

	Theme 3. Fresh water availability and access
SP 3.1	Experiences with practical tools and interactive methods to enhance community resilience to droughts
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Introduction

The central theme of this session is how the resilience of communities to droughts and water scarcity can be strengthened, with the aim of preventing a water scare year being a disastrous year. Over the years a lot of experience has been gained on approaches, measures and tools that are suitable to increase resilience, but it is the observation of the presenters and organisers that not much is done with this information when looking into replication and upscaling. The presenters focused on the very local and small scale measures to buffer and store water when it is available during rainy periods, to make it available to the community when it is needed. The key message is that for a (small scale) measures to be successful, it should be developed, selected and implemented jointly, and making use of the knowledge from all stakeholders. For instance, globally active donors identify hotspots that require investment, policymakers provide a national context in which to operate and local stakeholders identify the exact measures and locations to create the best water buffer. Without the clear and interactive involvement of all the local stakeholders it may be a case that we are using good information for bad unsustainable projects.

Applying regional models to assess the change in occurrence and impact of drought in East Africa

Ted Veldkamp, Institute for Environmental Studies (IVM), VU University Amsterdam, the Netherlands

Ted Veldkamp provided the first presentation of the session looking at the role of global datasets in identifying areas or periods of water scarcity or droughts. Global level datasets are useful because current observational data sources are biased in terms of area and time covered. Global datasets use hydrological models and remote sensing data to provide information that sidestep the problems of limited observational data. Additionally, climate change projections are developed at a global level, and can be made available for regional and more local use. These indicators can provide a good reflection of climate variability allowing stakeholders to predict hotspots where (temporary) problems with water availability occur. The benefits of global indicators can be enhanced when placed in the local hydrological or socio-economic contexts. Placing the indicator in context allows limited resources to be directed to where they make the largest difference in the short or long term. Organisations such as the Red Cross or the World Bank use such indicators as part of their investment strategies. and these types of information can be used for early warning systems, for instance making stakeholders aware when an El Nino event is about to happen. However, while these indicators indicate trends, we need to integrate local stakeholder knowledge to understand the exact problems before designing and implementing on the ground projects.

Experiences with suitability mapping of small scale and water buffering measures in Kenya, Uganda and Zimbabwe, as input for DRR decision making

Arjen de Vries, Acacia Water, the Netherlands

Arjen de Vries continued the session with a discussion of the suitability of small scale water buffering measures. Arjen highlighted the problem households face is not a lack of water, but the timing of water availability does not match the needs of the community through time. In most (semi-arid) areas in the world, water is available abundantly in a certain period of the year. However, it soon disappears downstream due to a combination climate variability and poor water management. In combination with increasing demand for water by the population, there is an issue during the dry seasons. Small scale water harvesting measures can

store water in wet times that can be extracted in dry times, providing water when the community requires it. Small scale water harvesting measures can successfully create water buffers if combined with local knowledge and context. The integration of local knowledge into water harvesting schemes allows the most suitable measure for the individual community to be employed in the right place to create a sustainable water buffer. The active involvement of stakeholders creates a feeling of ownership that helps to maintain the suitability the employed measure in the long-run. By combining local knowledge and expert knowledge suitability maps have been developed for several areas, and Arjen shows the results for the Dopeth catchment in Uganda and the Turkana area in Ethiopia. These maps show for a whole catchment which buffering measures are suitable for which location. This information can be used for the development of integrated water resources management plans, can be used by implementing organisations to select the type of measure they will construct. Additionally, this information can be used to calculate if the water demand can be met by implementing small scale measures. The main question raised in this presentation is what should the involved organisations do more, to have this information used, or mainstreamed, by local (governmental) organisations.

Combining stakeholder priorities and inputs from suitability maps to identify and prioritise suitable water management measures: examples from Ethiopia

Moges Bekele, Cordaid regional office Horn of Africa, Ethiopia

Moges Bekele who also looked at small scale interventions with community involvement. Moges presented the idea that disasters are not natural; rather, a disaster is the consequence of being highly vulnerable to a certain hazard. While this is a simple framework it is more complex than at first glance. This is because everything we can't focus on a single part of the problem without considering the entire problem context. The interaction and co-operation of all stakeholders at various levels (including government and knowledge institutes) of water problem assessment and solution phases presented to the community. This interactive process results in community identifying where measures should go and what measures the community believes can be sustainable given what scientific presents as possible solutions. Moges once again highlighted the feeling of ownership that such interaction generates, allowing the community to develop the rules that maintain long run sustainability. When interacting with local communities and stakeholders the following key questions should be asked: what; where; how. These questions refine the wider perspective into a more relevant perspective for the social context and provide an understanding that the key purpose of these measures: preventing a bad event from becoming a disaster.

Evaluation of catchment wide effects of climate change and large scale implementation of water buffering in Ethiopia

Ralph Lasage, Institute for Environmental Studies (IVM), VU University Amsterdam, the Netherlands

Ralph Lasage was the final presenter taking a wider view of small scale water buffering measures by investigating how these measures can be evaluated at the catchment level, for a case study in Ethiopia. This is an important question because if these measures are effective, and keep water upstream they may lower the water accessible downstream. The work showed that one specific small scale measure, sand dams, can be very effective at storing water upstream while allowing enough water for those downstream. He showed that the current and future water demand can be met by these small scale measures, taking into account socio-economic change and climate change. Downstream impacts are limited. In the project and analysis information of different stakeholders was included and led to a good outcome. It was highlighted that we need to use all levels of knowledge – donor knowledge of where problem hotspots are; scientific knowledge about effective measures; and local knowledge of where measures should be placed and further refined. This makes investments in small scale measures more sustainable and climate proof. We need the local knowledge in place so that we can try to prevent bad projects simply applying what works in one place to another without considering differences in local context.

Discussion

The session ended with a discussion about how to mainstream appropriate approaches for studying water problems, and information on suitability of measures. The problems covered in the presentations were recognised by the audience as well. The discussions indicated a need for regular communication with local groups who have the network to open doors; we need to bring aboard the local experts or communities so that knowledge is transferred. Similarly, stories of both what was successful and not need to be shared to enhance the learning process. In doing so, the capacity to absorb bad events is improved helping to reduce the likelihood of a bad event being a disaster as Moges presented. The presence of knowledge transfer

between stakeholders can raise awareness of the problems faced, providing stakeholders with impetus to work on the water scarcity problem. However, at other times stakeholders should begin working on solutions to a problem that attracts attention of the remaining stakeholders. The agenda's or interests of stakeholders are likely to differ across stakeholders and countries, meaning that with each project new common ground between stakeholders must be found. Projects aimed at increasing disaster resilience can start at a high level, however the closer the process comes to application we need to refine the level of interaction to as local to the ground as possible. One way to get support for a project is by making use of articles in newspapers to attract the attention of high level government officials.