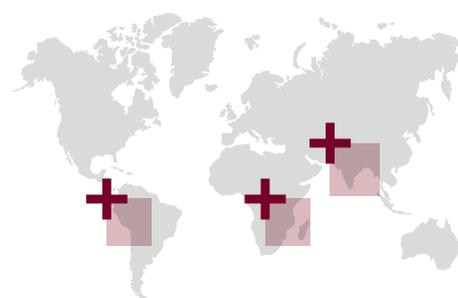


East Africa – Peru – India Climate Capacities (EPICC). Climate Capacity Building: Risk Anticipation and Minimization



AT A GLANCE

Name

East Africa – Peru – India Climate Capacities (EPICC).
Climate Capacity Building: Risk Anticipation and Minimization

Duration

2018 – 2021

Focus area

Tanzania, Peru, India

Target group

The target groups are international, national, regional and local actors, especially those working in the field of research, education and policy for Tanzania, Peru, India.

Funds available

The International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) funds the project with 4.8 million Euros.

The project is jointly implemented by...

The Potsdam Institute for Climate Impact Research (Potsdam-Institut für Klimafolgenforschung e.V. – PIK), Tanzania's Ministry of Agriculture, Livestock and Fisheries (MALF), Peru's Ministry of Environment (MINAM), the Indian Meteorological Society, India's Parliament of Telangana state and Energy and Resources Institute (TERI), and the German Meteorological Service, Deutscher Wetterdienst (DWD).

Overall aim of the project is...

to strengthen resilience against disruptive weather phenomena and climate change at the national, regional and local level in three partner countries: Tanzania, Peru, India.



Supported by:



based on a decision of the German Bundestag

BACKGROUND

Climate impacts already have severe consequences for the livelihoods of the most vulnerable people in developing countries, affecting subsistence agriculture and food security as well as water resources. Such effects could add to existing pressures on rural populations, increasing migration patterns to cities that are also affected by climate change and often have only limited labour market options available to incoming migrants. At the same time, the deterioration of rural livelihoods could also lead to trapped populations in the affected areas.

The EPICC project aims to provide opportunities for the partner countries to reduce the gap between climate research and its application in policy and societal decisions, particularly regarding agriculture, hydrology, and migration issues. Consequently, the project aims to identify on a collaborative basis how results from state-of-the-art climate impact research can be applied to national needs. For instance, how can early forecast of the monsoon, long-term prediction of El Niño, seasonal prediction models and climate scenarios assist agricultural management? Or, how can climate migration hotspot maps support strategies to reduce vulnerability to climate stressors?

APPROACH

The project encompasses five modules to be developed according to the demands and priorities of partner countries.

Module 1. Capacity building and knowledge transfer.

This module refers to the strengthening of local climate adaptation capacities in all partner countries. The information generated will be fed into existing web-platforms and applications. Along with scenarios and forecasts, GIS applications, maps and risk reports, the project will develop scientific publications, policy briefings, press releases and political advice to stakeholders. To enhance the discussion, workshops, study stays and guest expert visits will be arranged.

Module 2. Climate.

In the climate module, forecasts for the Indian Summer Monsoon and prediction of the El Niño phenomenon as well as seasonal meteorological predictions based on DWD's climate model simulations are made. In addition, longer-term trends caused by anthropogenic climate change are scaled-down into regional scenarios.

Module 3. Hydrology and water resources.

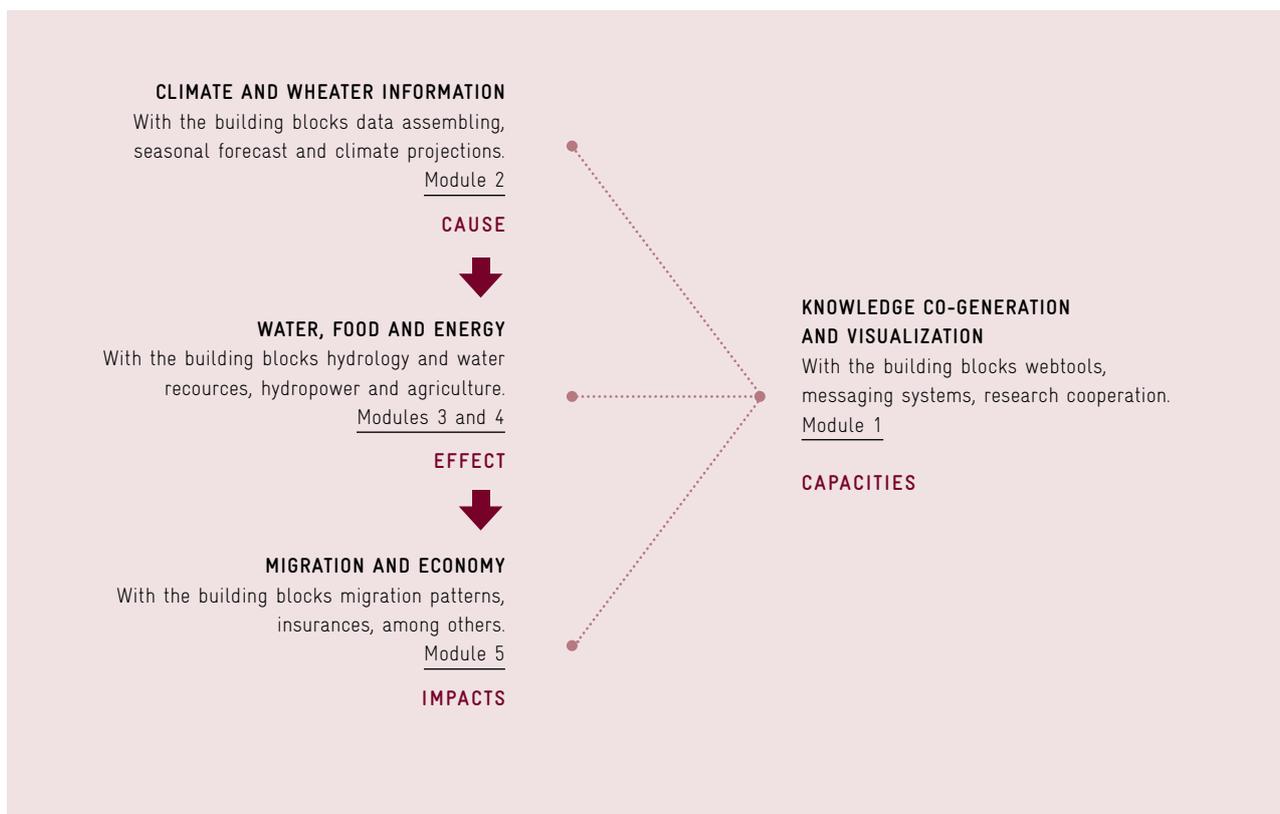
The seasonal meteorological predictions in module 2 are used to determine the impacts of climate change on the water sector. In addition, long-term climate change impacts are quantified.

Module 4. Agriculture.

As in module 2, the agricultural module uses the meteorological generated data to determine the impacts of climate change on the agricultural sector.

Module 5. Migration.

The analysis focuses on the nexus between climate change and migration dynamics. Here, the impacts of climate change on the above-mentioned sectors are examined and policy relevant recommendations with partners in the respective countries will be developed.





CHALLENGES

The application of EPICCC's results will significantly depend on the engagement that each partner employs in the project, as EPICCC aims to co-generate research-based capacities to address climate adaptation. The project will identify pathways for the

development and application of new climate information based on users' needs. Hence, the constant involvement of project partners is crucial to the successful implementation of results in research, policy and education.

OPPORTUNITIES:

The EPICCC project contributes to agriculture planning with early forecast of monsoon timing that accelerates a transition to sustainable farming. Early forecast of monsoon withdrawal helps to avoid overflowing dams and to prevent flooding.

The EPICCC project contributes with new knowledge on sustainable agricultural management under climate change. This will help enhance biodiversity targets as the one defined, under the UN Convention on Biological Diversity, in Aichi Target 7.

The EPICCC project provides new knowledge and tools for capacity building and for the implementation of the National Adaptation Plans (NAPs), which is in line with the Paris Agreement.

The EPICCC project has identified more than 20 potential partners in the fields of research, education, policy and business for Tanzania, Peru and India.

The EPICCC project promotes a deeper understanding on the linkage between climate change and migration and produces policy-relevant recommendations.

In regard of international target groups, the EPICCC project also identified active organizations in development cooperation as well as those specifically involved in the topic of climate change. A transdisciplinary approach engaging a wide community of stakeholders provides a springboard for further advanced research in the area of climate capacity building.

EXPECTED OUTCOMES

- Providing monsoon forecasts and prediction of the El Niño phenomenon based on PIK research as well as the seasonal climate forecasts from DWD model simulations and other sources.
- Climate change simulations tailored to the research areas by applying the TERI Climate Tool (TCT) and bias-correction methods developed at PIK.
- Assessing current and future climate impacts in particular in the water and agricultural sectors, including impacts on migration patterns.
- Establishing or enhancing research cooperation.
- Supporting climate adaptation capacities through knowledge transfer activities.

India

The EPICCC Project provides an early forecast of the monsoon in central India. The results are made available to different users on the individual, agricultural and governmental level. The forecasts are issued twice a year: in the first week of May (40 days in advance) for an onset data, in the end of July (70 days in advance) for a withdrawal date. The forecasts are conducted for the Eastern Ghats region and later extended to the state of Telangana. An additional extension is being evaluated. The extension(s) of the prediction areas is carried out in collaboration with local scientists and doctoral students. In addition, TERI will test and develop new methods for climate data analysis for the improvement of the prediction of climatic extreme events, seasonal prediction, based on numerical weather models, is provided by DWD.

Peru

EPICCC provides an automated algorithm for the long-term prediction of the El Niño phenomenon based on a successfully tested, novel methodology, which offers predictions far earlier than current standard models (about one year in advance). Simultaneously, EPICCC will identify relevant Peruvian organizations that could integrate this algorithm into their own El Niño monitoring. Additionally, improvements to the existing algorithm will be explored, e.g. increase of the prediction lead-time, accuracy and the possibility to provide long-term predictions also for the strengths of the El Niños. Forecasts and algorithms are expected to be supported by research groups and doctoral students from Peru.

Tanzania

EPICCC can co-develop seasonal forecasting of agricultural crop yields based on DWD seasonal predictions for all partner countries. For Tanzania, such an analysis will be incorporated into a semi-empirical crop model in order to make a yield forecast one or two months prior to the harvest. Based on the model results, farmers' associations and the Ministry of Agriculture will be able to inform and assist farmers in their planning strategies in advance of an event of crop failures. Moreover, outcomes from the model will also be applied for yield loss assessments in crop insurance solutions to increase farmers' capacity to cope with climate change risks.



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