

Project Status Report: CEEEn-2018CPST-DR-003

Report Date: 11/12/18

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Project Title: Flood Early Warning

1) Summary of technical/non-technical challenges encountered

- ONAMET (meteorological organization of the DR) does not produce a precipitation forecast on its own. Rather, it interpolates from other models and gives precipitation forecasts for specific stations.
- Find GFS precipitation forecast data that is high resolution and for a longer time than 1-6 hours. The GFS data is extremely difficult to sort through.
- Find GFS runoff forecast. This forecast will be analyzed along with the precipitation forecast.

2) Team approaches & resolutions to overcome challenges

- Coordinate with Fidel to meet with ONAMET when we visit the DR to learn what interpolation methods they are using to see if we can automate that process.
- Continue to search through the GFS database, recording what information we find out so we do not have to replicate our research.

3) Status of challenge resolutions & potential project impact

- Made progress finding a 1-degree bias corrected precipitation forecast.
- Still need to find the best forecast at .25-degree accuracy. This applies for precipitation and runoff.

4) Project status & summary

- We met with Fidel (our contact in the DR) and Dr. Nelson on Nov 7 to go over the scope and details of our project. We modified the scope slightly.
- We will focus our efforts on finding high resolution precipitation and runoff forecasts. In a GIS model, we will route these forecast into specific catchment basins. This should be usable with any polygon shapefile. We could use catchment basins as delineated by the Flash Flood Guidance System or the official INDRHI watershed areas of the country.
- We will also met with Dr. Hughes (BYU IT professor) to explore the possibility of using twitter data to identify floods. More research in this area needs to be done.