

Blue Nile
Hydro-
solidarity

WOTRO

UNESCO-IHE Mid term progress (4-5 October 2010)

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Progress Chemoga in catchment

Oct. 4, 2010



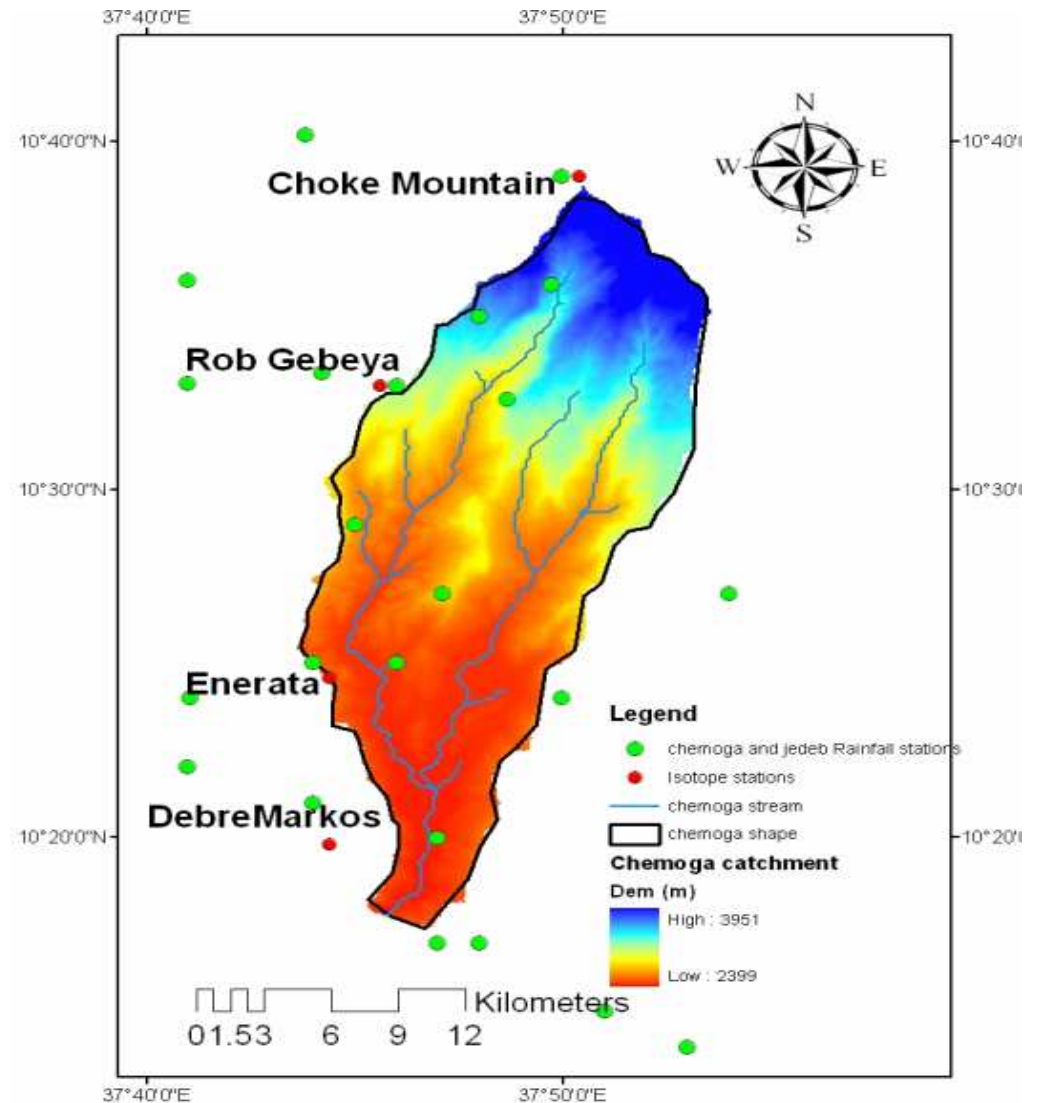
Outline

1. Introduction
2. Objective
3. Data collection
4. Streamflow analysis
5. What is next?



1. Introduction

- Catchment area 333km²
- Mean annual rainfall 1441 mm/y (1995-2004)
- Mean annual evaporation 980 mm/y
- Mean annual discharge 461 mm/y
- Elevation ranges between 2399-3951 m a.m.s.l



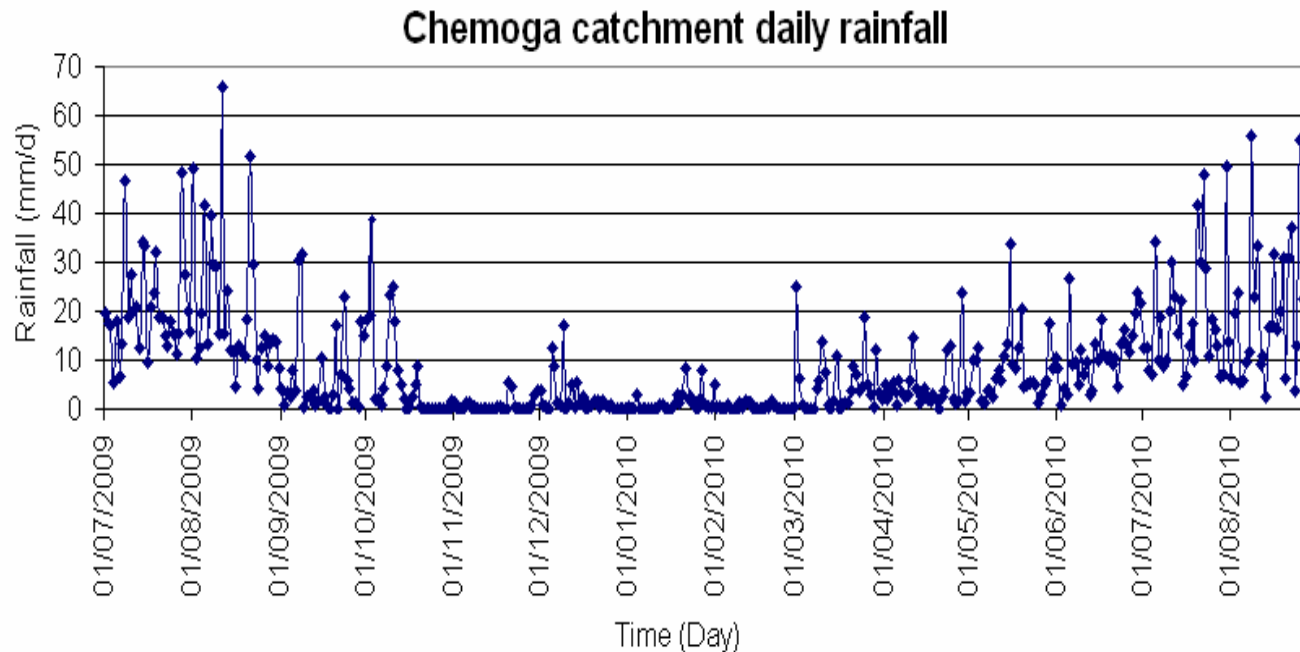
2. Objective

- The objective of this presentation is to show the implemented work in Chemoga catchment

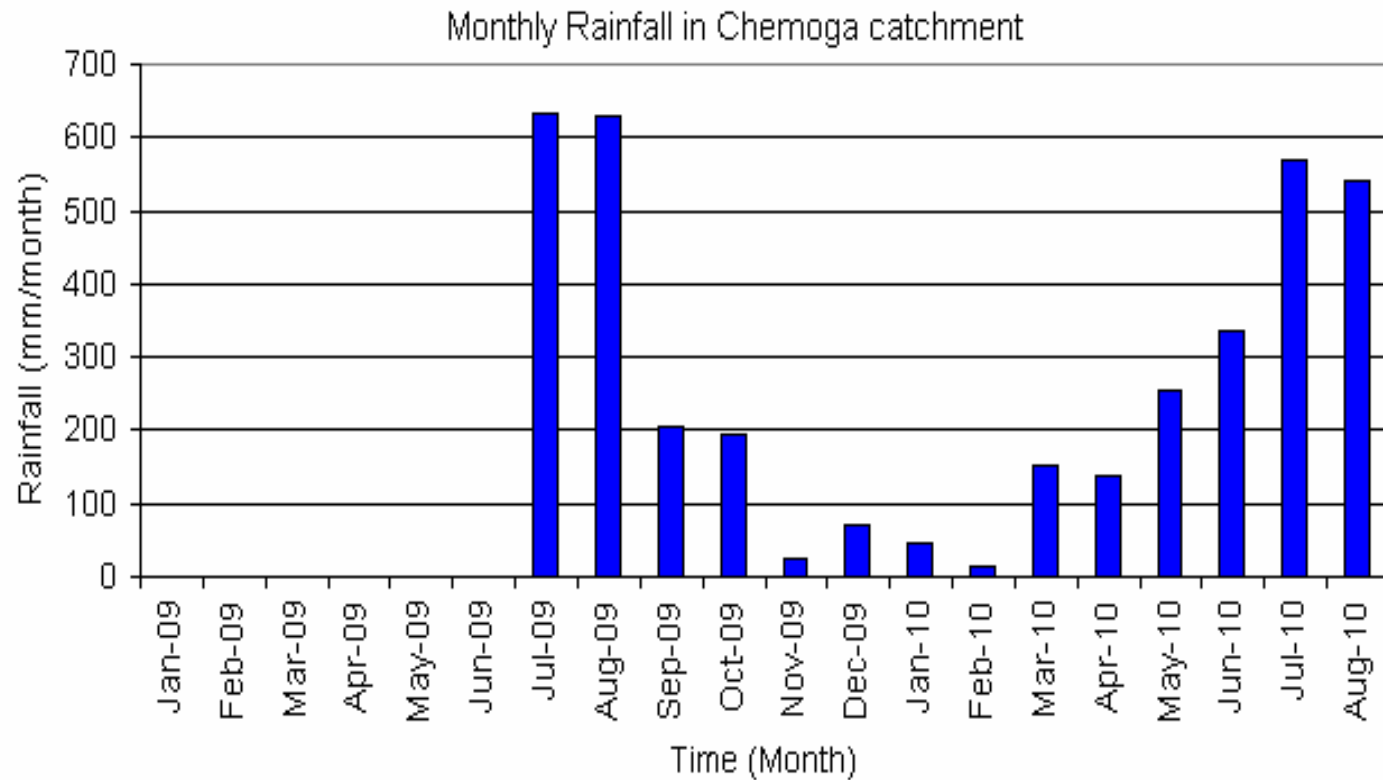


3. Data collection

- Daily rainfall data
- Streamflow data, daily and 15 minutes
- At different location
- Rainfall, spring and streamflow samples for Isotope (262)



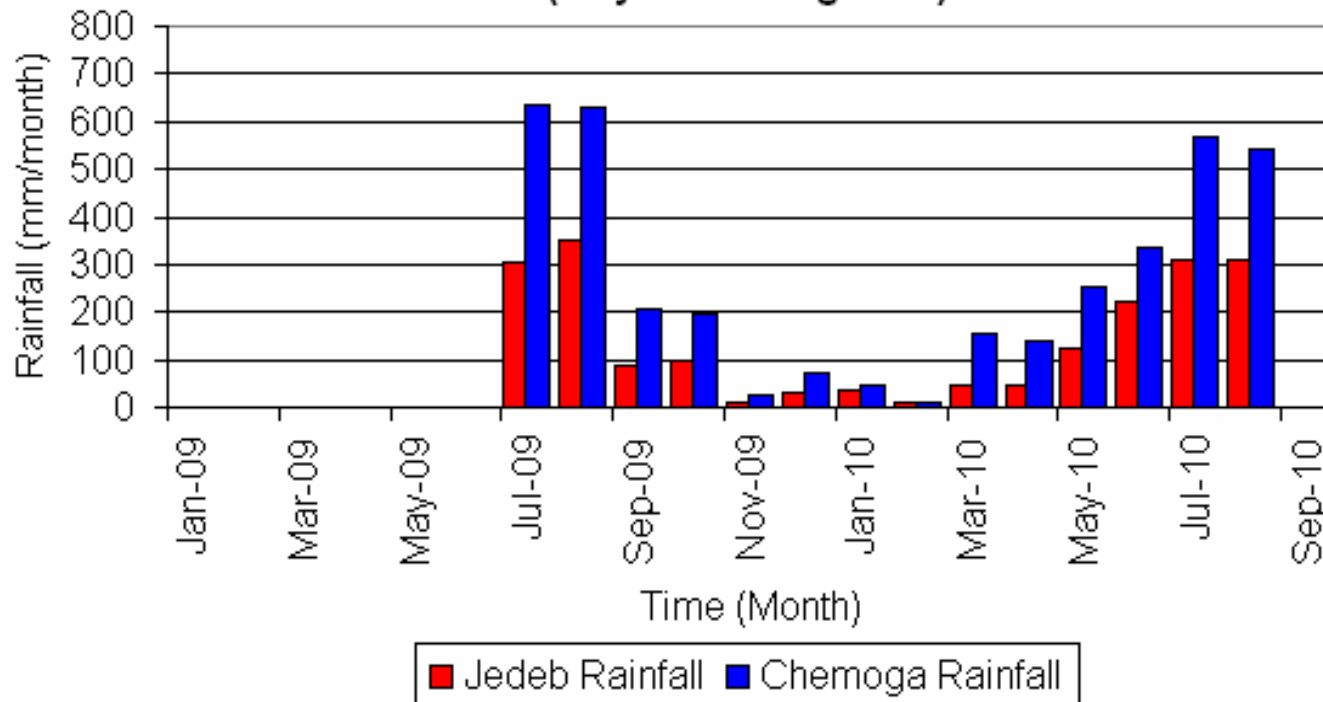
3. Data collection..





3. Data collection...

Comparison of monthly rainfall in Chemoga and Jedeb catchment
(July.2009 - Aug.2010)

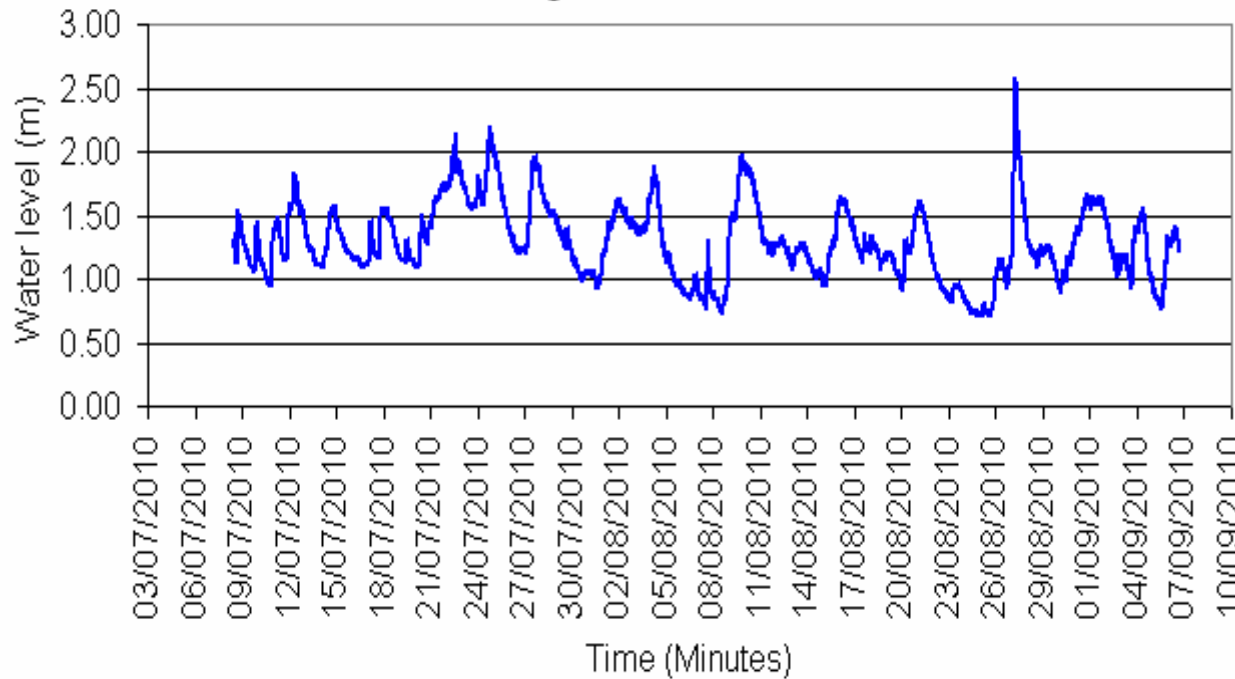


3. Data collection...

Water level (Diver) 2010



Chemoga River water level



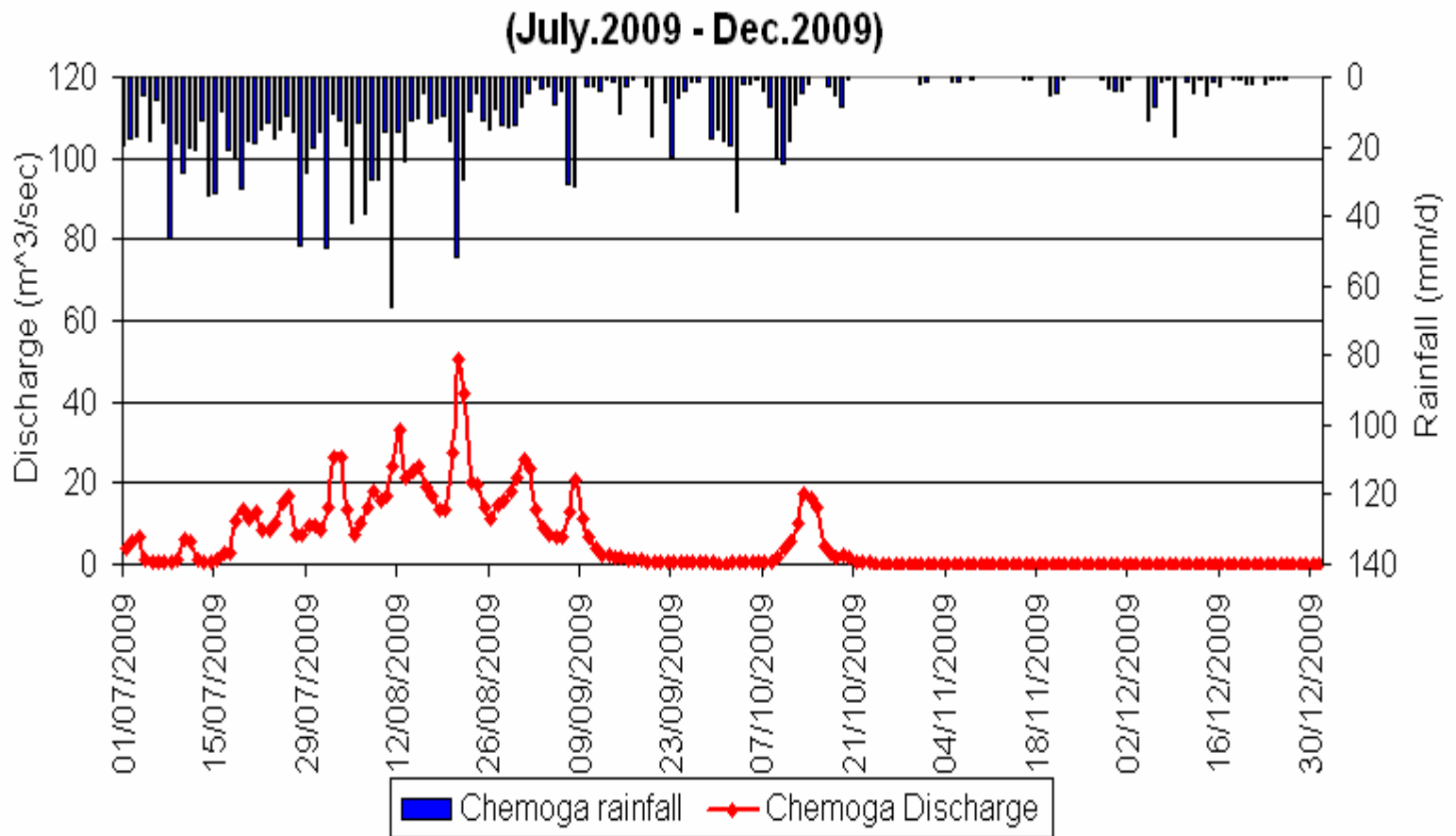
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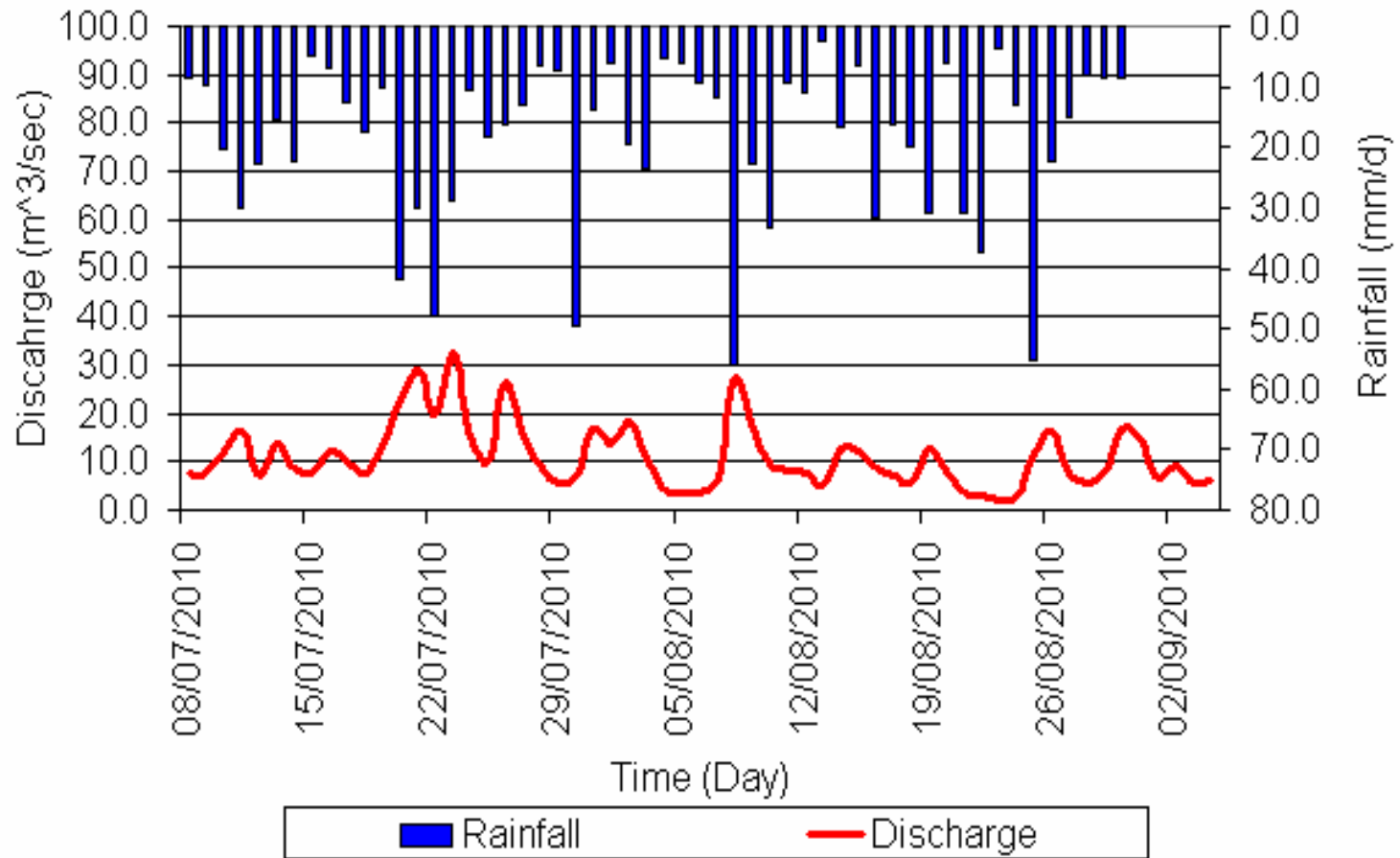
Addis Ababa University

3. Data collection..



3. Data collection...

Chemoga River daily discharge and rainfall (July.2010-Sep.2010)



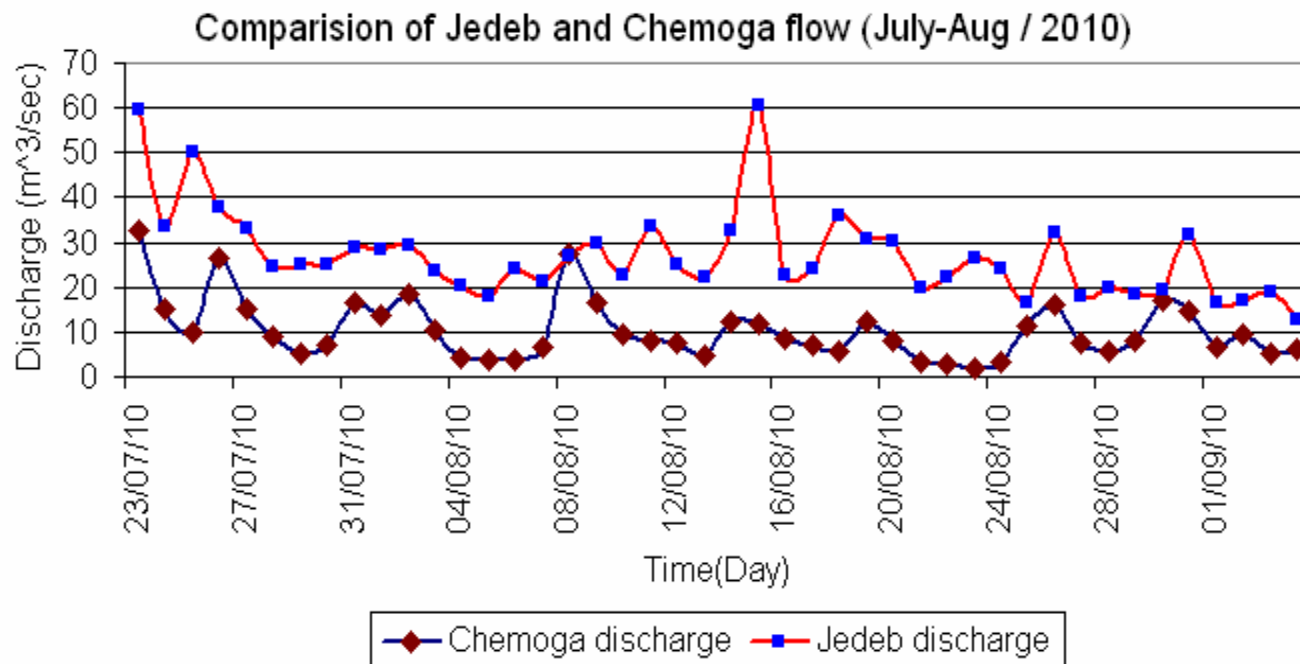
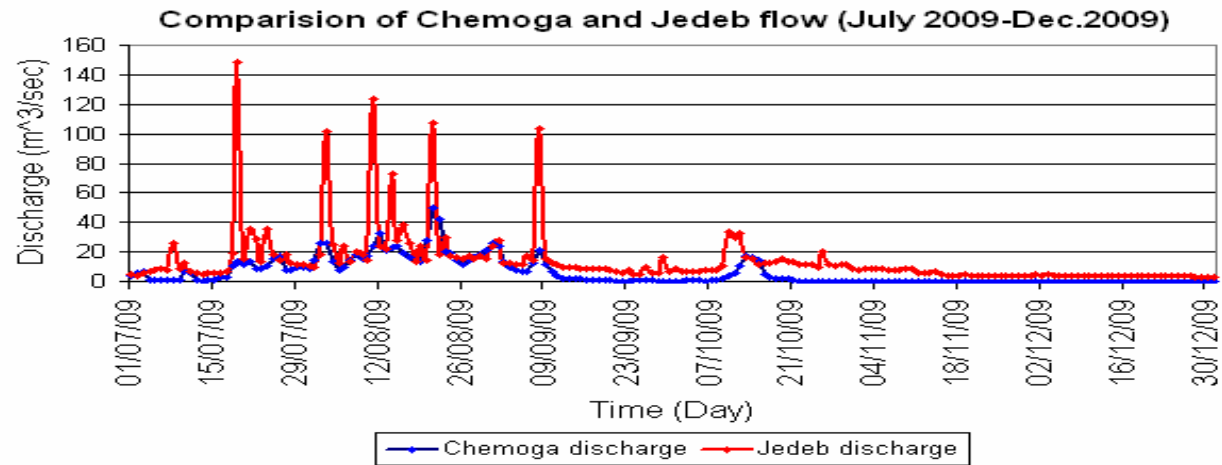
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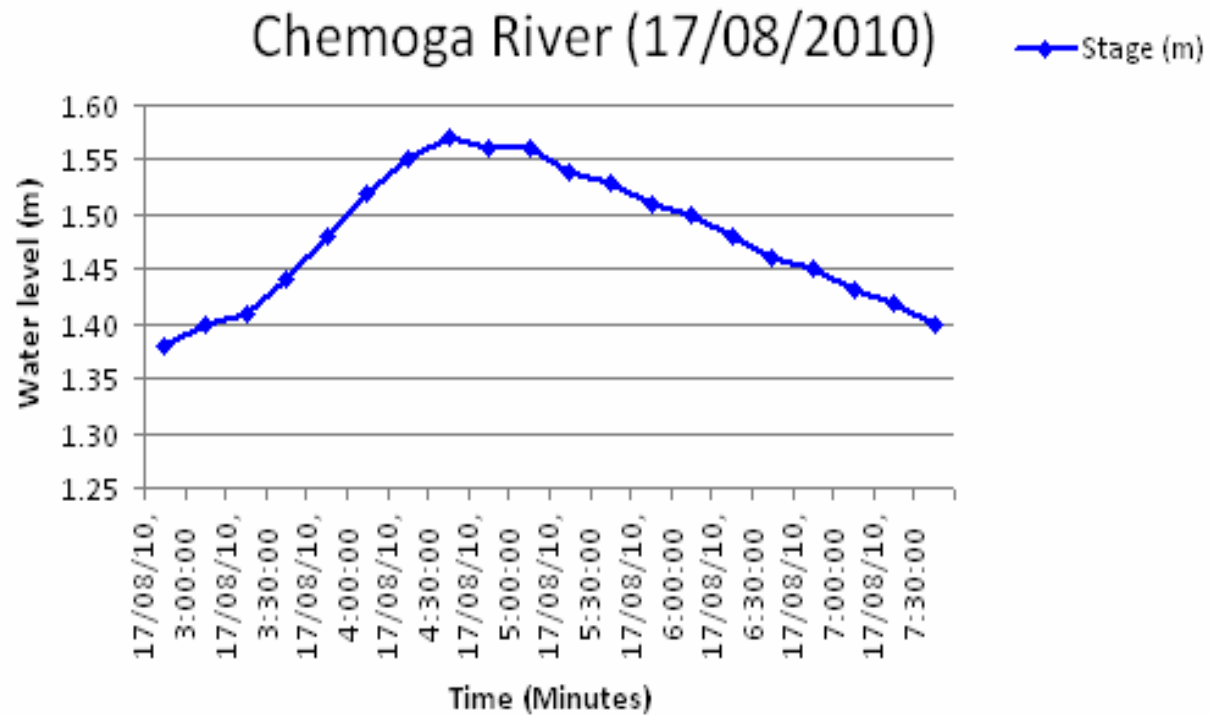
Addis Ababa University

3. Data collection..



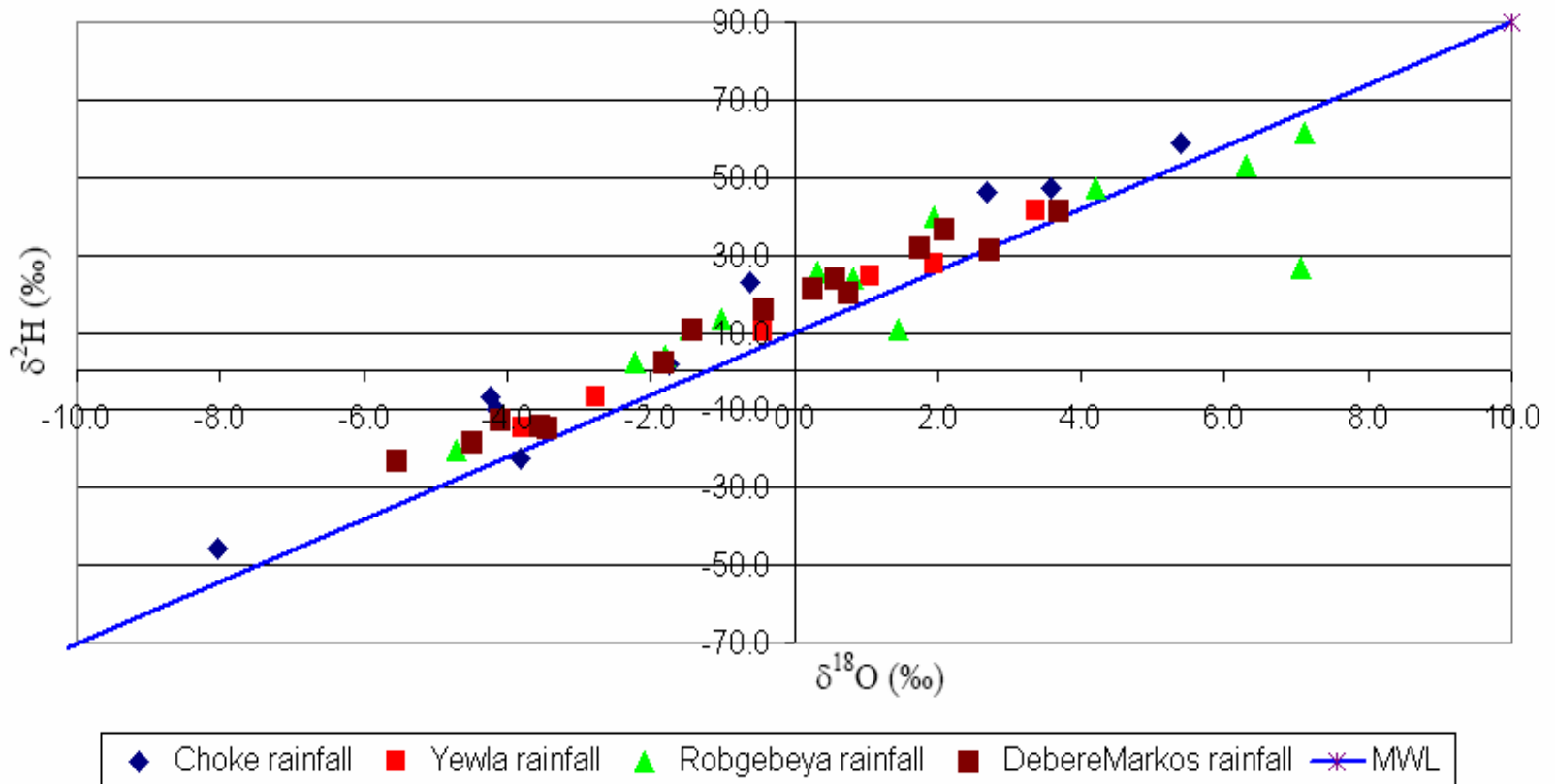
3.Data collection..

➤ Event streamflow sample



Isotopic composition of rainfall (2009) rainy season (Jun-Sept.)

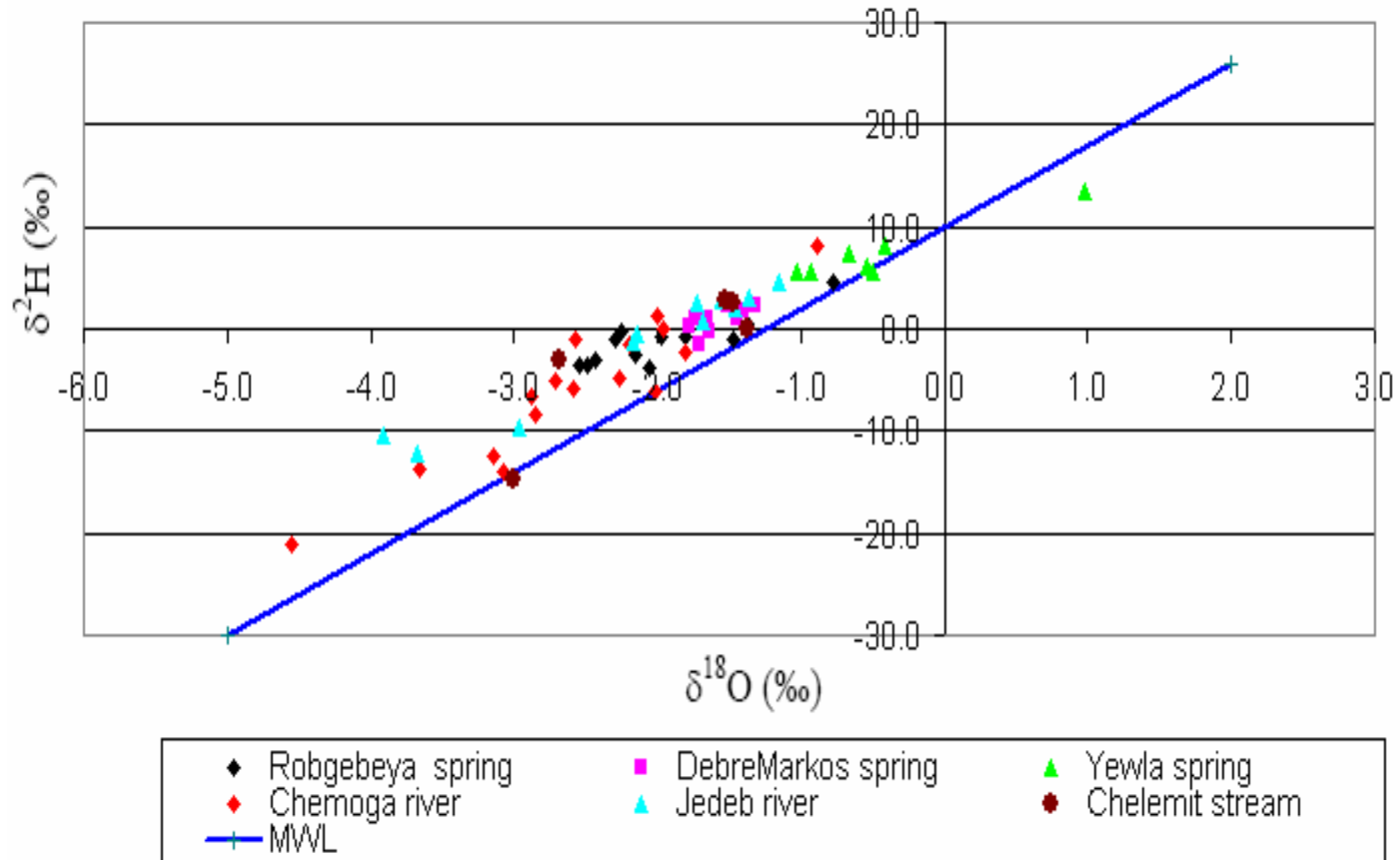
Spatial variation of rainfall isotopic composition





Isotopic composition of springs and rivers (2009) rainy season (June-Sept.)

Isotopic composition for springs and rivers

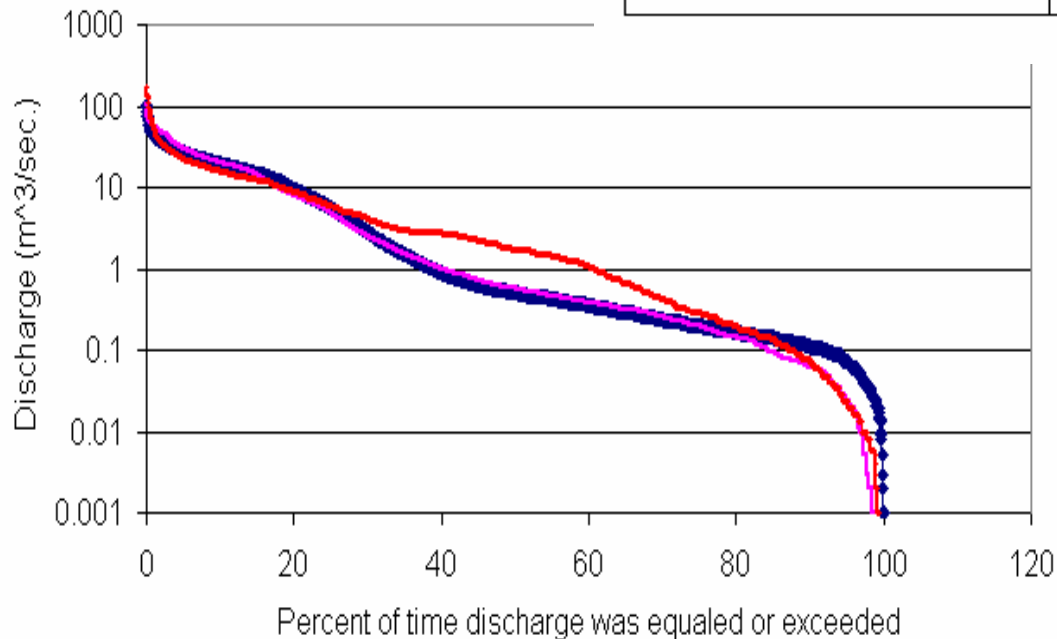


4. Streamflow analysis

- Analysis using FDC
- Period 1973-1985
- 1986-1995
- 1996-2005

1D Flow Duration curve for different window period

Time	Q50 (m ³ /sec.)	Q95 (m ³ /sec.)
1973-1985	0.507	0.071
1986-1995	0.575	0.024
1996-2005	1.764	0.024



◆ 1DFDC (1973-1985) ◆ 1DFDC (1986-1995) ◆ 1DFDC (1996-2005)

5. What is next?

- Further insight on runoff generation mechanism using isotope
- Developing Rainfall-runoff model using PC raster model



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Thank you!