

BRIDGING THE GAP in adaptation finance

Local action in climate change adaptation - a policy note



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ADAPTS – EMPOWERING LOCAL COMMUNITIES

Climate change is here; there is little doubt about that. Changes in the climate are increasing the severity, duration and frequency of extreme weather. They cause gradual changes in temperature and rain patterns, threatening water availability and food security. The poor are particularly vulnerable to these changes. Both water availability and water quality determine their potential for food production, their health and the sustainability of their surrounding ecosystems. And contrary to developed countries, poorer countries have little means to invest in adaptation measures. In short: poor people's livelihoods are at stake.

But local people are not just victims of climatic changes. They have always been active in implementing and managing local, innovative, often small-scale measures to deal with variable climatic conditions. The ADAPTS approach empowers communities to strengthen these actions, increase their resilience and play a key role in decision-making on adequate adaptation strategies.

This policy note provides insight into how the ADAPTS approach has taken shape in six river basins around the world. It first focuses on two country cases, Ethiopia and Ghana, as they well illustrate how local adaptation solutions have been supported and how these solutions have been up-scaled through policy dialogue respectively. In the next section, the main characteristics of the ADAPTS approach are summarised, followed by an overview of Dutch and international adaptation funding. A gap is identified between funding through mainly national governments and the need to integrate local stakeholders in decision-making. Finally, recommendations are provided on how to bridge this gap.

Local adaptive measures in the Dawa River Basin, southern Ethiopia

HARVESTING THE RAIN

About one million people living in the Dawa River Basin in southern Ethiopia know what climate change is. Even though they lack the exact knowledge on the global scale of climate change, and cannot express the changes in scientific or quantitative terms, they know that rain cycles are changing and droughts seem to become more frequent. It is getting hotter, and they see that in the dry seasons the streams run dry earlier and for a longer period. Even in the rainy season often little to no water falls.

For women and children the situation can especially be difficult. They have to walk up to 10 to 20 km to reach a source of drinking water. But even still, the often poor quality of drinking

water results in serious health problems. Diseases like cholera and diarrhoea are major causes of child mortality.

Local communities – mainly pastoralists –, non-governmental organisations and authorities in southern Ethiopia know that an important solution to their water problems lies in harvesting the water in the wet seasons and storing it for when the rains cease to fall and droughts are imminent.

One solution they have found – albeit not a silver bullet – is the construction of small dams in the rivers and streams that run through their lands. Sand collects at the upstream part of these homemade dams, and in this sand the water is stored. Hence the term: 'sand dams'. By constructing simple wells, the water – clean and healthy by the filtration through the sand – can be reached. The design of these dams – water containers may be is a better term – has been improved on the basis of experiences with earlier constructed dams elsewhere.

Sand dam in Ethiopia. Photo: R. Lasage



Advantages of the sand dams in comparison to regular, surface water dams is that the water is kept underground, does not evaporate, is kept clean and is free of malaria spreading mosquitos. An average dam can hold water for the day-to-day water needs of about 150 families. Furthermore, the small scale of the dams ensures that no one needs to be dislocated. No grazing lands or vegetable gardens are flooded. And the small scale does not

mean the dams are insignificant. Researchers have calculated that, if the most extreme climate change scenario becomes reality, there is room for probably some 1.000 sand dams in the Dawa River Basin, without significantly diminishing the water quantities down stream. Many small dams equal one big one... without the negative effects.

Under the ADAPTS project several sand dams are being constructed in the Borana zone. With these pilot projects researchers can establish the benefits users gain from this adaptive measure: how much water becomes available for each family, how much is the average time women and children spend on fetching water before and after construction of

the dam, how much water is left for down stream use? It also provides insight into how these dams can mitigate the effects of climate change on the local communities.

Following the ADAPTS philosophy local solutions are never restricted to brick and mortar. At least as important as the physical construction of the dams is the creation of local institutions and ownership. Local communities participate in the construction of the dams. A water resources committee is established and they are trained in the operation and management of the system. The sand dams operate with low running costs. Only small funds are necessary for the maintenance of the pump and these funds are covered by the users themselves.

Policy dialogue and up-scaling in Ghana **MAINSTREAMING LOCAL ACTION**

Local solutions work for communities, as they are rooted in local realities. But on a higher level, these solutions and local people's knowledge and needs are often not taken into account when developing river basin plans or climate policies. One of the

basic principles of the ADAPTS approach is to give local people a voice, and to integrate local knowledge into local, regional and, to a certain extent, even national management plans.

A good example of this can be found in the Dayi River Basin in Ghana. Together with the local NGO and ADAPTS partner

Development Institute, communities here have developed adaptation measures to adapt agricultural practices to climatic changes. Measures include the establishment of buffer zones along the riverbanks, the transition from rain-fed to irrigated agriculture, the introduction of drought resistant crops and the up-scaling of agro-forestry as an economic activity.

From early on in the project cycle, government institutes have been actively involved in the programme. ADAPTS experts have cooperated



Ghana. Photo: K. Kinney

SIX RIVER BASINS IN SIX COUNTRIES

Between 2008 and 2011 the ADAPTS approach towards climate adaptation has been implemented in six river basins in the world.

1. Coping with erratic rain in the Dayi river basin, Ghana

Some 150.000 people live in the Dayi River basin in southeast sub-tropical Ghana. They are mostly poor people, living on rain-fed subsistence farming and some cash crop farming. Farming is increasingly difficult. In recent decades, rainy seasons have become shorter and more irregular. The average annual rainfall

decreased from 1700 mm/year in 1975 to 1400 mm/year at present. More than the diminishing average rainfall, the inhabitants are plagued by the decrease in the predictability of weather patterns. This process is expected to continue over the next decades. The objectives of the ADAPTS project in Ghana, which is carried out in cooperation with the local NGO Development Institute (DI) and the governmental Water Resources Commission (WRC), are to support farmer initiatives in sustainable small-scale irrigated agriculture to cope with the decrease in reliability of rainfall, and to work towards climate proofing the basin's water management. Based on a survey and on discussions with local farmers, a new management system for the area was designed, introducing various zones for activities: drought resistant crops; agro-forestry; tree nurseries

both with local communities and government officials in assessing the possible long-term effects and different scenarios of climate change. They have jointly started to look for solutions. This dialogue has paid off.

Ghana is currently in the process of designing management plans for its river basins. The River Basin Management Plans in Ghana are the responsibility of the governmental Water Resources Commission (WRC). As a direct result of the ADAPTS programme significant changes are being made in the modus operandi of formulating these river basin management plans. Climate change scenarios are now a key part of the River Basin Management Plans. The second change is that the Dayi Basin Board now includes farmers associations, chiefs, 'queen

mothers' (female chiefs or 'Nana's') and other water users. These diverse stakeholders will be responsible for decision-making with regard to the management of the water resources and adaptation measures.

Also unique is the collaboration of the governmental WRC and the NGO Development Institute in the development and implementation of the River Basin Plan and concrete actions on the ground. And finally, as a result of ADAPTS, WRC in collaboration with its partners is in the process of up-scaling the successful local actions to the national level. The WRC has adopted the approach developed within the ADAPTS project as the standard procedure in future River Basin Management Plans in Ghana.

ABOUT ADAPTS

The overall goal of ADAPTS is to include climate change and adaptation considerations in water policies, in local planning and in investment decisions.

ADAPTS has a three tier strategy:

1. Local knowledge development with respect to climate change and adaptation measures.
2. Local action; identifying, introducing and strengthening local adaptation measures and preparing these for up-scaling to the regional and national level.
3. Initiating a dialogue between local, regional, national and international levels of decision making.

Key to the ADAPTS approach is inclusion of local knowledge and practices in policy discussions on how to climate proof water management. Local people and organisations (both governmental and non-governmental) experience climate change impacts on the ground, and some have already started developing adaptive responses. This makes local actors more than a stakeholder group that should participate in policy discussions out of their own interest. They actually are essential to these dialogues because of their relevant knowledge on local impacts and potential responses.

and small-scale irrigation. The farmers receive training in these new activities and a successful dialogue is set up with the government. [See text 'Mainstreaming local activities'].

2. Mangroves in the Huong river basin, Vietnam

The Huong River basin area in Central Vietnam is heavily impacted by natural disasters which are projected to increase in frequency and intensity due to climate change. The livelihoods – mainly small-scale agriculture and fisheries – of the 800.000 people living on the shores largely depend on the river and the lagoon into which the river drains. While the issue of climate change is on the political agenda and local stakeholders are aware of the issue, little knowledge exists on the exact consequences of projected changes and on how to respond to

them. ADAPTS works in Vietnam with a local NGO, the Centre for Social Research and Development (CSR). CSR collects information on vulnerabilities, existing coping mechanisms and adaptation priorities of local people. With this information, and in communication with communities, researchers and relevant local and regional governmental authorities, local actions were designed to protect the communities against the effects of climate impacts.

One specific measure, the planting of mangroves, is already being implemented. Mangroves serve as a buffer against floods, prevent erosion and provide other beneficial functions such as a habitat for several species. The mangroves are being looked after by the local Veteran Association. The mangroves project has attracted attention from several organisations and was

Linking science to experience

Whilst climate models point out global trends in a changing climate, exact local consequences of climate change are hard to predict. Nevertheless, we know that rainfall becomes more erratic and that pressures on water resources increase. The need for adaptation is obvious, even without knowing the exact future impacts. ADAPTS explicitly links scientific information on climate change to empirical knowledge and on-going local (adaptation) activities, which both strengthen the value and applicability of scientific information and empowers local actors.

Scientific information, based on local and international research, is important for climate proofing local actions and for effective replication of adaptation measures in other areas. It also enhances the credibility of local knowledge and concrete actions, to become more easily accepted in national and international policy discussions on water management and climate change.

¹ The World Bank, *The Costs to Developing Countries of Adapting to Climate Change, New Methods and Estimates (Consultation Draft)*, The World Bank Group, 2010. Download at: <http://climatechange.worldbank.org/climatechange/content/economics-adaptation-climate-change-study-homepage>

² http://unfccc.int/key_documents/the_convention/items/2853.php

Unique partnership

In ADAPTS three partners – a water consultancy firm, an NGO and a knowledge institute – have joined hands:

- Acacia Water is a research oriented consultancy specialised in advising on groundwater in relation to surface water, environment and infrastructure.
- Both ENDS is a non-governmental organisation working on sustainable development and the protection of the environment.
- The Institute for Environmental Studies (Instituut voor Milieuvraagstukken, IVM) is an interdisciplinary research institute at the VU University Amsterdam.

The ADAPTS project takes place in six developing countries. The ADAPTS team is working closely with Community Based Organisations, local NGOs, research institutes and local and national governmental institutions.

FINANCING ADAPTATION

A study by the World Bank estimates the annual cost of adaptation in developing countries at 75 to 100 billion dollars between 2010 and 2050¹. The UN Framework Convention on Climate Change (UNFCCC), ratified by 191 countries, explicitly recognizes that industrialised countries should pick up the bill for the developing countries, as they are the main contributors to man-made climate change. Adaptation spending should not be paid out of Official Development Assistance (ODA) budgets. Under Article 4.3 of the UNFCCC developed countries have committed to provide new and additional funding for the 'agreed full incremental costs' of climate change in developing countries.²

broadcasted on local television. Up-scaling of local actions and ideas was intensified when provincial authorities asked CSRD to draft part of the Provincial Action Plan on Climate Change Adaptation, which was developed within the framework of the National Target Programme on Climate Change. This proved a unique opportunity to integrate the findings on local vulnerabilities and adaptation priorities into provincial policies and local planning. The ADAPTS case in Vietnam shows that findings from a bottom-up process can directly contribute to provincial policies on climate change adaptation.

3. Enhancing the sustainable use of natural resources in the Ocoña basin, Peru

The Ocoña river basin, in the south-western Andes of Peru,

covers an area of over 16.000 km², extending from an elevation of 6,445m to sea level. Climate change has hit the area hard. A one degree temperature rise has caused accelerated retreat of the glaciers. Rainfall in the wet months has decreased significantly, threatening the livelihoods of the 70.000 people living on the shores of the river. As part of ADAPTS, the effect of several adaptation measures is being evaluated by the Peruvian NGO AEDES with support from experts, including the storage of water in highland wetlands, storing water in small scale reservoirs, improvements in irrigation practices (drip irrigation), the introduction of drought resistant crops, and the preservation of native forests on groundwater storage. AEDES works together with villagers in protecting the forest of Polylepis trees. Moreover, four micro-

INTERNATIONAL CLIMATE ADAPTATION FUNDS

The three largest multilateral climate funds, which provide a substantial part of global adaptation funding, are:

The Climate Investment Funds

The Climate Investment Funds (CIFs) were approved by the Board of Directors of the World Bank in 2008 in response to a demand by a number of major donors, including the UK, the US and Japan which see the World Bank together with Regional Development Banks as the most appropriate institutions to manage climate funds. Fourteen developed countries pledged a total of US\$ 6.5 billion to the fund. The CIFs are divided into the Clean Technology Fund (CTF) and the Strategic Climate Fund (SCF). Only part of the CIFs budget is meant for adaptation (part of the US\$1.9 billion pledged for the SCF).

[World Bank, 2011, <http://www.worldbank.org/cif>]

The Global Environmental Facility

The Global Environment Facility (GEF) has been a major climate fund since 1991. Under the GEF the UNFCCC manages two special funds: the Least Developed Countries Fund and the Special Climate Change Fund (SCCF). The SCCF was established to support adaptation and technology transfer in developing countries. The SCCF has approved US\$128 million for 31 projects. The Least Developed Countries Fund (LDCF) addresses the special needs of the 48 Least Developed Countries, which are especially vulnerable to climate change. LDCs can access this fund on the basis of their National Adaptation Programmes of Action (NAPAs). So far the LDCF approved some US\$180 million for 47 projects.³

<http://www.gefweb.org>

The Adaptation Fund

The Adaptation Fund was established as part of the Kyoto Protocol to finance concrete adaptation projects and programmes in developing countries. So far roughly 50 million euros has been approved through the Adaptation Fund.

<http://www.adaptation-fund.org>

³ <http://www.thegef.org/gef/LDCF>

Although a total amount of almost 32 billion dollars of so called 'climate finance' has been pledged, the actual disbursements by developed countries in order to deliver on their promise of climate change funding, are made at a very slow pace. Also, in practice, adaptation projects are hard to distinguish from 'ordinary' development efforts. In fact, effects of climate change can never be addressed in isolation, but require a holistic approach addressing multiple stressors. This means, for example, that in water related plans, initiatives and financing mechanisms, climate change and adaptation considerations need to be taken into account. Still these considerations, though integrated, are additional and so should be their finance.

Dutch efforts

In 2010 the Dutch government spent about 30 million euros on bilateral adaptation projects, on a total ODA budget of 4,8 billion euros. In addition, some 8 million euros is spent through

dams in the headwaters of the Ocoña Basin were constructed. Knowledge that is developed on climate change, vulnerabilities and adaptive responses is being used to stimulate discussion on adaptation between stakeholder groups in the basin, including government institutions. ADAPTS is having a positive effect on building alliances between municipal governments, national government institutions and NGOs.

The experience in the Ocoña river basin has attracted interest from the Peruvian Environment Ministry Climate Change Office, that asked AEDS to ensure the ADAPTS approach is reflected in a Peruvian GEF proposal designed to build the capacity of municipal and regional governments in climate risk management and design of adaptation projects as well as the capacity of local families to implement adaptive practices in three Peruvian districts.

4. Sand dams in the Dawa basin, Ethiopia

(see text 'Harvesting the rain')

Upscaling the ADAPTS approach has proven difficult in Ethiopia. Regional and national policy makers are not yet fully aware of the climate challenge and the value of local initiatives and ownership. However at several events high-level officials have shown a certain interest in the sand dams. Skill development training in the used approach and tools have empowered stakeholders involved in the project. Dialogues will continue with the local and national government to influence policy issues.

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international funds on climate change, such as the Global Environmental Fund (GEF). Only part of this GEF funding is earmarked for adaptation. Also, these funds are mainly accessible by national governments. The GEF does provide funding to non-governmental and community organisations in the form of its Small Grants Programme, but the amount available is only a fraction of the total.

Bilateral Dutch spending on adaptation is divided into a large number of relatively small projects (one of them being the ADAPTS programme). From this amount, the Netherlands also co-funds (with the UK) the Climate and Development Knowledge Network (CDKN), which supports developing countries to deliver climate compatible development. For CDKN country ownership is crucial and therefore they mostly work with and through national governments, although funding at the sub-national level and to civil society organisations is possible.

⁴ [Rijksbegroting 2012 Buitenlandse Zaken and the Nota Homogene Groep Internationale Samenwerking 2012](#)

According to the recent budgets, published by the Dutch government⁴ next year's spending on climate change will not rise. Although the government announced that it will contribute to international funds for climate adaptation, such as the Least Developed Countries Fund (LDCF) and the Pilot Programme for Climate Resilience (PPCR), budgets for these contributions have not been established. What is more, Dutch spending on climate change mitigation and adaptation is now part of the 0,7 percent of Dutch ODA, meaning adaptation funding is not additional, despite Dutch obligations under UNFCCC and despite strong commitments by the previous government that it climate finance should be additional.

⁵ [Focusbrief ontwikkelingssamenwerking, March 2011](#)

In spite of the obvious urgencies and earlier activities, climate change is no longer a focal point for Dutch development policies, though it is acknowledged as a 'cross cutting theme'⁵. It is however unclear at this point how climate change will exactly be integrated in the Dutch key focus areas of water and food security. Relevant in this respect is the fact that Dutch parliament recently called upon the government to strive for 'coherent policies for sustainable development', taking for example climate change into account in all international development cooperation activities.

It would be a missed opportunity for the Netherlands not to build upon their years of experience and knowledge on water-related climate adaptation. The Netherlands can provide valuable expertise and take a leadership role in supporting sustainable adaptation strategies worldwide.

International funding

There is a range of bilateral and multilateral climate adaptation funds. The World Bank, together with Regional Development Banks, is one of the key international institutions managing these funds. Still, total financing for climate change adaptation falls short of expectations. During the 2009 Copenhagen Climate Summit it was agreed that a Green Climate Fund would be established.

5. Vulnerability and adaptive options in the Vale do Ribeira, Brazil

The Vale do Ribeira region, located just south of Sao Paulo, is home to a vast environmental diversity. It possesses the biggest remainder of the Atlantic Rain Forest in Brazil, which is an extremely threatened environment. The local ADAPTS partner, NGO Vitae Civilis, aims to increase knowledge on the vulnerabilities of local communities and the ecosystem and ensure the inclusion of adaptive measures in the planning process of the Ribeira de Iguape river basin. Currently, climate change is not taken into consideration by the Basin Committee. Through research, stakeholder meetings and individual interviews the climatic changes, the vulnerability of the people in the area, and the adaptation options were assessed. It

showed that changes in weather patterns will affect production of crops and sanitation, lead to water depletion and even population displacement, as sea level rise will lead to flooding of the coastal area. The results were used to start raising awareness and support a dialogue with interested authorities from São Paulo. Vitae Civilis currently aims to make sure the information will also be further discussed and taken up in the Basin Committee.

6. Water harvesting in the Limpopo zone, Botswana

The Limpopo zone in Botswana is afflicted by droughts and prolonged dry seasons. Temperatures have been rising since the 1960s and are projected to rise by another 2–3.5°C by 2050. Rainfall has been decreasing at least since 1970 and

⁶ Andrew Steer, at a panel Discussion on the Evolving International Climate Finance Architecture at the World Bank on September 22nd, 2011

But until now the fund has remained un-operational, and according to the World Bank Special Envoy for Climate Change, Mr A. Steer, this is not expected to change for at least the next three years⁶.

In UNFCCC negotiations, donor countries put great emphasis on the need to find 'innovative' sources of funding as they feel that they will otherwise not be able to meet their commitments. This can mean many different things, including the mobilization of private funds, carbon trading, but also auctioning revenues from carbon markets or levies on highly emitting sectors which are currently under-taxed, specifically aviation and maritime transport. In line with donor country and private sector interests these funds flow mostly to mitigation projects. Efforts are needed to ensure that adequate funding for adaptation remains on the political agenda, and that the allocation between adaptation and mitigation is indeed 'balanced', as committed to at the Climate Summits in Copenhagen and Cancun.

Developing country governments have no direct access to the climate funds, let alone local governments, civil society organisations or knowledge institutions from these countries, while they are important actors in adaptation to the impacts of climate change. Climate funds are an obligation under the UNFCCC, and ownership should lie with developing countries. Both individual countries as well as non-governmental organisations should have direct access to the Funds. Civil Society Recommendations for the design of the UNFCCC's Green Climate Fund, submitted before the UNFCCC Conference in Cancun in 2010 indicate: "Direct access indicates that in-country funding entities which meet agreed fiduciary standards and social and environmental safeguards have the right to apply for and receive funding directly from the GCF without having to work through a multilateral implementing entity. In-country entities include national governments but also, for example, representative civil society bodies, local and municipal governments, Indigenous Peoples groups, and other such entities".⁷

⁷ http://www.sustainlabour.org/IMG/pdf/cso_recommendations_to_the_gcf_final-4.pdf

Furthermore, current adaptation projects funded by multilateral climate funds usually focus on top down, large-scale adaptation measures, for example the support given through the Climate Investment Funds to Bangladesh's US\$ 110 million Climate Resilient Infrastructure Improvement in Coastal Zone Project. Only scant attention is paid to 'soft measures', like the institutional embedding of local solutions into policy planning. This is not (only) due to political unwillingness. There probably is genuine interest in local bottom-up approaches. But in the everyday practice of multilateral financial institutions, one large project has practical advantages over many small ones. Small project are not as easily identifiable, they are more difficult to manage (higher transition costs) and monitor without the right systems in place, and also raise less public attention. The Netherlands, as an important contributor to multilateral financial institutions, could play a

is projected to decrease by another 15% by 2050. People in the area make a living from rain-fed agriculture and livestock keeping. In the Limpopo zone ADAPTS works together with the Groundwater and Drought Management Project (GDMP) of the South African Development Community (SADC). ADAPTS joined forces to see whether small-scale water harvesting structures can help communities to make them less vulnerable to climate change.

A survey with the local community and in-depth interviews with relevant policymakers provided valuable information on the current vulnerability and risk perceptions towards climate (change) related hazards. GDMP has built, in cooperation with ADAPTS, one sand dam and irrigation systems in two communities, to be used for communal vegetable gardens.

The concept of a communal garden in this part of Botswana is promising and links to a recent policy change by the Botswana Government to promote small-scale farming. This concept of self-sufficiency at the community level is new in Botswana. This bottom-up approach is a strong example of a small-scale community based measure that can help reduce the negative impacts of climate change.

larger role in ensuring that adaptation finance flowing through these institutions allow for a strong link between local and national level processes and between 'hard' and 'soft' adaptation measures.

The ADAPTS approach offers an example of how funds reach key actors at both the local and national level. By linking these levels from the start, adaptation measures and sector policies are based on local realities and therefore more effective and sustainable.

CONCLUSION AND RECOMMENDATIONS

In sum, there is a gap between funds and initiatives that channel their support mainly through central governments and support national level adaptation plans, and what happens and should happen at local or district levels. The two arenas are insufficiently linked. As a consequence, funds for adaptation in developing countries are not invested efficiently. To bridge this gap, we recommend the following:

Funding mechanisms should support adaptation efforts which:

- Look beyond national governments. Start from local/community level practical needs and initiatives and development priorities.
- Are integrated or well aligned with existing water/natural resources policies and planning processes.
- Ensure that local actors are fully included in local, regional and national decision-making processes regarding climate change adaptation and climate proof water management.
- Facilitate the integration of local and traditional knowledge with scientific models, calculations and research.

To be able to do so, donors should:

- Ensure that financial flows for sustainable development support activities aimed at increasing the capacity of communities and countries to adapt to climate change.
- For all international climate funds, promote the adoption of a protocol to involve local knowledge and solutions in climate adaptation plans.
- Ensure funds (notably the Green Climate Fund currently being designed under UNFCCC) are not only directly accessible to national governments (without going through intermediaries such as the World Bank or UNDP), but also to sub-national stakeholders including local authorities, civil society organisations and knowledge institutions.
- Establish a minimum percentage of funds to be directed at non-state and local actors.
- Include non-state and local actors in the monitoring and evaluation of adaptation funding mechanisms and adaptation projects.

COLOPHON

Published by ADAPTS, October 2011. Funded by Ministry of Foreign Affairs of the Netherlands
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Water Resources Commission, Ghana | Action for Development, Ethiopia | Borana Zone Water Office, Ethiopia | CSRD - Centre for Social Research and Development, Vietnam | Southern African Development Community, Botswana | Vitae Civilis, Brazil



