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Potential and Challenges of Low-Cost and High-Tech Crowd-sensing Approaches in Hydrometeorology for Better Water Resources Management – Insights and Learnings from the Global iMoMo Initiative

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In developing and transition countries and despite significant global investments in hydrometeorology, data on water remain scarce/fragmented. One key reason is that traditional sensing in hydrology, hydro- and agro-meteorology does not scale because of high investment costs and difficult maintenance of traditional technology, esp. in remote and/or poor regions. Even where there are data, these are often difficult to access and interpret for local stakeholders due outdated data transmission and the lack of access to modern tools for data management/analysis/synthesis and exchange.

In recent years, there have been substantial technology developments in environmental sensing and mobile communication technology that enable the application and deployment of affordable and scalable high-tech solutions for better water monitoring at different scales (local to transboundary levels). The WMO is acknowledging and promoting the potential for application of these technologies.

One key aspect is to anchor these technologies in local communities that perform crowd-sensing tasks on a regular basis. The merits as well as challenges (including introduction of human factor, less accuracy as compared to traditional sensing, intermittency of data, ...) of such approaches will be discussed in the context of the WMO-led Global iMoMo Initiative and its numerous activities on the ground in Eastern and Southern Africa as well as in Central Asia.