Mobile phones for the volunteers to collect (near-real time) rain data

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Abstract

Sudan Meteorological Authority (SMA) Federal Ministry of Science and Technology, and the Food and Agriculture Organization of the UN (FAO), corporate to set up and rehabilitate about (100) rain gauges network during the year 2008, and to provide (100) mobile phone, for the volunteers(rainfall readers). The guiding principle is to make the rain data arrive to Data centre in Khartoum in (near-real time). Most of the gauges locations already exist, but the data used to arrive to the data centre in Khartoum at the end of the rainy season which makes the use of this data is very limited, while the real time rainfall help on planning for the Agricultural practices. The subject of this poster is to evaluate mainly the positive impacts of the new system to SMA and all level partners, to display the coverage of this net work, and to give an idea about the rainfall in Sudan as general.

Introduction

Depending on rain-fed agriculture, both drought and floods affect the food security, since the availability of real time rain data is very essential to make the weather prediction, we need to increases both the ordinary and the recording rain gauges from 200 to 3000 as well as rain fall estimation system for the coverage of all the rainy area in the country to reduce the negative impacts as much as possible.).

Objectives

To highlight on the current situation, of the rain-gauges network, and to give proposals to strengthen it, and to develop the current collection system to gain the optimum goals

Rain collection system

The area of the Sudan is one million squire mile, and the country depends mainly on agriculture, (rain-fed and irrigated farming). Nearly fifty present of this area is subjected for cultivation and cattle movements.
The rain fall collection system before this project was depend on three ways

- the first one is the main synoptic stations where the rain data collected within the synoptic observations every 3 hours about 30 locations(near real time)
- rain collected from Khartoum state by volunteers about 35 locations(near real time)
- Rain collected from all part of the country where no synoptic stations about 80 locations in the north and 50 locations in the south. These location used to send the rain data at the end of the rain season

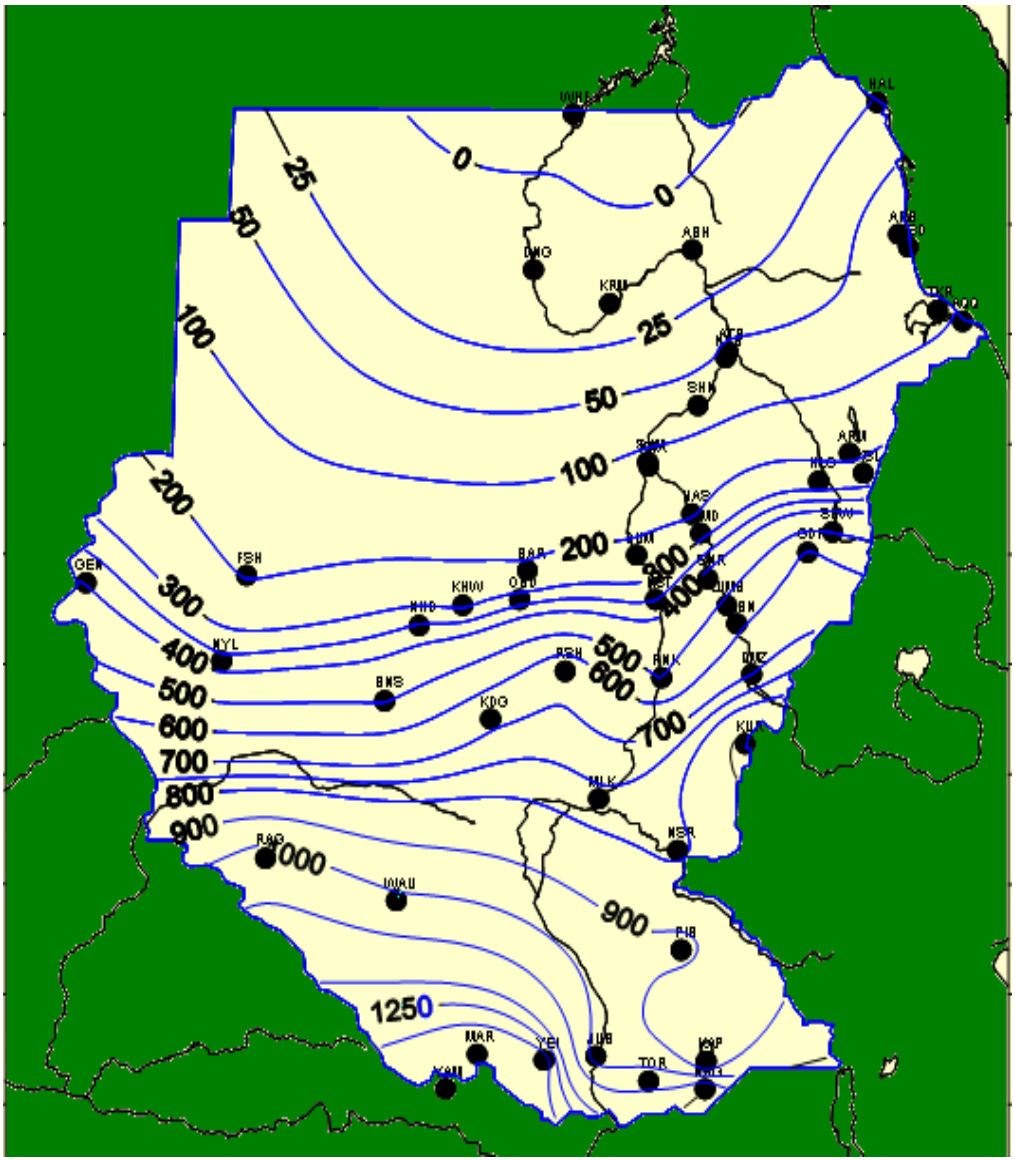
With this project (FAO - SMA) about 150 locations sends rain data daily (near real time).
The weather prediction which can be made out of the this real time rain data, will provide these sectors with a desired advice when to start cultivation and when and where to move

Elfued rain-gauge Volunteer

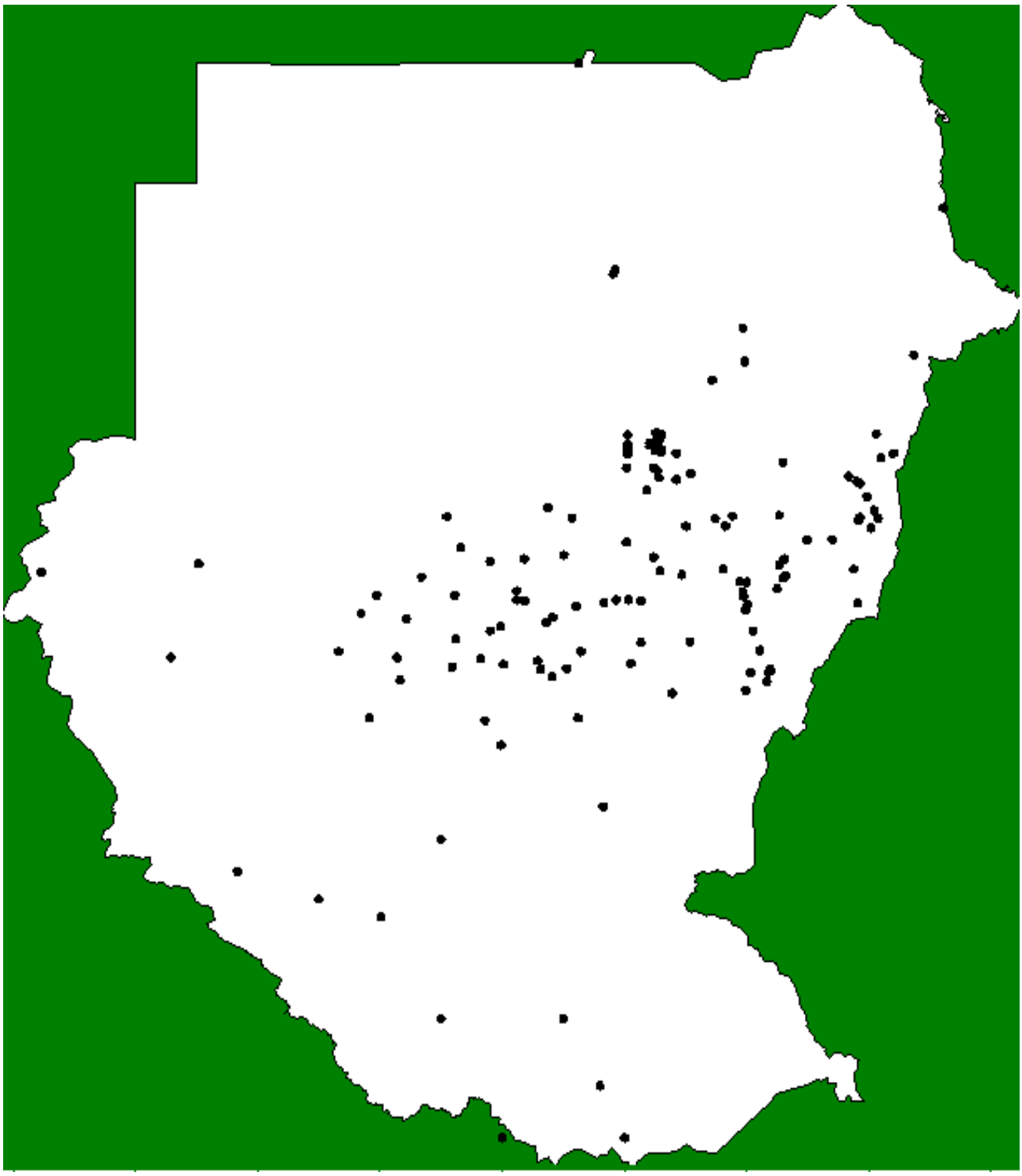
El Humadi Rain-gauge Volunteer

Rain in Sudan

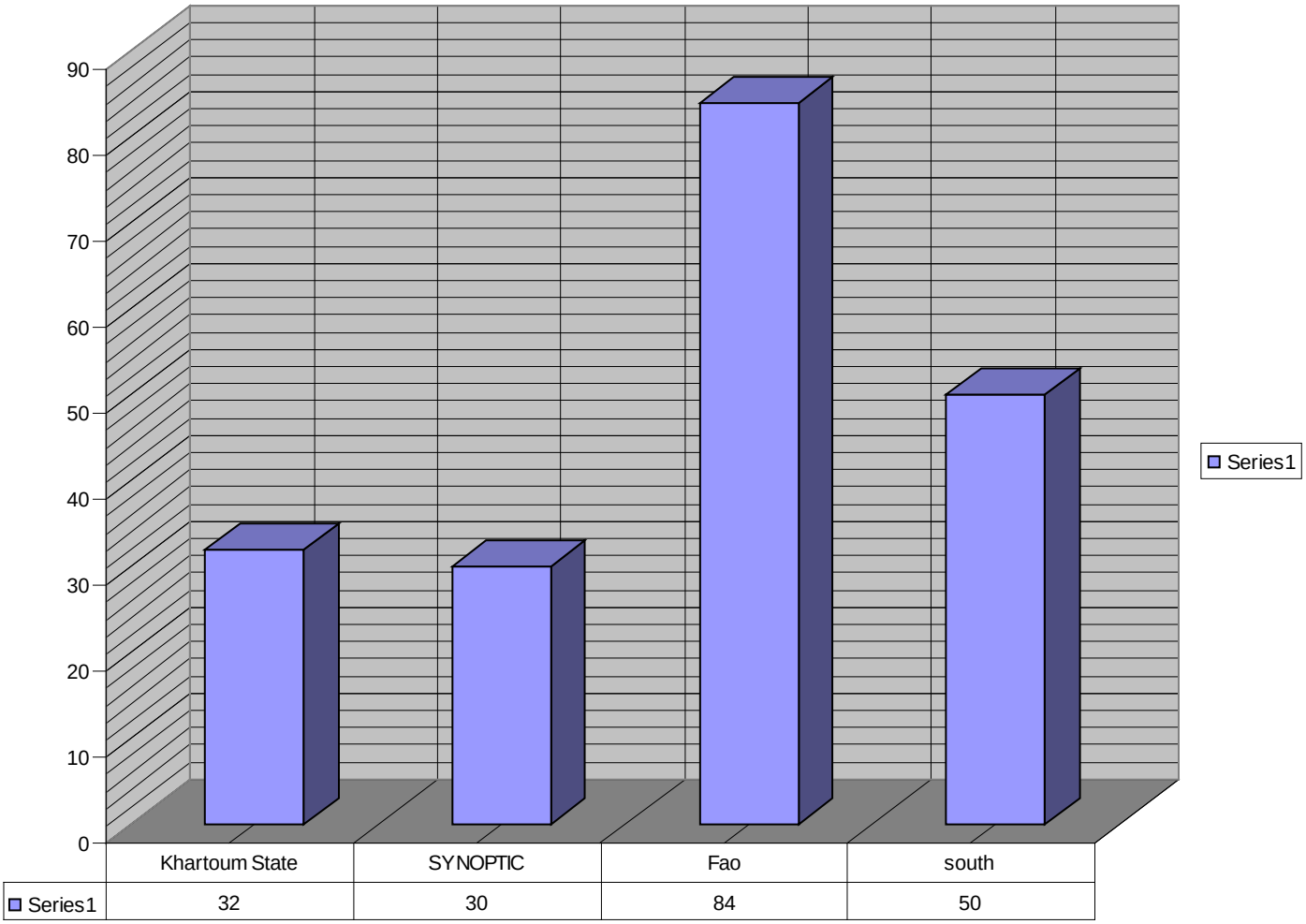
Sudan rain varies from north to south and the annual amount is zero millimetres in the extreme north of the country rising to 500 mm in central Sudan, to more than 1200 mm in the extreme southwest of the (country rain fall zones 1970-2000)



Gauges Network



The existing rain network



	Khartoum State	SYNOPTIC	Fao	south
Series1	32	30	84	50

The positive impacts of the new system

Real time rainfall data is more useful than the historical one, being in mind that the real time rainfall data could be useful to generate a prediction for the rest of the season regarding (onset of rainy season) Dry spells, offset of the season, which help on planning for the Agricultural practices. It is also recognize to be useful for agriculture, water resources, health and hydroelectric power and in other applications .historical rainfall data could be useful only in assessing the rainfall season by the time the critical time for the agricultural practices was past