



## PROBLEM STATEMENT

Roads play a vital role in strengthening the socio-economic development of regions in sub-Saharan Africa by providing local communities with critical connections between essential market points, service towns and infrastructure. Rural accessibility and peoples livelihoods are directly and indirectly effected by a number of climate hazards such as increasing temperatures and hydro-meteorological hazards .

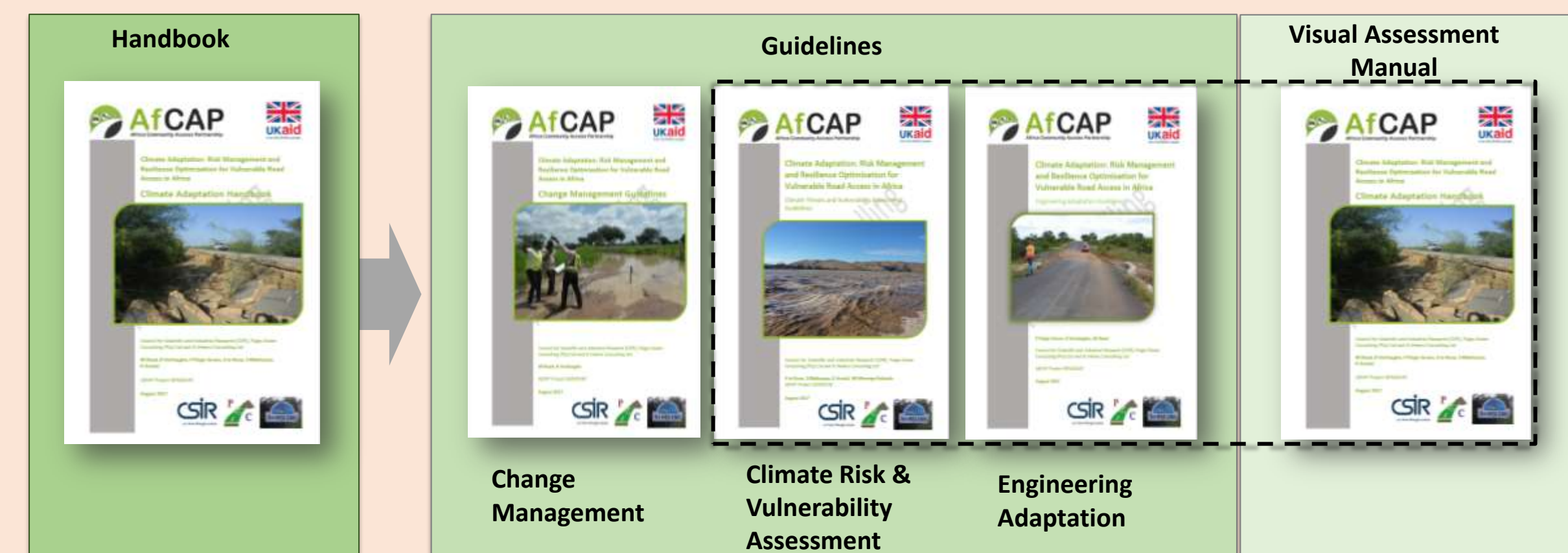
Many countries in Africa are seeing a clear increase in the intensity, extent and frequency of these hazards. To respond to these challenges many emerging global climate commitment and policies have emerged. These commitments and policies have however not been translated into actions in the rural roads sectors. This need has been flagged and is being addressed by the Research for Community Access Partnership (ReCAP) research program on climate adaptation. This poster highlights the six step methodology followed towards trailing the embedment and uptake of climate adaptation responses into the policies, planning instruments and project practice's of the Rural Roads Sector.

## METHODOLOGY



## 3. ADAPTATION OPTIONS

A challenge is to effectively convey information on climate change as well as to apply appropriate adaptations options. To package (and guide) the application of adaptation options, a handbook with three accompanying guideline documents was developed.



The Climate Adaptation Handbook was developed as an overarching document. It illustrates the fundamental principles, processes and steps required for climate resilience. Detailed information that supports this process regarding the actual adaptation approaches and measures are included in the accompanying guidelines covering Change Management, Climate Threats and Vulnerability Assessment, Engineering Adaptation and Visual Assessment manual.

## 4. IMPLEMENTATION THROUGH DEMONSTRATION

There is a need to develop practical environments where engineers and technical staff could apply various components – such as local level screening & relevant engineering solutions.



## 5. ADDRESSING POLICY ISSUES

**Policy development:** Integral part of strategic planning, programming, implementation and feedback processes. A lot has been done to develop national policies dealing with climate change in 3 countries. However, policies on climate adaptation for road and transport are largely absent. Where present, roads are usually represented as a subset of all infrastructure.

## 6. EMBEDMENT CHALLENGES AND CAPACITY ENHANCEMENT

To address **embedment and implementation**, to enhance the capacities of transport Ministries, Departments and Agencies (MDAs) in the region to address climate resilience (specifically considering the roads sector) requires the following:

- Roads departments become more connected to networks of institutions dealing with climate change science (in country). This is also beneficial to gain access to climate science information and expertise.
- Roads MDAs also need to develop capacity to deal with geospatial climate science data in order to relate it to roads data.
- There needs to be a stronger link between geospatial data systems (with climate data) and Road Asset Management Systems (RAMS). Although such systems are present their linkage are not always operationalised. The opportunity exists when such systems are upgraded or replaced, to ensure that it can accommodate climate change risk screening information.

Lastly, road design guidelines also have to reflect climate resilient designs and there is a need for such documents to be updated.

## 1. THEORY AND CONTEXTS OF CLIMATE CHANGE AND COUNTRY SCREENING

Investigate what had been done at the country level to address Climate Change. Broad spectrum climate and disaster risk screening is often not incorporated in transport (roads) departments. Determine the climate threats relevant to each country – data assembly, screening and indicator development would focus on these threats.



## 2. SCIENCE-BASED RESEARCH TO IDENTIFY CLIMATE HAZARD, VULNERABILITY AND IMPACT ON ROADS

Road-focused climate adaptation assessments, at the time of the study, were largely missing from the planning and maintenance systems applied within participating countries – with the exception of World Bank funded projects that required the use of the World Bank climate screening tools. A geospatial, semi-quantitative method for carrying out climate adaptation assessments for rural roads was developed. It consists of five key phases and is described in the Climate Threats and Vulnerability Assessment Guidelines :

- The first 3 phases deal with identifying the main regional climate risks with respect to rural roads, where the current and projected climate information would be obtained using climate models.
- The 4th phase deals with the incorporation of climate threat indicators into asset management systems to identify roads where maintenance and climate adaptation interventions should be prioritised.
- The last phase relates to its implementation in planning and prioritisation

## RECOMMENDATIONS

Recommendations to guide future actions to deal with incorporating climate change into policy, planning and implementation of roads departments include the following:

- Acknowledgement that Climate Change Adaptation is a long-term country commitment and involves multiple role-players and stakeholders across various sectors, including Roads Ministries, Departments and Agencies (MDAs).
- Embedding climate change adaptation into Roads MDAs will also require current policy shortcomings be addressed extending across all functions of such institutions.

- The embedment of Climate Change Adaptation in Roads MDA's will require buy-in, uptake and specific ongoing capacity development
- Climate Change Adaptation needs to move beyond individual projects and be mainstreamed into planning-, monitoring and evaluations and asset management systems.
- The national climate science base needs to be harnessed by roads MDAs to inform policies and be incorporated into their respective planning systems. This will also require more collaboration and coordination with other MDAs.
- That developed guidelines be used in conjunction with demonstration sites to address various aspects of change management and capacity development.