

Bottom-“wide” Approach to Climate Change - Typology and Analysis on Climate Vulnerability Reduction through Voluntary Actions

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Abstract

Climate change risk is mostly and often unfairly cast upon those who are vulnerable. As one of the effective and spreadable means in reducing human vulnerability to climate change, this paper and its findings address the role, strength and limitations of voluntary actions. Through an extensive review of various climate change literature, projects and interviews among practitioners, the authors looked at the types of interventions and results that voluntary actions have achieved. The paper introduces various types of voluntary activities such as awareness raising, community mobilization and empowerment, community-based adaptation and mitigation, and voluntary environmental regulations and schemes. Such bottom-“wide” approach to climate change is closely linked with civil environmentalism with broad focus and also scientifically strengthened by its engagement with civic science. It urges shifting the mind-set of international development agencies to flexibly accommodate and maximize the potential of voluntary, bottom-wide actions in combating climate change. Finally, the paper lists out pieces of recommendation to further improve and fully utilize voluntary actions in reducing vulnerability on the ground, by emphasizing long-term orientation, capacity development, monitoring and evaluation and building partnerships at the local level.

Keywords: climate change; vulnerability; volunteerism; community-based; bottom-up approach

1. Introduction

The aim of this study is to identify and analyze the nexus between climate change and voluntary actions and look at the ways how these actions can reduce vulnerabilities associated with climate change. True, that the general concept of volunteerism has existed for long and its importance has been well appreciated by general public, but analytical work on what voluntary actions can actually bring and realize on the ground has not been well documented or studied particularly in the environmental field (Measham and Barnett, 2007). This study focuses further onto the climate change field.

Some types of volunteering in environment field are known as “ecological citizenship” or “global citizenship” (Saiz, 2005; Lorimer, 2010). But these are written rather with the perspective of the North, by emphasizing formal or organized voluntary actions by people who can afford to do something “extra” and to do “good” for the environment (McDougle *et al.*, 2011). In the field of disaster risk reduction or disaster management, the role of community-based risk management has been paid much attention and drew much academic interest (Brower and Magno, 2011; Connors, 2012). This study can be supplemental to such disaster risk reduction related discipline, but further focuses the

role of voluntary actions also some additional climate vulnerable sectors, such as agriculture and forestry management practices.

Despite the critical role that voluntary actions and volunteerism have been playing in the field of climate change, earlier studies nonetheless do not seem to focus on the role of voluntary actions as effective intervention that can parallel to the state-led traditional multilateral environmental negotiation and implementation. In fact there are just so much that is left to do when it comes to research for volunteerism even to this date (Ellis, 1985; United Nations Volunteers, 2011). It lacks the perspective that the interventions driven by voluntary actions can go beyond some ad-hoc, benevolent, one-off interventions done sporadically by the volunteers. Voluntary actions are still quite undervalued and not well-acknowledged (Measham and Barnett, 2007). They are treated and recognized still as something separate and, if any, merely supplemental interventions to already-existing top-down interventions.

2. Materials and Methods

This study was conducted primarily between September 2011 and February 2012 through a combination of literature review, stock-taking exercise of projects of

UN Volunteers Programme¹, and interviews with colleagues and practitioners who have been engaged with these projects. The literature review part involved initial screening of about 2,000 items of papers, reports and books that are considered to be dealing with the topics of our interest, i.e. voluntary actions and in climate change field. These are further filtered down to a total of 55 cases of papers, reports, books and development projects. The criteria for this filtration were: (1) the existence of description on the role of volunteerism and voluntary actions; (2) the existence of description on their results--as opposed to mere inputs such as hours or number of volunteers participated--that voluntary actions have brought; and (3) these items and cases must be directly or indirectly addressing the risks posed by climate change.

In this screening and literature review process, the UN General Assembly's definition of volunteerism was used, which says volunteerism is "undertaken of free will, for the general public good, and where monetary reward is not the principal motivating factor" (United Nations, 2002). With the interest of space, various voluntary works done and supported by religious groups, individual philanthropists and celebrities worldwide is not presented in this paper in avoiding broadening of this paper's scope.

3. Results and Discussion

3.1. Types of Organizations that Involve Voluntary Actions

The abovementioned filtered cases were further categorized by the type and size of organizations that involve voluntary actions. The rationale for this further categorization was that there are indeed quite a number of different organizations that send and involve volunteers and voluntary actions in the world, ranging from those at a community level to an international level, as well as the different modalities through which volunteer's involvement and voluntary actions are seen. The result of this categorization is shown in Table 1.

The organization types identified in this process are: (1) Individual, Grassroots Organizations; (2) Local Organizations; (3) International Organizations, Volunteer Involving/Sending Organizations; (4) Organizations Promoting Non-State Environmental Governance Scheme; and (5) Academic Institutions and Scientific Community.²

3.1.1. Individuals and Grassroots Organizations

Individual leaders and grassroots organizations can engage community members that no other organization

Table 1. Types and examples of host organizations that mobilize volunteers and implement voluntary actions

Organization Type	How Voluntary Actions Are Shown	Examples
(1) Individual, Grassroots Organizations	Through the actions of selected entrepreneurs and grass-roots leaders	Individual leaders, local farmers, community-based organizations
(2) Local Organizations	By formally/informally involving volunteers for local causes	Self-help groups, local NGOs
(3) International Organizations, Volunteer Involving/Sending Organizations	By directly/indirectly mobilizing volunteers through programs and projects	VSO UK, International Federation of Red Cross and Red Crescent Societies, International Union for Conservation of Nature (IUCN)
(4) Organizations Promoting Non-State Environmental Governance Scheme	By consumers' voluntary spending and behavior for social causes (responding to voluntary systems)	Fair trade organizations, Forest Stewardship Council
(5) Academic Institutions and Scientific Community	By voluntary actions of teachers, students, amateur and professional scientists	Universities, research institutes, Intergovernmental Panel on Climate Change (IPCC), IUCN

¹ The United Nations Volunteers (UNV) programme is the UN organization that contributes to peace and development through volunteerism worldwide. Administered by United Nations Development Programme (UNDP), UN Volunteers Programme with Field Units in 86 countries is represented worldwide (United Nations Volunteers, 2011).

² Though it was difficult to draw a fine line that separates (1) Grassroots Organizations and (2) Local Organizations, the criterion used in distinguishing these two was whether or not the organization has legal or some kind of official registration as a non-governmental organization or non-for-profit organization whose activities do not go beyond one country at the time of its founding. Thus most of the national level NGOs and NPOs are included in this category of (2) Local Organizations, but not those that were spontaneously formed without formal registration as organization are categorized into (1) Grassroots Organizations.

types can, because of their comparative advantage of being part of their own local communities and having local knowledge. Just through a simple action of like-minded community members coming together and uniting voluntarily can help reduce climate vulnerability faced by the locals.

Individual and grassroots activism can turn into a much wider international movement. The Green Belt Movement founded by Dr. Wangari Maathai, a Nobel laureate, of Kenya is one of the best examples that maximized various advantages that voluntary actions possess. The characteristics of its movement is that by mobilizing rural, poverty-stricken women and men in developing nations, it has not only reduced climate vulnerabilities among the people and the land that are facing the risk of desertification, landslide, flooding, and drought, but also encompassed the arenas of environmental conservation, democracy, women's empowerment, community development, and conflict resolution. As a result, this movement has planted more than 30 million trees across Kenya, while continuing to facilitate the planting of trees elsewhere (Online Activism Institute, 2010).

3.1.2. *Local Organizations, NGOs*

Deforestation is the leading cause of greenhouse gas emissions and global warming on earth (Dooley, 2011; McIntyre, 2012). There have been a number of interventions implemented to protect forestry and biodiversity. But more often than not, physically fending off forest areas through top-down order can create wrong incentives at the local level.

Farmer Field School (FFS) is a global movement and is an approach that addresses specific need in agriculture, namely integrated pest management. FFS is a voluntary, group-extension process based on adult and non-formal education methods. Following the successful FFS approach, experimental Climate Field Schools (CFS) was set up in Indonesia to increase farmers' knowledge on the climate and improve their response to it. Volunteer farmers started organizing themselves into groups, alliances, networks and associations, and became involved in planning and implementing their own interventions. These interventions ranged from research and training, to marketing and advocacy work. As a result, farmers became more aware of how to use climate information in managing their soil, water and crop resources for best effects. Farmers who were initially trained later started training other members of their community and continued working as a group after the training came to an end, and have succeeded in scaling up sustainable farming practices. Volunteer farmers also became facilitators and started conducting their own CFS, which consequently became a direct

contribution to the local extension services (Siregar and Crane, 2011).

3.1.3. *International Organizations, Volunteer Involving/Sending Organizations*

International organizations and Volunteer Involving/Sending Organizations, that are in close touch with other organizations that specialize in climate change, are in better position to identify the regional fragile hotspots and particularly vulnerable sectors against climate risk.

A number of projects of Community-Based Adaptation (CBA) to climate change and its activities are undertaken as part of the United Nations Development Programme. The aim is to strengthen the resilience of communities to the adverse effects of climate change. One of the characteristics of CBA activities, especially with relation to voluntary actions, is that CBA activities need to bring concrete benefits to the daily lives of local communities, in addition to introducing a number of climate resilient practices. Since daily livelihood is often a top priority for vulnerable communities, such double objectives should be met within each project framework. Another factor that makes CBA unique is incorporation of climate science, scenarios and projections (i.e. top-down information provided by external groups of people) into a localized CBA activity. Such a top-down information flow needs to be balanced by a simultaneous flow of information from bottom to top. Some of the cases above involve active partnership with committees of public-sector stakeholders, ensuring local knowledge is fed into municipal, district and national planning processes.

Voluntary actions, especially through the form of their commitment and inclusive participation, are crucial in realizing sustainable CBA activities. Most of the volunteers working in these vulnerable communities come from different communities in the same country, which enables them to spread an "internal" voice within the communities. This gives them a greater influence in convincing the communities of the actual benefits of CBA work and is in contrast to many bilateral/multi-lateral projects, which often use external interventions and activities that are specifically tailored "for" and "toward" communities, and not necessarily "with" communities.

3.1.4. *Organizations Promoting Non-State Environmental Governance Scheme*

Voluntary actions in the climate change field do not always have to be of not-for-profit nature. There are types of organizations and schemes that involve voluntary actions, but in a form of involving business, both consumers and suppliers. This type of voluntary

business and environmental management scheme is referred as part of non-state environmental regime or governance (O'Neill, 2009). It is the system that guides market transactions toward sustainable, climate resilient environmental practice. "Market" is, by a broad definition, involves voluntary exchange of goods and services, but business and the private sector have been often regarded as the main culprit of exacerbation and degradation of environment. There are various benefits that multilateral environmental governance does not offer, whereas such voluntary environmental governance scheme does.

The prime example of such scheme is Forest Stewardship Council (FSC), the world's largest certification scheme for sustainable forest management. FSC was established in 1993, now covering more than 150 million hectares spreading over 80 countries as in 2012 (Forest Stewardship Council, 2012). How FSC functions is that it developed a list of mandatory criteria for sound forest management where third party forest management certifier is commissioned to audit and certify forests according to the criteria. There is also a mechanism for tracing products from a certified forest through complex supplier chain all the way to the consumers to ensure traceability whereby consumers can confirm the quality and environmental friendliness in FSC certified products. FSC is a voluntary scheme where consumers can voluntarily choose products. However, the purpose of timber companies wishing to comply with FSC standards may be for their financial interest, so judging from the definition of volunteerism, out of the parties who are involved around FSC, i.e. NGOs, forest owners, timber companies and forest communities, timber companies' behavior may not be regarded as voluntary actions.

There are many other schemes such as FSC existing, including for chemical production, coffee plantation and fishery management, etc (O'Neill, 2009). All of these functions almost the same as other international environmental governance regimes, but without relying on traditional government authority and are completely on a voluntary basis. These schemes are often not regarded as such, but it is important to know that their main driver is founded on the voluntary actions.

3.1.5. Academic Institutions and Scientific Community

Voluntary actions and their contributions within scientific community in general are yet another neglected and unrecognized means to addressing to climate change issues. In particular, those that are known as science volunteers and civic science have been very influential in improving the scientific understanding of climate scenario and projections, especially through their contributions for environmental

monitoring (Stokes *et al.*, 1990; Pfeffer and Wagenet, 2007; Backstrand, 2005). Science sets the basis for needed actions for climate change adaptation and mitigation. Main science volunteering is found in research, especially monitoring, activity.

Citizen science volunteers are deployed in a variety of cases. The volunteers are often from the local and are capable of gathering local information directly. Thus after a short training, they are able to collect reliable data. Through volunteering, they themselves not only increase understanding of climate change, e.g. monitoring Amazon deforestation rate, endangered species sample collection, but also realize significant scientific contributions that were otherwise too costly or difficult had this been done purely through a formalized, rigorous way (Carolin *et al.*, 2012).

Professional scientists also play an important role in this as well; their voluntary actions support collection of data and analysis on a pro bono basis in the cases of, e.g. The IUCN Red List of Threatened Species, and also IPCC's work in general. In fact, IUCN, when looked through the lens of voluntary actions, has the largest number of science volunteers than any other organizations or institutions, by having more than 10,000 volunteers who can be readily deployed for science voluntary activities (IUCN, 2012). However it is important to be aware of the difference of motivations that may differ from those of citizen, non-professional scientists, and of professional ones, as the professional ones do have their career motivation for publishing data and papers. Being part of prestigious IPCC community and its work on climate change science can be beyond doubt huge honor for which any scientists could wish.

3.2. Voluntary Action Strengths

In addition to the categorization of voluntary actions according to the types of host organizations, unique strengths and characteristics from the collected voluntary actions were identified. The resulting types of strengths that voluntary actions have are: (1) awareness raising; (2) replication; and (3) capacity development and empowerment. Each is surely accompanied with its weakness and limitations.

First, voluntary actions have a definite comparative advantage in raising awareness among general public and especially vulnerable local communities and their members who are suffering from various climate hazards. However, wider awareness raising and community-level voluntary actions are sometimes not compatible because the local volunteers respond to local issues, and its scope can be limited to the specific geographic areas, which often prevents wider awareness raising. For this, more structure, i.e. going beyond

individual or community-based organization level, may be needed. Specifically on climate change field, this incompatibility poses another difficulty, since climate risk analysis is understood primarily in a top-down manner. Physical range that climate projections and simulations are applied can be quite large and too broad to be specifically applied to the community level. In it lies the difficulty of utilizing voluntary actions based on their own local conditions for the purpose of climate vulnerability reduction.

Second type of strength that voluntary actions possess is its replication potential. The difference between awareness raising and replication is that while the former can only be spreading a message, or a “call” for action, the latter is spreading the action itself. So in terms of actual impact on the ground vis-à-vis vulnerability reduction of local populations, this strength is to be regarded more effective and impactful. As is with the very nature of voluntary actions, replications that happen voluntarily in other communities can be sustainable; without relying on external funding or project source, but one that is boosted mainly by the spirit of solidarity and cooperation.

Replication in the context above is in other words horizontal scale-up (e.g. to other communities nearby). But there is the other important type of replication, which is vertical scale-up (e.g. becoming part of local government policy and activities and incorporation of climate science and its projections or scenarios). This vertical scale-up requires incorporation of replicated voluntary actions into more formalized institutions and higher authorities. When considering reducing climate vulnerability through voluntary actions, this vertical scale-up is particularly important. This is the point that differs from other local voluntary actions in that it must incorporate climate-science-related scenarios and projections into a localized prioritization and planning process.

When considering awareness raising activities or replication, an element that is at work in both cases is development of capacity and, in many cases, empowerment. In general, vulnerable communities and its members are often less capable of avoiding the risk of climate hazards, such as flood, drought, landslide, cyclones and hurricanes. In all the cases described in this paper clearly show the effect of capacity development and empowerment. The Green Belt Movement, in addition to its impressive replication results, has been fueled by women where they were given opportunities to unite and form stronger bond and thus social capital. Spreading climate information and conducting training for local farmers who are exposed to climate risk is one but many ways of empowering them; with these additional information and capacity, they can now be

aware of alternatives--be they new farming techniques or negotiation practice--that were otherwise not available to them. The case of Tanzania's voluntary forest land management represents the role and potential of voluntary actions characterized by its capacity development, empowerment and creating a voluntary environmental regulation scheme all conducted by the local volunteers, i.e. engaged communities themselves.

3.3. Recommendation for Better Engagement of Voluntary Actions

In order to fully utilize voluntary actions, organizations that host volunteers may wish to incorporate the following pieces of lessons learned and recommendation.

First, it is vital for international organizations and volunteer involving/sending organizations to become flexible enough to take account of community-raised priorities and timeframes because externally-driven approaches do not often match the priorities of communities or last long (after a project's end). The voluntary actions that contribute to reducing climate-related vulnerabilities among local communities will be required to incorporate the climate projections and scenarios that are provided through a top-down manner. But rather than pushing externally defined timeframes and funding cycles in implementing such voluntary actions, it is the long term orientation and flexibility that host organizations as well as funding donors need to adopt.

Second, one cannot overemphasize the importance of awareness raising and knowledge about climate change and people themselves. Many, especially vulnerable local communities and members do not recognize that their communities are being threatened by climate change and are exposed to future risk of climate change. But at the same time, they may not know that they already possess applicable knowledge to combat the climate change impact. Replication both at a horizontal level and vertical level, it all starts with awareness raising and the knowledge that anyone can indeed contribute to reducing climate vulnerabilities through various forms from grassroots tree planting to citizen science monitoring activities.

Third, any organizations that involve volunteers and voluntary actions need to urgently start recording the result of voluntary actions themselves, going beyond the anecdotal level of description. This is because there is a critical shortage of data that value and quantify voluntary actions' contributions. Out of the total 2,000 cases reviewed for this research, only 2% reported results. A tiny 1.5% of all reviewed cases had anecdotal description of voluntary actions' results (31 cases) and only 0.5% with quantitative results (10 cases). Finally,

mitigation, adaptation and scientific efforts cannot be the work of just one person, or organization, or one nation. Rather, it relies on the common effort of all stakeholders, particularly at the local level. Building and strengthening partnership at the local level is at the heart of voluntary actions as well.

4. Conclusion

Voluntary actions have been paid only scant attention among researchers (Measham and Barnett, 2007). But the contributions and critical complementarity that voluntary actions bring in realizing environmental sustainability and reduction of climate related vulnerability should be recognized as an important means in solving climate change issues. Without the role of voluntary actions, awareness raising, replication, capacity development and empowerment--all of which are critical in bringing more climate resilient and robust communities on the ground--may not be achieved.

As mentioned above, there are two types of replication, one horizontal and the other vertical. The importance of bottom-"up" activities should not be disregarded; the efforts that bring the activities at the local level to go up vertically to local and national level. This being an effect of vertical scale-up, the comparative advantage and strength of voluntary actions lie in its effect on horizontal replication as well. It is the voluntary actions that hold the key in bridging horizontal and vertical replication, both of which are indispensable for realizing climate resilient communities. A countless number of development projects in climate change field, especially those focusing on reduction of local climate vulnerability, often fail to achieve this horizontal replication (especially after the end of project funding cycle), which leaves a number of patchy, anecdotal project achievements. Voluntary actions hold the key of complementing this shortcoming.

Voluntary actions have its unique assets of bottom-"wide" nature, spreading across other communities and countries at a horizontal level. Voluntary actions have been contributing significantly to reduction of climate vulnerability at individual, grassroots, local and international level. It is high time that the role of voluntary actions in the field of climate change should be shed light by researchers, policy makers and citizens, i.e. ourselves.

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