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## **WaterApps: co-producing tailor-made water and weather information services with and for farmers for sustainable agriculture in peri-urban delta areas in Ghana and Bangladesh**

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Water for agriculture in peri-urban areas is vital to safeguard sustainable food production. Due to the dynamics of urbanization in deltas as well as climate change, water availability (too much, not enough, too late or early) is becoming erratic and farmers cannot rely only on their own experience anymore for agricultural decision-making. The WaterApps project develops tailor made water and weather information services with and for farmers in peri-urban areas in the urbanizing deltas of Accra, Ghana and Khulna, Bangladesh to improve water and food security and contribute towards sustainable agriculture.

The project's design framework initially focuses on the farmers that are involved and supported during its course in the study areas and assesses their needs. Based on the baseline needs assessment study and along with the farmers in a co-producing mode Climate Information Services are being developed that provide tailor-made water and weather information and are continuously monitored and evaluated to ensure their effectiveness.

WaterApps combines the latest information technology such as Apps, social media, etc. on knowledge sharing that are enhanced with the local farmers' information needs, demands and preferences to produce tailor-made Climate Information Services.

It deals with the technical part & design aspects of the water and climate information services, such as: the skill of the provided information on different spatio-temporal scales and the role of Local Forecasting Knowledge in the study areas.

Currently, an APP is being developed which, besides displaying scientific forecast gives the possibility to farmers to provide their own indigenous forecast. Additionally, scientific and indigenous forecast are being integrated providing a hybrid forecast.

In Bangladesh, Farmers' Fields Schools (FFS) have been initiated together with meetings and trainings. The objective was to engage with farmers on a weekly basis by providing long term weather forecast and discuss the relevance in relation to upcoming agricultural activities. Social media are employed to inform agricultural extension officers and stakeholders on a daily basis.

Both cases in Bangladesh and Ghana show the importance of two-way communication and co-production with and for farmers. The co-production of water and weather information services empowers and improves livelihoods of small/medium farmers and builds capacity for enhancing sustainable food production. Finally, it lays the ground for upscaling in other urban-rural delta zones in the developing world.