

## Success stories: the ADAPTS Approach in practice

### VIETNAM

The Huong River basin area in Central Vietnam is already heavily impacted by natural disasters which are projected to occur with increasing frequency and intensity due to climate change. The issue is on the political agenda and local stakeholders are also aware of the issue. However, little knowledge exists on the exact consequences of projected changes and on how to respond to it.

Local Partner Centre for Social Research and Development (CSRSD) collects information on vulnerabilities, existing coping mechanisms and adaptation priorities of local people. This information was used to select and support a specific adaptation measure and to integrate the perspective of local communities on climate change adaptation into the dialogue between communities, researchers and relevant local and regional governmental authorities.

#### Local action

A survey on adaptation priorities of local communities, existing initiatives of the local government and (inter)national NGOs was carried out. The survey resulted in the choice to plant mangroves in parts of the basin as a buffer against floods and related erosion. Additionally, activities on flood proofing of houses are carried out.

#### Successes

The mangroves were planted and the trees have grown very well. The pilot activities of ADAPTS have been visited by various national and international organisations. CSRSD also was asked to draft a part of the Provincial Action Plan on Climate Change Adaptation, which is developed within the framework of the National Target Program on Climate Change. This is a unique opportunity to integrate the findings on local vulnerabilities and adaptation priorities into provincial policies and local planning. The ADAPTS case in Vietnam thus shows that findings from a bottom-up process can significantly contribute to provincial policies on climate change adaptation.

### ETHIOPIA

The Borana zone in southern Ethiopia has a typical semi arid savannah landscape. Most of the 960.000 inhabitants are active in dry land farming, herding livestock based on traditional pastoralist systems. Projections for the coming century for the Borana zone are that temperature will rise with approximately three degrees, rain is expected to become more variable and droughts will occur more frequently.

This projects aims to increase the resilience of communities to climate change through improving water availability in the region, by introducing sand dams and other rain water harvesting systems. It will be assessed whether these are an effective and sustainable measure under current and future circumstances in the zone, and how they can be included in the tradition of pastoralist communities.

#### Local action

Several sand dams have been constructed by Action for Development (AFD) in two areas of the Borana zone, in a joint activity between ADAPTS and the RAIN foundation. The hydrologic and socio-economic impacts have been evaluated under the ADAPTS project. The sand dams successfully store water. The experiences are shared with other NGOs and governmental institutions to stimulate replication in other regions.

#### Successes

Sand dams are successful and the potential role of sand dams in the management of the area is being explored. Meetings have been organised at the national level with government officials showing interest in these local scale activities. Also several other Ethiopian NGOs have been trained to construct sand dams in their regions. For resilience, the government recognises that local interventions, such as sand dams, are a promising addition to the more conventional water resources, like deep groundwater. It is a strong example of a small scale community based measure that can help reducing the negative impacts of climate change.

### PERU

The Ocoña river basin lies in the South-western Andes of Peru, covering an area of 16,322 km<sup>2</sup> and extending from sea level to 6,445 m above sea level. Most of the 70.000 people live in poverty. A one degree temperature rise has caused accelerated retreat of the glaciers. Precipitation in the wet months has decreased significantly. This project aims to assess how climate change will influence the regional hydrological system and to propose measures to reduce the negative impacts on the population and the ecosystems.

#### Local action

The effectiveness of several adaptation measures is being evaluated, including the storage of water in highland wetlands (bofedales), storing water in small scale reservoirs, improvements in irrigation practices (drip irrigation), the introduction of drought resistant crops and the potential effect of the preservation of native forests on groundwater storage. Also the knowledge that is developed on climate change, vulnerabilities and adaptive possibilities is used to strengthen the so called consultation tables, used to structure interactions between stakeholder groups in the basin.

#### Successes

The retreat of the Coropuna glacier is monitored in conjunction with the National Institute of Glaciology. Parallel, local partner AEDES studies the perception of local households on their vulnerability to climate change and maps socioeconomic effects of climate change on the major ecosystems. The project works together with villagers in protecting the forest of Polylepis trees. Together with the District 4 micro-dams in the headwaters of the Ocoña Basin are constructed.

ADAPTS is also active with projects in two other countries, one in Botswana (with the SADC) and one in Brazil (with Vitae Civilis).



#### ADAPTS – empowering local communities

The poor are particularly vulnerable to climate variability and change. Climate change is increasing the severity, duration and frequency of extreme events. It causes gradual changes in temperature and rain patterns, threatening water availability and food security.

Both water availability and water quality directly determine the potential for food production and ecosystem sustainability and thus livelihoods. Water managers and policy makers at the local, national and international level should play a key role in the development of adequate adaptation strategies.

#### From practice to policies

ADAPTS shows that adaptation at the local scale is already taking place and can be successful, and it provides practical experiences and lessons from various contexts that can feed into policy dialogues on climate-proofing water management from the local to the (inter)national level. The overall aim of ADAPTS is to increase developing countries' adaptive capacities by achieving the inclusion of climate change and adaptation considerations in water policies, local planning and investment decisions.

#### Inclusion of local knowledge and action

Typical for the ADAPTS approach is the inclusion of local knowledge and action in knowledge development, and in policy discussions on how to climate proof water management. People, government institutions and civil society organisations operating at the local level are the main groups experiencing the on the ground impacts of climate change, and some have already started developing adaptive responses. Thus, local actors are not only a stakeholder group that should participate in policy discussions out of their own interest, but are essential to these dialogues because of their relevant knowledge on local impacts and potential responses.

#### Linking science to experience

ADAPTS explicitly links scientific climate change information to empirical knowledge and on-going local (adaptation) activities, which both strengthens the value and applicability of the scientific information and empowers the local actors. This is necessary for climate proofing local actions, for replication in other areas, and for the credibility of findings. Furthermore, it links local knowledge and action to national and international policy discussions on water management and climate change.

# ADAPTS

## Enabling communities in developing countries to effectively respond to the consequences of climate change in the water sector



## COLOPHON

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For more information please visit our website: [www.adapts.nl](http://www.adapts.nl) or contact [ralph.lasage@ivm.vu.nl](mailto:ralph.lasage@ivm.vu.nl)

#### Project partners

IVM - Institute for Environmental Studies, The Netherlands | Both ENDS, The Netherlands | ACACIA Water, The Netherlands  
AEDES - Asociación Especializada para el Desarrollo Sostenible, Peru | Ministry of Environment, Peru | Development Institute, Ghana  
Water Resources Commission, Ghana | Action for Development, Ethiopia | Borana Zone Water Office, Ethiopia | CSRSD - Centre for Social Research and Development, Vietnam | Southern African Development Community, Botswana | Vitae Civilis, Brazil

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# Strengthening knowledge & empowerment

The ADAPTS approach to adaptation to climate change is an approach that builds on the needs, priorities and actions of local people and their communities. The ADAPTS approach works in different contexts and makes adaptation to climate change in water management practical.

ADAPTS enables developing countries to effectively respond to the consequences of climate change in the water sector.

Poor urban and rural communities are especially vulnerable to climatic variations and climate change. They witness not only the gradual changes in temperature and rainfall, but also the devastating effects of weather related extreme events. Together with pressures from increasing populations and non sustainable use, this makes water a more vulnerable resource threatening the livelihoods of the poor.

ADAPTS cooperates with local communities, civil society organisations, local and national governments, scientific institutes and the private sector. It proves that adaption is already taking place at the local level. ADAPTS combines local and global knowledge in the area of water management and empowers vulnerable communities in designing and implementing cost effective and sustainable adaptation measures and in dialogues with local and national governments to ensure the inclusion of their knowledge and visions in the development of climate proof water policies and investments.

The ADAPTS approach is currently being implemented in six river basins around the world: in Ethiopia, Ghana, Peru, Botswana, Brazil and Vietnam.

[www.adapts.nl](http://www.adapts.nl)

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IVM Institute for Environmental Studies



Both ENDS  
Environment and Development Service

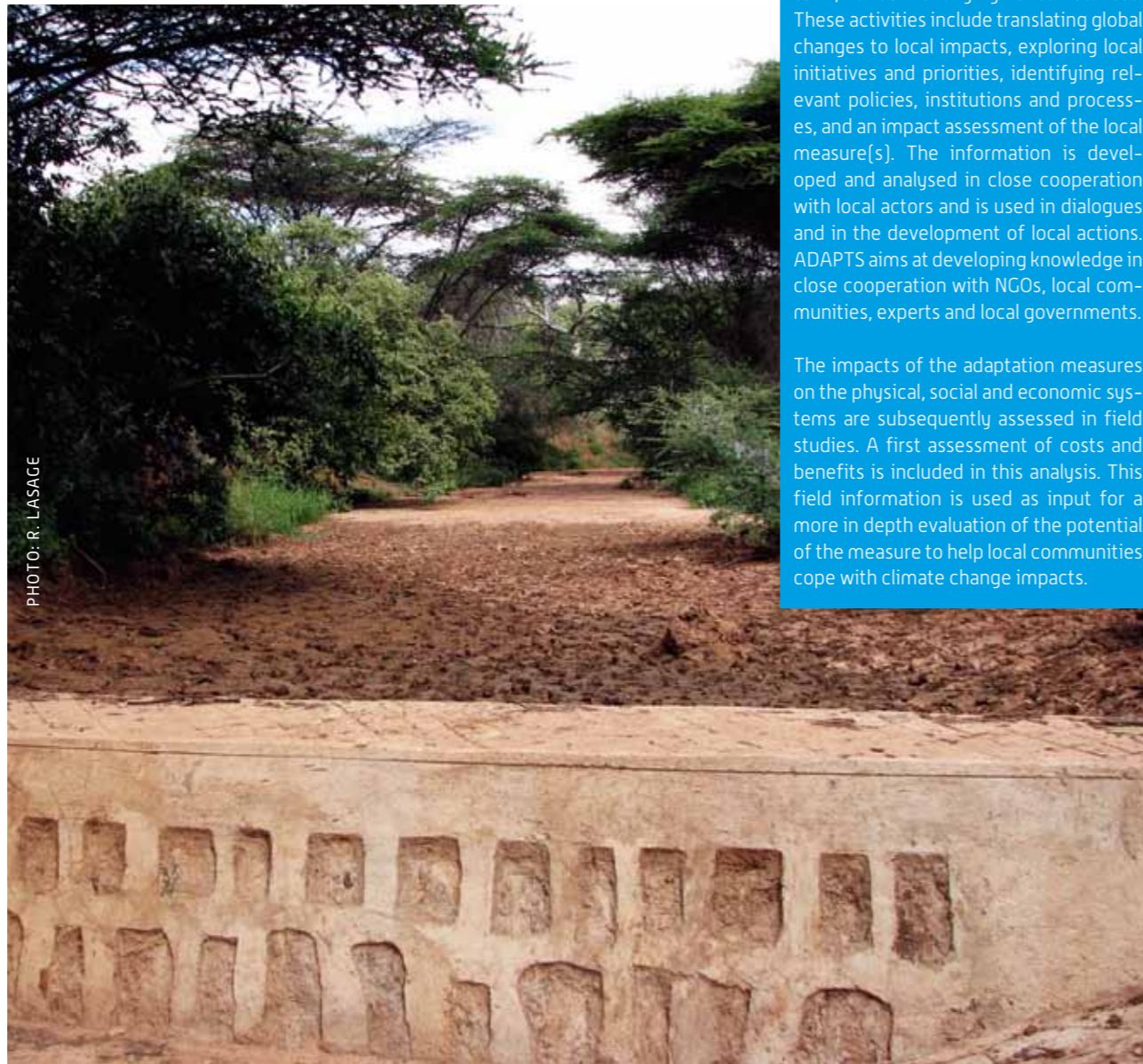


PHOTO: R. LASAGE

## THE ADAPTS APPROACH

ADAPTS provides a concrete, practical approach to adaptation in the context of water management, which has the potential to be replicated in other regions or countries. The ADAPTS approach combines knowledge development, local action and dialogue.

## KNOWLEDGE DEVELOPMENT

The ADAPTS approach starts with gathering information on vulnerabilities of communities and the environment under current and future circumstances, and on existing local initiatives to adapt to climate change. The impacts of expected future changes and the effects of local climate change adaptation measures on the people and the environment are assessed, as well as the sustainability of the chosen measures on the longer term, under changing circumstances. These activities include translating global changes to local impacts, exploring local initiatives and priorities, identifying relevant policies, institutions and processes, and an impact assessment of the local measure(s). The information is developed and analysed in close cooperation with local actors and is used in dialogues and in the development of local actions. ADAPTS aims at developing knowledge in close cooperation with NGOs, local communities, experts and local governments.

The impacts of the adaptation measures on the physical, social and economic systems are subsequently assessed in field studies. A first assessment of costs and benefits is included in this analysis. This field information is used as input for a more in depth evaluation of the potential of the measure to help local communities cope with climate change impacts.

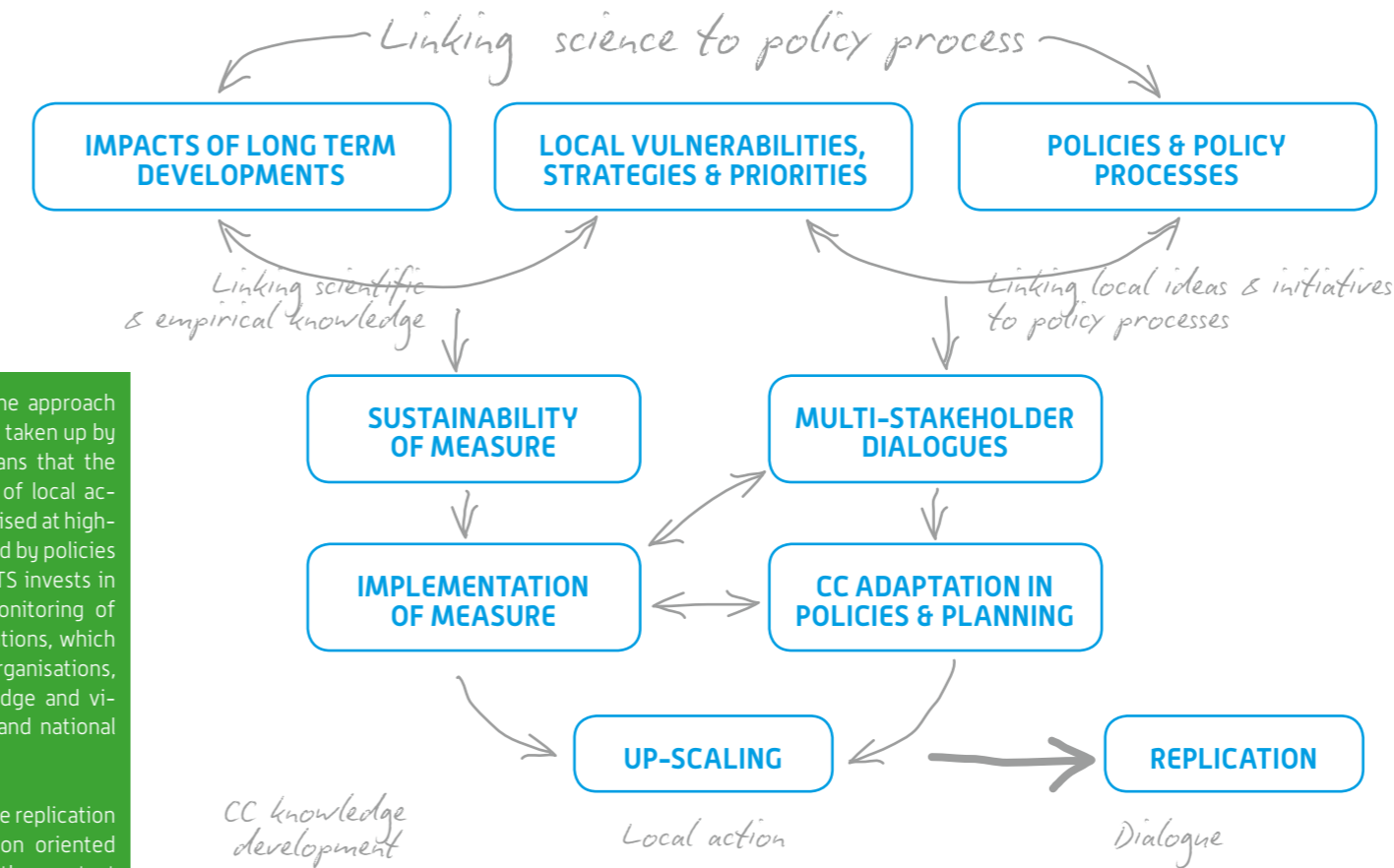
## LOCAL ACTION

ADAPTS aims to up-scale the approach and the activities initiated or taken up by local actors. Up-scaling means that the potential and effectiveness of local actions or measures are recognised at higher policy levels, and supported by policies and plans. Therefore, ADAPTS invests in the implementation and monitoring of the most promising interventions, which are implemented by local organisations, to ensure that local knowledge and visions are included in basin and national policy dialogues.

ADAPTS sets out to assure the replication of a practical implementation oriented approach to adaptation in the context of water management and of concrete examples of adaptation. Through replication ADAPTS will introduce successful adaptive approaches and measures to larger geographical areas. In this part of the approach we link local and global knowledge in the assessment of the sustainability of the local action under a changing climate.

## DIALOGUE

After the identification of key stakeholders and key policy processes, ADAPTS facilitates the development of dialogues between local and national stakeholders on issues of sustainable water management and adaptation to climate change. Policy makers receive information on results and progress of the ADAPTS activities in the country, and participate in meetings and workshops initiated by the local and international ADAPTS team, aimed at building awareness on the potential of local measures. If relevant, the ADAPTS team provides input for the development of river basin management plans or more general water policies.



## Success stories: the ADAPTS Approach in practice

### GHANA



The Dayi River basin lies in the southeast sub-tropical Ghana. This rural area has 144.000 inhabitants on approximately 1200 km<sup>2</sup>. The main economic activities are rain-fed subsistence farming and some cash crop farming. The average annual rainfall decreased from 1700 mm/year in 1975 to 1400 mm/year at present. The decrease in the amount and reliability in rainfall has had a negative impact on the traditional rain-fed agricultural practices. Precipitation is likely to decrease over the next 40 years and temperature is expected to rise by 2.5-3.0 °C.

The aims of this project, which is carried out in cooperation with the Development Institute (DI) and the Water Resources Commission (WRC), are to support successful 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.

#### Local action

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; agroforestry; tree nurseries and small scale irrigation. The farmers also receive training in irrigated agriculture, as sprinkler irrigation schemes will be created in cooperation with these farmer groups.

#### Successes

Climate change adaptation in the water sector was put high on the agenda during the ADAPTS workshop in ACCRA in June 2009. Results of ADAPTS research contribute to the inclusion of climate change adaptation in the Dayi River basin management plan. From now onward local communities must be represented in Basin Boards and have a voice in the management plan. Farmer groups are currently developing sustainable land management systems.



PHOTO: DEVELOPMENT INSTITUTE