technological disasters and complex emergencies); disaster type; number of killed, injured, homeless, and a sum of the total affected; estimated damage; and trends and relationships for the period 1900-2005. While it has been a useful tool for comparing risk amongst different nations and for ranking priorities from disaster groups and types at the national level, it does not provide information to measure risk and vulnerability at a sub-national level. The standardization of the data contained in EM-DAT limits users from disaggregating information for more specific nationals needs. While data from EM-DAT has been used to estimate risk amongst nations, its broad scope limits its use for policy-makers.

The **International Red Cross and Red Crescent** has identified six steps that are necessary for risk reduction for natural disasters. These six elements for reducing vulnerability include: 1) disaster preparedness and mitigation; 2) disaster planning; 3) disaster response; 4) disaster recovery; 5) disaster mitigation; 6) development. SustainUS believes that each of these steps is relevant to reducing vulnerability to the specific impacts from climate change. Furthermore, in each of the steps the use of socio-economic information is necessary to develop a functioning disaster preparedness program. Moreover, this model for improving social resilience indicates that the institutions that utilize data can be just as important as the data itself.

The experience of developing disaster preparedness programs in the **Cayman Islands** has been widely studied because of its success at improving resilience to natural disasters, and the knowledge gained from the experiences can offer useful insights to the Nairobi Work-Programme process.[6] The Cayman Islands disaster preparedness program demonstrates that vulnerability reduction effectively functions through institutions and regulations on national and sub-national levels of governance. In effect, the six steps from the Red Cross were integrated into several scales of governance, producing a highly

6 Tompkins, Emma et al. "Natural hazards and climate change: what knowledge is transferable?" Tyndall Centre for Climate Change Research, Working Paper 69, March 2005.

effective program. Each step relies heavily on the use of socio-economic information: 1) establish a government agency to coordinate all emergency management; 2) establish a fund for post-disaster recovery; 3) adopt legislation to support the prevention and mitigation of all kinds of disasters; 4) conduct disaster management studies and make them available; and 5) prepare comprehensive full disaster economic recovery plans.

III. Needs Gaps Barriers and Constraints

SustainUS believes that the most immediate challenge and need for climate change adaptation is to develop indicators to address human vulnerability that are centered on health, economic losses, poverty, food security, loss of natural heritage, lost of biodiversity, conflicts, and indirect losses. Also, to develop a global approach to reduce vulnerability, it is necessary to enhance understanding of how climate change will impact every region with more detail. In order to accomplish those objectives is it necessary to obtain: better baseline data; dynamic models of socio-economic conditions to take account the developing, time-varying nature of global climate change; impact assessments across a range of scenarios and assumptions to enable the assessment of risk, particularly in regions composed primarily of developing countries where resources for research and assessment have been inadequate to date; and more and better integrated assessments across sectors, from climate change to economic or other costs, across countries and regions, including adaptations and other socioeconomic changes. These needs have been stressed by the Intergovernmental Panel on Climate Change (IPCC), the preeminent authority on climate science pertaining climate change adaptation, which agreed in its last session that a new set of scenarios of future emissions and socioeconomic conditions will be needed before a possible Fifth Assessment Report.[7]

SustainUS also believes that it is necessary to provide greater support for local adaptation initiatives, which includes providing them with data to assess and reduce vulnerability at the local level. To do so it is necessary to strengthen institutions and regulations to facilitate the use of socio-economic data for the purpose of adaptive capacity building. Currently many of the systems of transmitting information and analysis available are rigid and linear. The international community must strive for transparent, robust, representative, replicable, comparable, and easy to understand mean of transferring the utilizing information for adaptation. Currently, the expertise required to manage the available data is lacking in many areas of the world. In addition, the complexity of the data and limited availability in some parts of the developing world might limit the replicability of any approach.

The international community is currently making progress towards integrating socio-economic data into climate change adaptation planning, but significant institutional

7 Intergovernmental Panel on Climate Change "The Physical Scientific Basis: Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change." Climate Change 2007.

barriers remain. These barriers operate on multiple scales and can cause a variety of problems. In general, though, they fit into three categories:

1) Socio-economic data does not yet exist on the local level to support local adaptation initiatives. Instead the existing data is generally only available on regional or global scales. The very nature of adaptation is local, thus for local communities to act appropriately data must exist on the local scale and be accessible to decision-makers at the community level of governance.

2) Effective institutions and regulations are needed to facilitate the use of socio-economic data for the purpose of adaptive capacity building. In the absence of government agencies or NGOs there is little ability to either generate socio-economic data relevant to adaptation or use such data. Furthermore, even if such institutions exist, they must be properly integrated into means for transmitting relevant information.

3) Flexible and dynamic systems for transmitting socio-economic data are key to its successful generation and dissemination. Currently many of these systems for transmitting information are rigid and linear. For example, the National Adaptation Programme of Action (NAPA) process used by the UNDP and the Global Environment Facility (GEF) functions on very formal reporting procedures that do not necessarily fit well with the needs and abilities for developing country communities.

IV. Establishing and Utilizing Socio-economic Information

Mainstreaming Climate Change Adaptation

Organizations in both the environmental and development communities have been actively considering the impacts of climate change, but are still in the process of determining how climate change adaptation can be integrated into ongoing development work. This mainstreaming of climate change adaptation into international development has the potential to significantly expand the understanding of climate change impacts and establish a broader constituency concerned with the effects of climate change on the global poor. This integration also offers the potential to combine socio-economic data and tools from international development into climate change adaptation planning, which in turn can develop a systematic process to facilitate the use of social indicators in climate change adaptation planning.

One significant source of climate change vulnerability is underdevelopment. Efforts to facilitate development thus also have the potential to improve adaptive capacity to climate change. It is important to recognize, though, that not all development projects successfully reduce climate change vulnerability. As climate change is mainstreamed into development, that awareness will help facilitate planning for the respective goals of both the climate change and development communities. At the very least such mainstreaming will provide the institutional means for data sharing between the climate change and development communities.

Market-based Approaches

The premise of attempts to generate and utilize socio-economic information for adaptation is that international organizations, governments, and/or NGOs will use it for more effective adaptive capacity building. An alternative approach to adaptive capacity building involves the use of market mechanisms. In particular, several NGOs along with the World Bank have focused on climate insurance as a way to provide the means by which individuals in developing countries can protect themselves against the impacts of climate change.[8] In addition to providing protection against climate change, climate insurance programs can serve to generate relevant socio-economic information within specific communities. Data from such programs can indicate what categories of people are most at risk based on individuals' perceptions of their own vulnerability rather than just outside measures. Furthermore, socioeconomic information generated from insurance programs or other sources can be applied in the design of insurance programs. Rather than just utilizing top-down means for generating and applying socio-economic information in climate change adaptation, market-based tools offer the potential for a bottom-up approach.

Developing Effective Institutions

The selection of approaches selected in this submission is small, and it is not intended to suggest approaches that should work everywhere. Vulnerability and adaptive capacity are context-driven, and the need for strong and effective institutions is paramount to respond to the diversity of global challenges. SustainUS believes that the NWP should also play emphasis on the role of institutions in managing risk and the necessary steps to develop capacity for develop and implement local risk reduction measures at the local and sub-national level. The process of deliberation, coordination, implementation, and evaluation of any measure, before, during and after any emergency, must be considered thoroughly to identify national capacity gaps. The emergence of new institutions might be necessary, particularly institutions capable of understanding and addressing the underlying causes of disaster risk and implementing lessons learned from previous disaster cycles at the sub-national level. For these institutions to emerge, good governance is necessary. Like the UNDP has expressed, "the chrematistics of good governance — participation, rule of law, transparency, responsiveness, consensus orientation, equity, effectives, efficiency, accountability, and strategic vision — are key for sustainable development and disaster reduction."[9]

The impacts and dangers of climate change have become evident, and we should

8 United Nations "Sustainable Development Innovation Briefs: Developing index-based insurance for agriculture in developing countries." March 2007.

9 UNDP. "A Global Report: Reducing Disaster Risk – A challenge for Development" UNDP, Bureau for Crisis Prevention and Recovery, 2004. pp 75

not wait any further to mainstream vulnerability and disaster risk reduction approaches into the national agenda. It is imperative to move the notion that climate change is a matter of ministries of environment only, and bring it forth as an issue to ministries of planning, finance, economic development, health, etc. Global development efforts are at risk, and we must rethink disaster risk for sustainable development that benefits current and future generations.

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