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UNIVERSITY OF DAR ES SALAAM

UNIVERSITY OF DAR ES SALAAM INNOVATION AND ENTREPRENEURSHIP CENTRE PROBLEM BASED LEARNING PROJECT FINAL DISSEMINATION MATERIAL

1. STUDENT Challenges (CASES) AND REPORTS

1.1 Challenge 1 (TMA Challenge)

Client: Tanzania Meteorological Agency (TMA)

Sustainable Challenge: Coming with innovative mechanisms of communicating timely, efficiently and cost effectively climate information to Tanzanian smallholder farmers in rural areas.

Implementation:

This challenge was implemented jointly by multidiscipline students from Aalto University and the University of Dar es Salaam (UDSM) in March 2018. The final outputs were in two folds: i) a narrative report submitted by Aalto Capstone Students ii) a prototype of the ICT system developed by UDSM students that conveys climate information to farmers in three ways (a text sms, Whatsapp message as well as web based) and an abstract summarizing the system. The final prototype was presented to client on 12th October 2018. The Abstract is here under.

Uptake and Use of Climate Information Services (CIS) by Smallholder Farmers in Tanzania

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ABSTRACT

In Tanzania, agriculture is the primary economic activity and the backbone of the national economy. It's estimated that about 80% of the population in Tanzania depend on agriculture as the main source of income (Camilius A Sanga, Joseph Phillipomasamaki, Kadeghe G Fue, Malongo R. Mlozi, Siza, 2016). Most of the farming activities depend on rain for irrigation of their crops. But due to global climatic change it is becoming harder for farmers to predict the right time to plant their crops. Tanzania Meteorological Agency (TMA) is tasked with the responsibility of providing weather and climatic service (Camilius A Sanga, Joseph Phillipomasamaki, Kadeghe G Fue, Malongo R. Mlozi, Siza, 2016).

TMA is faced with a challenge of bringing awareness as well as means of package and disseminate weather forecast information to farmers. Therefore an information system that will help tunnel the information from TMA and send it to farmers is desired. In this work, a system for packaging and disseminating of climate information from TMA to smallholder farmers was designed and implemented. The system uses mobile phones and computers in sending the forecasts to the recipients through SMS or an android application. The system is interactive such that a farmer can

ask questions or ask for clarifications from the system. Also it has chat module for farmers with android phones. The acknowledgement for SMS received by farmers has also been implemented.

Farmers will be able to receive weather information in three ways. First is through SMS for those farmers who have feature phones. Here there two options, because of TMA want a cost effective solution, they can opt either to send SMS with weather information to extension officers and automatic that SMS will be resent to farmers assigned to that extension officer so that farmers cannot be surprised to receive that information or the weather information will be sent directly to farmers. Secondly for those with smart phones will be able to receive weather information timely with notifications to their phones (like WhatsApp notifications) but also if they will be offline they can get an SMS to inform them of new incoming information. Thirdly is web based whereby it's like push notification and people with access to web can access as well as those registered their mail can get easily without every time retyping mails.

The system also is integrated with alert module if there will be anything to alert either farmers or any people regarding weather information. This alert is timely and appears like notification and repeats after every five minutes itself until you accept it. It supports integrations also of any system as it will be required.



Above is a group photo taken after the presentation at TAM on 12th October 2018; it comprises UDSM staff, TMA staff and UDSM PBL students on challenges 1 & 2.