Using climate information for Climate-Resilient Water Management:

Moving from Science to Action

In South Asia, as in many other regions, there are many challenges to the use of climate information to inform the policy-making process. There are limitations in the availability, reliability and accessibility of climate data, and capacity constraints in analysing the climate data to produce useful information and analysis, which is then used to inform policy and practice. These issues challenge the extent to which Climate-Resilient Water Management (CRWM) can be effectively adopted in the region.

The Action on Climate Today (ACT) programme has faced many of these challenges when working at the national and sub-national level in five South Asian countries, to transform systems of planning and delivery for adaptation to climate change.

This learning brief presents a snapshot of the findings from ACT on how to understand the role of climate information in producing analysis, informing CRWM policy and practice, and overcoming some of the challenges involved.
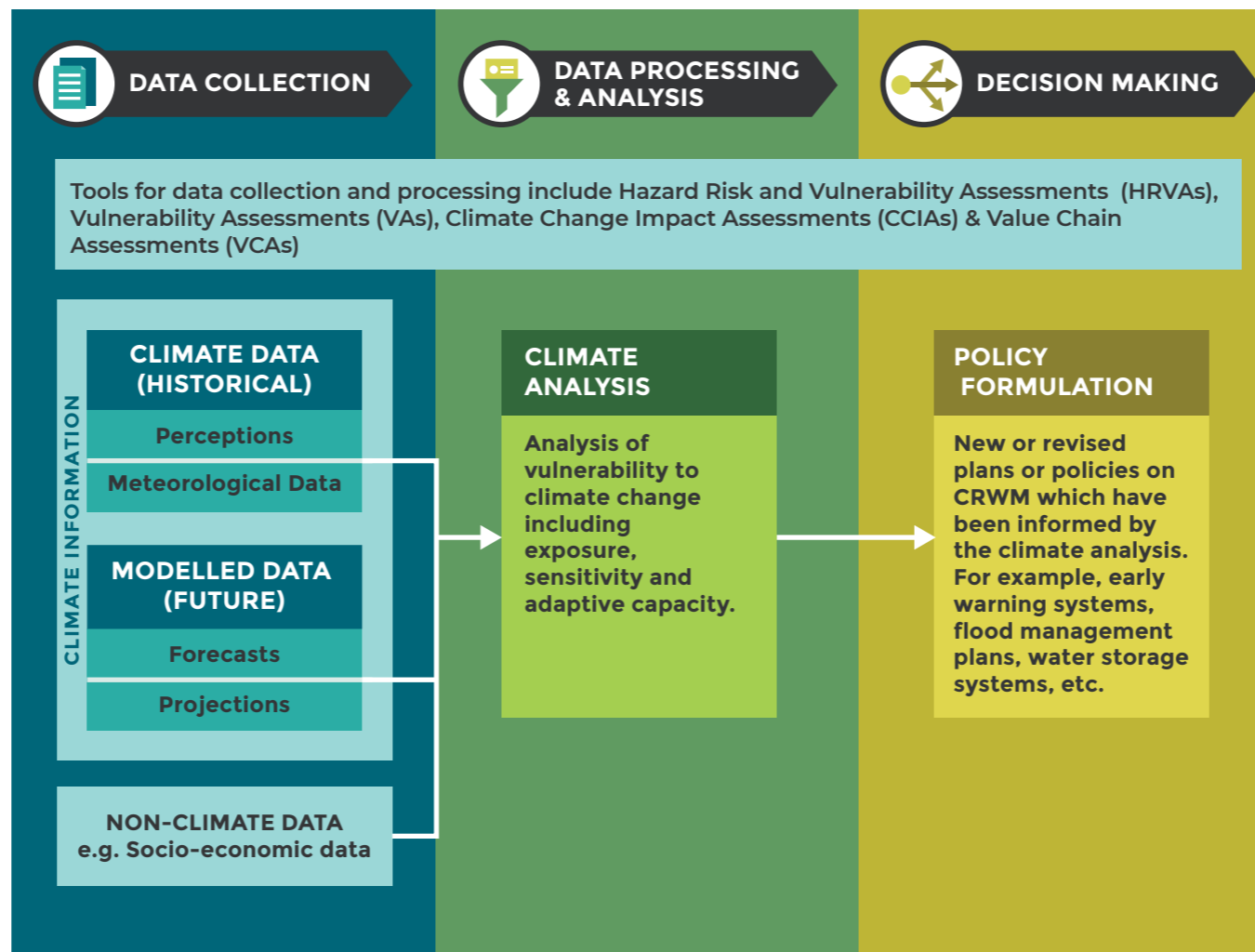
A full description of ACT's work can be found in the associated ACT learning paper: Using climate information for Climate-Resilient Water Management: Moving from science to action.

DATA COLLECTION

Data availability and accessibility

Key challenge: Across all ACT locations, the availability and accessibility of reliable and accurate climate data has been a key challenge. In Afghanistan there is little to no climate data from 1980 to 2000 due to the civil war and political strife. In Assam and elsewhere, precipitation data has missing years and is not uniformly available across all cities. Datasets are also often not centrally maintained or are only available in paper format. For ACT, some departments at the sub-national level were hesitant to share their data in case they were asked to help organise and clean it.

Lesson: ACT found that when certain climate datasets were not available, alternatives could often be used. For example, minimising the need for sub-national climate datasets by instead integrating climate projections made at a national or regional level. ACT also often relied on secondary data like global climate model projections, and existing peer reviewed articles and analysis. In Assam, ACT conducted Hazard Risk and Vulnerability Assessments (HRVA) which combined perceptions of hazard risk and measured climate data to help close the data gap.


| DATA COLLECTION | DATA PROCESSING & ANALYSIS | DECISION MAKING |

Tools for data collection and processing include Hazard Risk and Vulnerability Assessments (HRVAs), Vulnerability Assessments (VAs), Climate Change Impact Assessments (CCIAs) & Value Chain Assessments (VCAs)

CLIMATE INFORMATION

CLIMATE DATA (HISTORICAL)
- Perceptions
- Meteorological Data

MODELLED DATA (FUTURE)
- Forecasts
- Projections

NON-CLIMATE DATA e.g. Socio-economic data

CLIMATE ANALYSIS

Analysis of vulnerability to climate change including exposure, sensitivity and adaptive capacity.

POLICY FORMULATION

New or revised plans or policies on CRWM which have been informed by the climate analysis. For example, early warning systems, flood management plans, water storage systems, etc.

DATA PROCESSING & ANALYSIS

Data resolution and uncertainty

Key challenge: ACT often faced problems in finding datasets of sufficient detail and consistency for producing the analysis required. In Pakistan, secondary sources provided conflicting analysis of long-term climate change trends: One set of studies, using data from a 100 year period, showed little change in precipitation; while other studies, using data from a 10-25 year period, showed significant shifts in the monsoon. In addition, the use of Global Circulation Models (GCM) data was often not useful at the local level particularly along coasts or in areas with significant topographic variation.

Lesson: ACT has built local capacity to work with and understand climate information even when it remains uncertain. In Odisha, there was some initial resistance from the government to the flood forecasting system developed by ACT to expand advance notice from 8 to 36-72 hours because like all models, it has a degree of error. The team overcame this through consistent and regular engagement with different departments and by using key champions such as the Principal Secretary to build confidence in the effectiveness of the model.
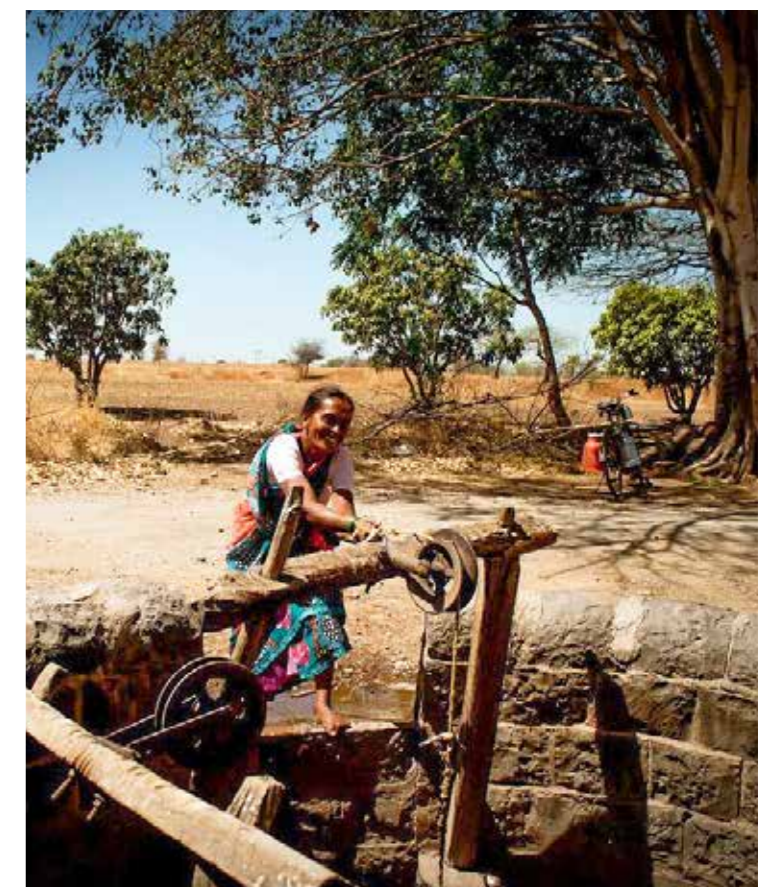
DECISION MAKING

Using climate information to inform decision making

Key challenge: There are many institutional barriers to incorporating climate information within the decision-making process, such as, poor coordination between the different agencies responsible for CRWM across sectors and scales. In addition, governments prefer clarity and specificity when using information to make decisions, and future scenarios of climate change will always be uncertain. Therefore, even when climate information is available, governments often lack the systems, tools and understanding to make best use of the data and analysis.

Lesson: ACT has made strengthening the enabling environment, including building systems for data collection and coordination across government, a central tenet of its work on CRWM. For example, ACT has developed decision-support tools to make it easier to use climate information. In Maharashtra a Water Budgeting Tool is being used by the Government to equip around 4,000 'Water Champions' to identify and collect climate data, make the water budget calculations and to make decisions within the state's water conservation programme.

Key Lessons from ACT's Experience:

ACT's 10 recommendations for how to integrate climate information into CRWM planning:

1. Work with government and stakeholders to align supply and demand for climate information. More data is not always best, focus on data that is really needed.

2. Obtain government buy-in by using entry-points via their existing priorities. Data users should be invested in the collection process.

3. Map existing available data and determine who has it. Mapping avoids collecting duplicate data and helps find non-traditional sources when required.

4. Engage and work with high-level climate champions from government. This helps ensure access to data within different government agencies and encourages the use of climate information.

5. Allocate sufficient time for data compilation, cross-checking and cleaning. Short-cuts will affect the reliability of the analysis.

6. 'Ground truthing' data in some instances can make the climate data more reliable. Compare and contrast measured data and climate information, with perceptions of local communities.

7. Invest time and resources in capacity-building. Clarify why climate data are important for planning, and explain limitations of the data.

8. Develop decision-support systems to help decision-makers use climate information. Systems and tools can help decision-makers navigate the uncertainty inherent in climate information.

9. Ensure that the use of climate data and information will be institutionalised into decision-making. Collaborate with local experts to produce climate information to ensure long-term local ownership and capacity

10. Prioritise problem-driven iterative adaptation approaches. Iterative processes encourage learning as well as refining and improving the value of the climate information

These and other lessons from the ACT programme are elaborated in the ACT learning paper: Using climate information for Climate- Resilient Water Management: Moving from Science to Action