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Experience with supporting climate services in India, Bangladesh and Mozambique

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We share experiences and lessons learnt from climate analysis training in India, Bangladesh and Mozambique. Our work in India involved a short course on statistical downscaling in New Delhi and the supervision of two PhD students from Kolkata. The supervision has led to improved climate and computer literacy. The students progressed from Excel to R/R-studio and got a better understanding of analytical tools. One PhD completed and three papers have been authored by the students and published. We also encountered some difficulties such as a #metoo-incident. A lack of open data also precluded high quality analysis.

The work in Bangladesh involved two trainees at the Bangladesh Meteorological Department (BMD). In this case, we had access to local data which made the work more relevant and allowed us to evaluate the quality of the analysis. The efforts at BMD was coordinated with a storm analysis within the EU-Circle project for the city of Khulna in order to get synergy and build local networks.

The work in Mozambique involved assisting the national meteorological service (INAM) in improving its climate services and training the staff in R/R-studio. The training was a hands-on hackathon for 6-8 people based on their own local data. The range of skills was a challenge, as some students had a PhD and experience using Matlab while others had little computer literacy. Furthermore, some students found English challenging as the official language is Portugese. In addition to training, our efforts included proposing a CORDEX Flagship Pilot Study together with neighbouring countries. We also developed a prototype www-app based on R-shiny for providing an overview of the climate data. A test version is already running: ocdp.met.no.

A common denominator from all these experiences is the scientific and technical challenges, e.g., working offline due to intermittent Internet. Some of the trainees found it difficult to understand technical aspects and scientific concepts such as Empirical Orthogonal Functions (EOFs) and that climate model simulations are not synchronised with the real world. For all cases, we employed the open source tool ‘esd’ for handling and analysing climate data in the R programming environment (github.com/metno/esd).