

The Arkleton Trust UK

**International Mapping Exercise: Rural Community
Adaptation to Climate Change
North America, Central America and South America**

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Introduction

As part of The Arkleton Trust's continued work on climate change, the Climate Change International Mapping project aims to map rural community initiatives to adapt to climate change around the globe with the purpose of creating a baseline from which other larger organisations and institutions could take forward further research. To this end, The Arkleton Trust contributed towards four mapping exercises covering the following broad areas of the globe: Africa, Americas, Australasia and Europe.

This report summarises the findings of the mapping exercise in North America, Central America and South America. The report firstly explains the selected criteria of the mapping exercise followed by a presentation of an up-to-date database as the ongoing product of the exercise. These descriptive sections are followed by an analytical section that aims to elaborate on some of the main issues that emerged around climate change adaptation in the area. Finally, in the light of the identified issues, some concluding remarks are made.

Different initiatives on Water and Forestry management, as well as the development of sustainable sources of energy were identified. Furthermore, complexity of adaptation processes and their incontestable relation to vulnerability, particularly poverty and exclusion emerged as central issues. Certainly, the forthcoming Arkleton Trust Seminar 2010 will provide a space to discuss the emergent issues of this Mapping exercise in the light of potential further action research on Community Climate Change Adaptation.

Search

The mapping exercise mainly consisted of an online search of community initiatives in response or anticipation to climate change and its impacts in the American continent. In some cases the inquiry also included a brief interview to some key contacts within the participant organisations in order to gain a better understanding of the nature of the projects, the degree of involvement of the rural communities; to explore their visions of climate change and their own capacity to adapt as well as identifying other potential contacts.

During the initial search process practical and conceptual criteria had to be specified with the purpose of making the mapping exercise manageable and internally consistent. In this section the criteria are specified.

Area

The area defined by The Arkleton Trust was the Americas which includes:

- North America
- Central America
- Caribbean Islands
- American Pacific Islands
- South America

Numbers

In this mapping exercise the limit regarding the number of initiatives mapped across the region was imposed by time restriction, there were listed as many initiatives as possible within the time frame of the mapping project.

Time scale

Initially the mapping exercise aimed to focus on initiatives that were undergoing at the time of the search or had taken place in the last year (2009-2010). However, it was found that not all the projects/initiatives with online presence were up-to-date and the time scale of the projects/initiatives was not clear. Additionally, it is believed that although some initiatives had been completed sometime before the mapping exercise started, they add value to the database since they represent experiences from which lessons can be learnt and further links can be developed in the light of community adaptation to climate change research. Thus, the database includes a range of initiatives/projects that have taken place within the last five years.

Adaptation

Although many definitions of adaptation to climate change exist, there are clear commonalities in the conceptualization of the term in the climate change literature. In a broad sense, it refers to a process, action or outcome in a socio-ecological system (household, group, community, region or country) that allows the system to better cope with, manage or adjust to stressful changes, risk or opportunities (Smit and Wandel, 2006 p. 282). Adaptation to climate change is necessarily related to the vulnerability of that system and vulnerability is determined not only by the magnitude of the impact of climate change, but also by the access to resources that individuals in the social system are entitled to (Adger and Kelly, 1999). When a socio-ecological

system itself reduces existing vulnerabilities, adaptation occurs (Brooks, 2003 and Smit and Wandel, 2006).

One of the issues in relation to the inclusion criteria for this search was the distinction between adaptation and mitigation usually present in the climate change literature, where mitigation is defined as any human intervention that reduces the sources greenhouse gases (IPCC, 2007). Although adaptation and mitigation are clearly differentiated, within this mapping exercise, mitigation initiatives are included in the search since initiatives that aim to mitigate greenhouse emissions such as developing renewable sources of energy, are also contributing to enhance the adaptive capacity of the communities by reducing their vulnerability and enhancing their resilience to the impacts of climate change and other stressors.

Additionally, some individuals and communities might implement innovative practical solutions to the impacts of changing climate conditions without acknowledging that they are adapting to the impacts of a global phenomenon (climate change). Smit and Wandel (2006) indicate that initiatives in response to climate change are generally integrated with other programmes which objectives might not be directly related to climate change adaptation. Similarly, communities who undertake initiatives in response to local environmental changes or socio-economic changes might also be adapting to present or further climate change impacts. Although these responses could be considered adaptation to climate change, the search focused on initiatives that are explicitly related to climate change, that is, initiatives in which people recognise that their actions are in response or anticipation to the local impacts of the global phenomenon.

Level of initiatives

Apart from the contested nature of the term community, the question of whether this mapping exercise should focus exclusively on community based initiatives was an issue around the inclusion criteria. The practical question was: Are we looking just for grass root community initiatives? Are initiatives that count with the participation of the community, but have had their origins at the national and local government or the private sector, valid for this mapping exercise? The practical answer is that rarely adaptation to climate change initiatives occur in isolation, most of the initiatives identified are in association among some community members, nongovernmental organisation, local or national government, academia and/or the private sector. Consequently, in this particular search, any initiative that was explicitly related to adaptation to climate change and involved direct work with communities or represented a clear benefit for rural communities is included.

Analysis

This section discusses the main limitations of the mapping exercise, it provides an overview of the initiatives mapped and finally it presents the emergent issues in the area of study.

Limitations

Before trying to summarise the main findings and issues arising from this mapping project, it seems relevant to discuss the main limitations faced by this mapping exercise. Some of them respond to a methodological problem: the mapping exercise strongly relied on online search. However, other limitations are related to the way in which the information found is presented and communicated which restricts the capacity of the public to understand the purpose, beneficiaries and degrees of participation of the communities in the initiatives/projects reported. All these limitations are further developed since they are considered to inform some of the potential steps that can be taken forward on rural community climate change adaptation research:

Initiatives that are taking place within rural communities, especially in Central America and South America, do not necessarily have online presence. This means that the initiatives identified had already been through different filters such as enough funding, knowledge and interest in making their information available online. It is likely that very innovative and interesting initiatives did not overcome these barriers. In order to minimise these effects some key actors in the field were personally contacted and interviewed so they could mention some of these initiatives; however, this approach consumed more resources compared to the online search.

The initiatives that have online presence are not necessarily up-to-date. Some of the initiatives that have online presence do not always provide information about the community involved, the current state of the project or its impacts. This leads to probably one of the main limitations of the mapping exercise, not always there is clear information about the beneficiaries of the project, that is, the communities involved or the impacts that the projects have had in the locality.

Moreover, in the same line, there is no clarity about the specific activities that are being or have been undertaken with the communities. Some projects refer to adaptation to climate change with important funds and little information about specific ways in which the community participated and was benefited. Similarly, if the projects are part of larger programmes it becomes more complicated the identification of specific information in relation to the place, activities or communities involved.

Finally, it is important to note the diversity and magnitude of the assigned area of mapping. The American Continent area includes very diverse climate scenarios, adaptation needs and social cultural and economic contexts, not to mention very diverse governance systems and inheritance in the global debate around climate change. These characteristics of the area of study as well as undeniable factors such as the researcher personal values, cultural and social background and time constrain must be acknowledged when using this report. The following section attempts to provide an overview of the initiatives identified followed by a section where the emerging issues across the area around climate change adaptation are discussed. They

do not intend to be by any means representative of all the initiatives or the issues in the American Continent.

Overview

A diverse range of initiatives/ project with online presence were identified across the region, from small initiatives with origins in rural communities to big projects that are part of larger adaptation programmes funded by different international institutions. Most of the initiatives were collaborative, counting with the association between the communities and other communities or the communities and/or different kinds of organisations (Academic, NGOs, Government and private sector).

Some of the initiatives have a clear interest in influencing decision making in specific contexts through education and mobilisation, others aim at integrating solutions to the technical problems faced by different communities across the continent and others only focus on building a body of knowledge about climate change adaptation and vulnerability. Therefore, the range of initiatives also varies from specific technical innovations to solve practical problems in order to facilitate adaptation to climate change impacts such as the bike-machines, seeds selection and early alert system; to initiatives that seek to assess the vulnerabilities of some rural communities or social groups within some specific places or even gain a better understanding of people's perception of climate change impacts within some cultural groups.

Most of the initiatives found are related to adaptation responses to extreme weather events such as early alert systems and food preservation, but some of the initiatives also include adaptation to gradual environmental degradation due to Climate Change in interaction with other issues such as loss of biodiversity and deforestation, in this sense some of the initiatives included diversification of production and reforestation.

Additionally, it was also found that there are existing networks who are trying to identify and communicate the range of community based adaptation initiatives are taking or have taken place in the last years in the American continent and other regions. Two of these networks, Co2 and Wiki Adapt, use Google earth to help the users locate the initiatives. Although these databases collect an important number of initiatives, there are many initiatives online that do not appear in these databases. Some of these networks are:

- BBC World living with climate change: <http://news.bbc.co.uk/hi/spanish>
- Climate Frontlines: <http://climatefrontlines.org/es>
- Community based adaptation exchange <http://community.eldis.org/.59b70e3d/>
- Co2 Colombia: <http://www.c-o2.org/climate-change-projects-1/energy-portfolio>
- Confluencias: <http://www.confluenciasagua.net>
- Many strong voices: <http://www.manystrongvoices.org>
- Wiki Adapt: <http://www.weadapt.org>

Emergent Issues

Adaptation beyond climate

Water and forestry management, food security and renewable energy were the main themes covered by the initiatives explored in the mapping exercise. Although these themes have been focus of the climate change debate for some time, what emerges from this search is that more and more these initiatives are contextualised, that is, many of the initiatives acknowledge the relationship between poverty, sustained situation of exclusion and issues of power of the communities they work with.

Adaptation is in most of the cases portrayed as a very complex issue that needs to be approached from an integrative and multidisciplinary perspective in which the experiences of excluded groups are central. In this sense, it was found that in Central and South America the adaptation of poor and historically excluded communities and groups was relevant; thus indigenous people and women are often beneficiaries of the initiatives. In North America indigenous people and other minority groups are targeted in the projects. This brings to light the social justice dimension underlying climate change adaptive capacity.

Moreover, the interaction between adaptation to climate change and other local environmental degradation processes such as deforestation, waste management and loss of biodiversity is also addressed in some of the initiatives. The interaction between local process and global environmental changes is acknowledged in many cases, particularly in Central and South America.

Community participation?

Even though the needs of the poor and excluded is emphasised and participation is considered ideal, there is still a strong presence of top down initiatives led by governmental, international institutions or academic institutions. The degree of involvement of the community in the initiatives in most of the cases is unknown and the top down approach is reflected in the way the initiatives are communicated, with highly specialised vocabulary and wide use of complex academic terminology. However, when the partnership is between community associations and NGOs it seems that the degree of community participation is higher and the initiatives appear to be closer to communities' needs. This issue could be associated to the fact that the initiatives with online presence tend to be initiatives funded by large international funding bodies in which the gap between those who propose the programmes and the communities is bigger.

Additionally, some initiatives showed some interest in understanding why some people within the communities do not feel motivated to participate in the decision process making around adaptation issues. This aspect could be related with the following section on governance issues.

Governance Issues

The role of local government and other private interests in enhancing or preventing communities' capacity to adapt is highlighted in some of the initiatives especially in Central and South America. Issues around corruption, indiscriminate and illegal exploitation of natural resources (mainly water and forestry) as well as people's

incapacity to influence these detrimental processes were mentioned in some of the interviews and came across in some of the projects/initiatives sites.

Knowledge exchange

Most of the initiatives across the area addressed the need to link people together and create opportunities for knowledge exchange. In the case of indigenous communities in North (Arctic Communities and First Nation Communities) and South America (Andean and Amazonian indigenous communities), there is a call for integrating local traditional knowledge to the body of existing knowledge. Similarly, there is a tendency to recognise the importance of exchanging experience and technical solutions among different poor rural communities in Central and South America.

Database

[\(Please click here to see Annex I\)](#)

The Mapping exercise resulted in a relatively easy to manage Excel database. Currently the database contains 75 initiatives in 28 different countries or groups of countries. These initiatives are listed and can be organised and searched by:

Name in English: The name of the initiative includes the activity undertaken and if reported, the name of the place in the country/region.

Name of the leader organization or individual: In most of the cases it indicates the name of the main organization or community association that coordinates the initiative. In a few cases this contact could be a person.

Link: it shows the online link where further information about the initiative can be found.

Partnership: it refers to the association that supports the initiative. The partnership can exist among any of the following kind of organisations: Community and/or Academia, Government, Non Governmental Organisations (NGO) and/or Private Sector.

Country or Sub region: it shows the country, countries or Sub region (p.e. Andes, Amazonia) where the initiative takes place.

It is important to note that this database does not intend to be a final product; on the contrary, this database has been conceived as an ongoing open product that can be expanded and improved, adding or removing search criteria or adding new initiatives/projects. Again, the feedback received in the forthcoming Arkleton Trust Seminar 2010 will be an important input to optimise it.

Conclusions

This mapping exercise not only aimed at producing a database with a group of community initiatives to climate change impacts. It offered, despite its limitations, an opportunity to identify some common issues that emerged from the initiatives explored.

The main common issues that emerged from the mapping exercise around rural community adaptation to climate change highlight the complex interrelationships between adaptation and existing vulnerabilities in particular social and ecological contexts. Adapting to climate change impacts goes beyond climate, it implies reducing poverty and inequalities, it claims for inclusion and it requires the protection of biodiversity and cultural diversity. Adaptation goes from implementing sustainable technologies as a response to specific impacts, to getting people together in order to influence decision process making at different levels. Whatever is the aim of the initiative it should take into account its social, cultural, political and environmental implications and most important, it should include communities' needs.

In this sense, some of the questions around community adaptation that arise from this particular exercise are related to the acknowledgment of diversity within communities. What are the differential impacts of climate change in a community? How are different social groups within the same community impacted by the changing climate conditions? How existing vulnerabilities influence people's capacity to adapt? What are the groups that will be impacted in a different way women, men, children, elderly, black and minority ethnic groups, particular occupations?

The second set of questions, also related to the previous one regards participation. What is preventing or facilitating people's capacity to participate in decision making processes about climate change in their localities? What is people's perception of their own capacity to participate? What are people's perception of their relationship with their ecosystem and the services they provide? What is the role of the local governments in enhancing or preventing participation? What is the role of multinationals with local operations in these participation processes? Who has the power to decide over what?

Finally, a remark on what has been the ongoing product of this exercise: the database. Some networks with interest in community based adaptation initiatives have been developing databases and making this information available to the general public online. In particular, one of the networks Wiki Adapt, uses friendly, open source and very current applications (google earth) to deliver this information with the capacity to store up-to-date images, videos and documents as well as linking people from different sectors with a wide range of interests. In this regard, it is suggested that among other activities, The Arkleton Trust collaborates with these networks in feeding their databases with the outcomes of the International Climate Change Mapping Project.

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Annexes

Annex I Database

[Please click in this link to access the Excel database.](#)

Annex II

Case Example: Movimiento Centro Americano de Victimas Afectados y Afectadas por el Cambio Climatico MOVIAC

(Central American Movement of Victims and Affected people by Climate Change)

This social movement started in June 2008 in El Salvador in an international forum organised by the NGO Amigos de la Tierra. This movement is currently integrated by 25 rural communities in four countries: El Salvador, Honduras, Guatemala and Costa Rica and other four associations with interest in the opportunities these communities have facing future climate scenarios as well as the clear intention of revealing and communicating the injustice issue underlying climate change. Interestingly, for some members of the movement the term “adaptation” does not reflect the reality of the people who day to day have to face intense rain, floods, droughts and mudslides. For José Acosta (2009), one of the leaders of the movement and member of CESTA El Salvador, “survival” is more accurate since it calls for immediate action at different levels.

This movement not only aims at making rural communities in Central America aware of their condition of “victims” of climate change, it also provides the network for communities to learn from each other about concrete adaptation measures such as food preservation, seed selection and water and forestry management. The main idea is to mobilise the more vulnerable people to make informed decisions about their future regarding climate change and its impacts, decisions that influence not only their daily practices but also influence the decision making process at a local and national government level.

This is an excellent example of an initiative that links people together, not only to share and deliver ideas and feelings with a more conscious and strong voice; it also provides the opportunity to share technical integrated solutions to day to day problems.

For more information and potential collaboration with MOVIAC you can contact José Acosta at CESTA <http://www.cesta-foe.org.sv/>.

Annex III

Case Example: Los Camellones (Camel humps), Bolivia.

The floods of 2008 that affected the livelihood of 118.000 people living in the Amazonian department of Beni in Bolivia have motivated some of the inhabitants of the region to use a pre-Columbian system of water and earth engineering called camellones (camel humps). These are raised platforms of land that can measure up to 500 square metres, and can vary in height from between 50 centimetres to two metres depending on the flood risk in a particular area, and the capacity for water run-off. This sophisticated system not only protects the crops from flooding and drought, it also produces fertile soil, fish stock, animal fodder, localised drainage and water management, nutrient production and organic recycling.

Different communities and individuals are using the camel humps systems and they can be found online, but the project run by a partnership between Oxfam International and the Keneth Lee Foundation is the one that provides more information about community participation. In total, five communities Five communities in the Beni area are involved in the camellones project run by these two NGO's; in Copacabana the whole village of 34 families collectively run six camellones. In Loma Suárez the community of 30 families has opted to run them at the household-level individually, and in Puerto Almacén, five families each have a camellon. The common trend in all the camellones is that mainly women and their children assume the role of managing the camellon.

This is a very interesting initiative where there is integration of ancestral technologies to contemporary problematic from a perspective that respects women's crucial role in communities' food security.

For more information and pictures of the Oxfam Project visit
<http://www.oxfam.org/en/campaigns/climatechange/adapting-climate-change-bolivia>

Annex IV

Case Example: Collecting rainwater in the Semiarid in Brazil

In the Semi-arid region of Brazil, where nearly 22 million Brazilians live, some children and adults need to walk the equivalent of 36 workdays per year to collect drinking water (BBC Mundo, 2009) and some women could walk around 24Km carrying 20 liters of water per day in order to satisfy their families needs (IPS, 2010). The water scarcity problem in the northeastern Brazilian region has been exacerbated by longer and more intense periods of drought. In response to this situation a forum of 750 non-governmental organisations from nine north-eastern states and two south-eastern states have formed the Semiarid Brazilian Network ASA. Drawing on popular wisdom and social mobilisation ASA started in 2003 the project: “Building a million rural household water tanks” to store rainwater. The key to the work of this network is that while in the semi-arid region the rainfall is low and erratic, the recorded average annual rainfall of 750 mm per year. In other words, it is possible to store water for human consumption and food production. The technology used is very simple and the tanks are built by community members made of concrete slabs produced in the community. Each tank is constructed next to each house, which collects rainwater captured on the roof. Each tank is capable of storing 16,000 litres of water; enough for a family of five people to meet their water needs for drinking, cooking and brushing teeth for six to eight months, the period of drought in the region (BBC Mundo, 2009). Similar rainwater catchment systems have been implemented in islands such as in San Andres and Providencia, Colombia and the Canarias Islands, Spain. In San Andres and Providencia for example, women manage rainwater for their families using a system called “tank with house” which is based in ancestral techniques (Montes, 2008)

To see some pictures of the water tanks in the semi-arid please visit the BBC Mundo website: http://www.bbc.co.uk/spanish/specials/1252_semiarido/page6.shtml

For more information on the on the project “Building a million rural households watertanks” visit <http://ipsnews.net/news.asp?idnews=53293>