Evaluating temporal changes to water bodies in Medak, India

By

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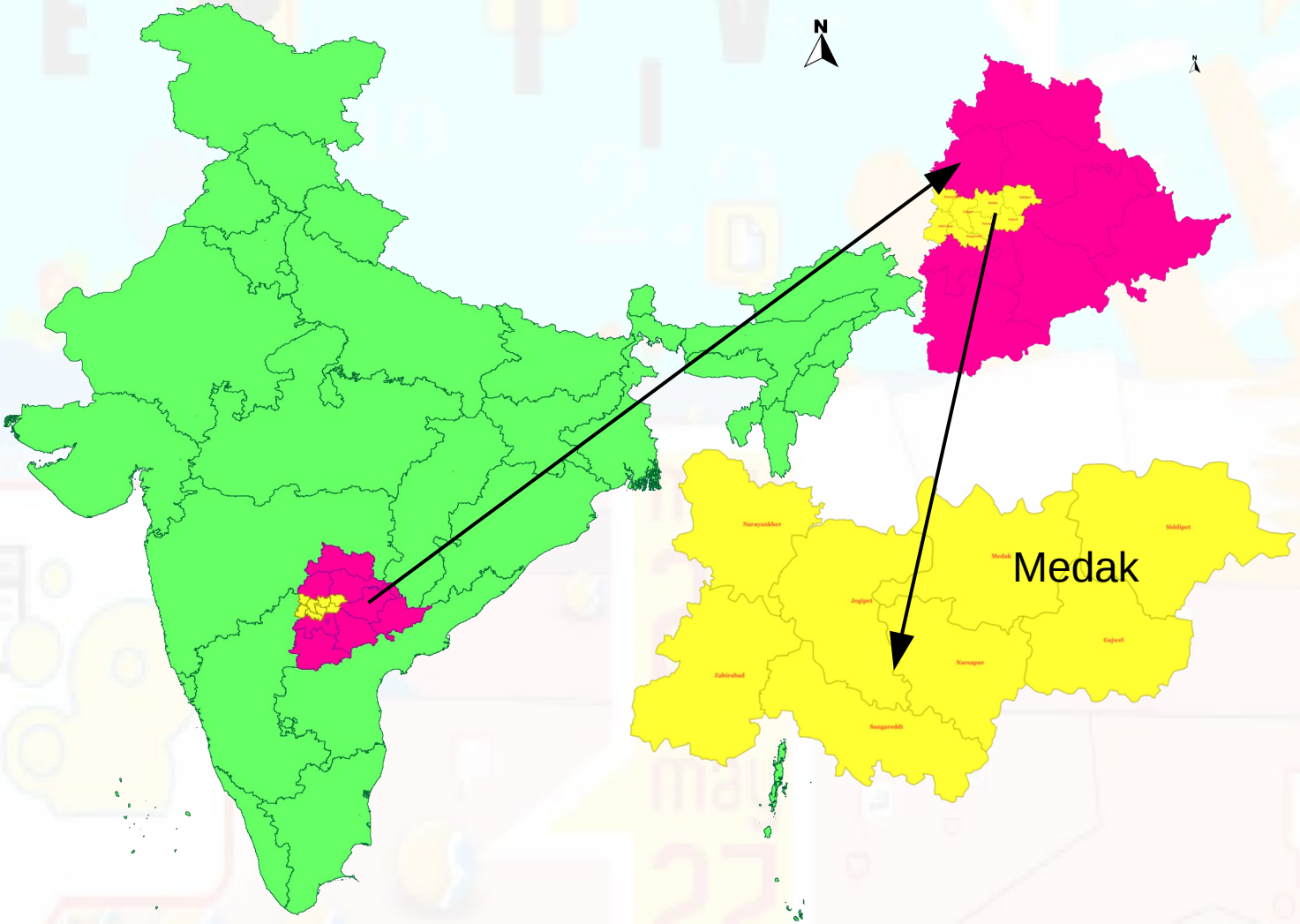
Area of Study



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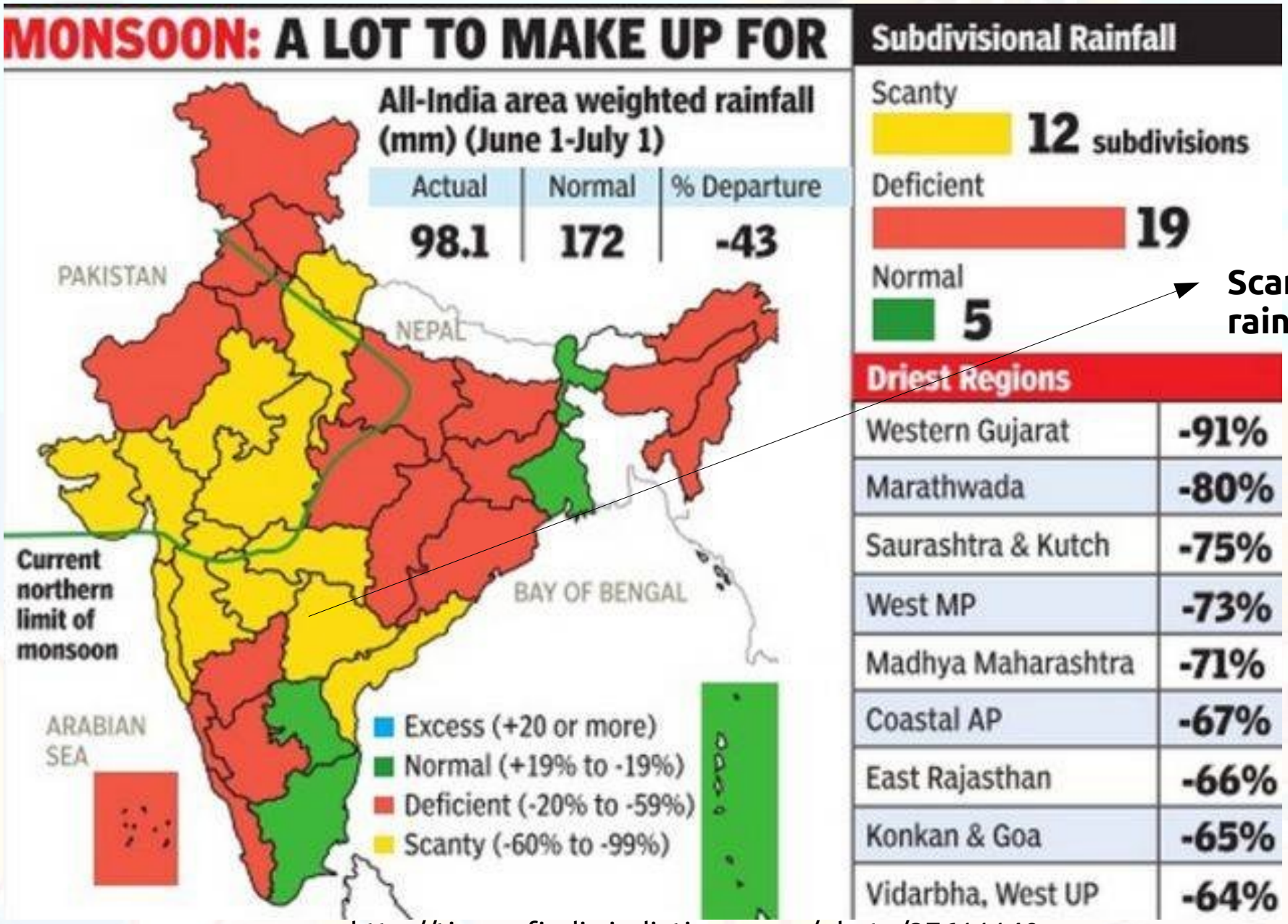
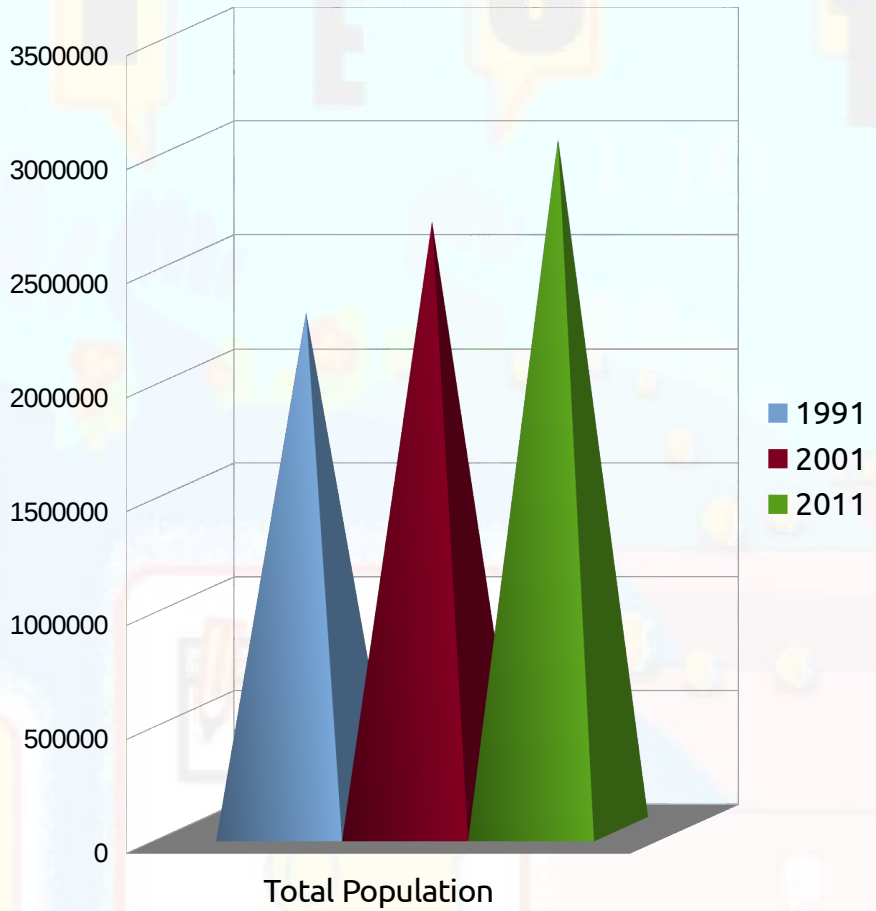


Scanty rainfall area

http://timesofindia.indiatimes.com/photo/37611140.cms

Demographic Profile of Medak



13%

Population increase in the last decade

89%

increase in Urban population

Population density

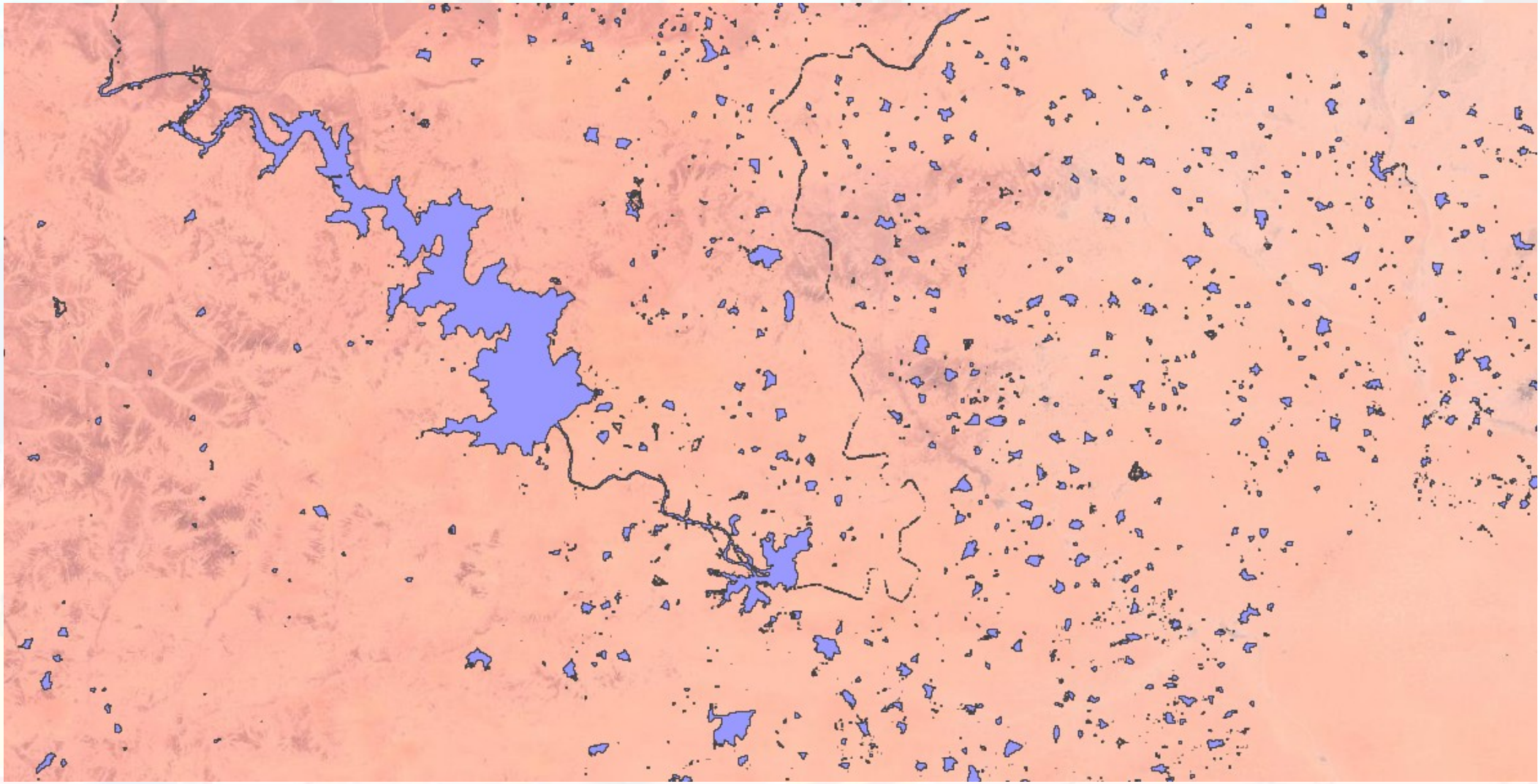
312 persons per sqkm

Almost **3** times that of Spain

Why Medak?

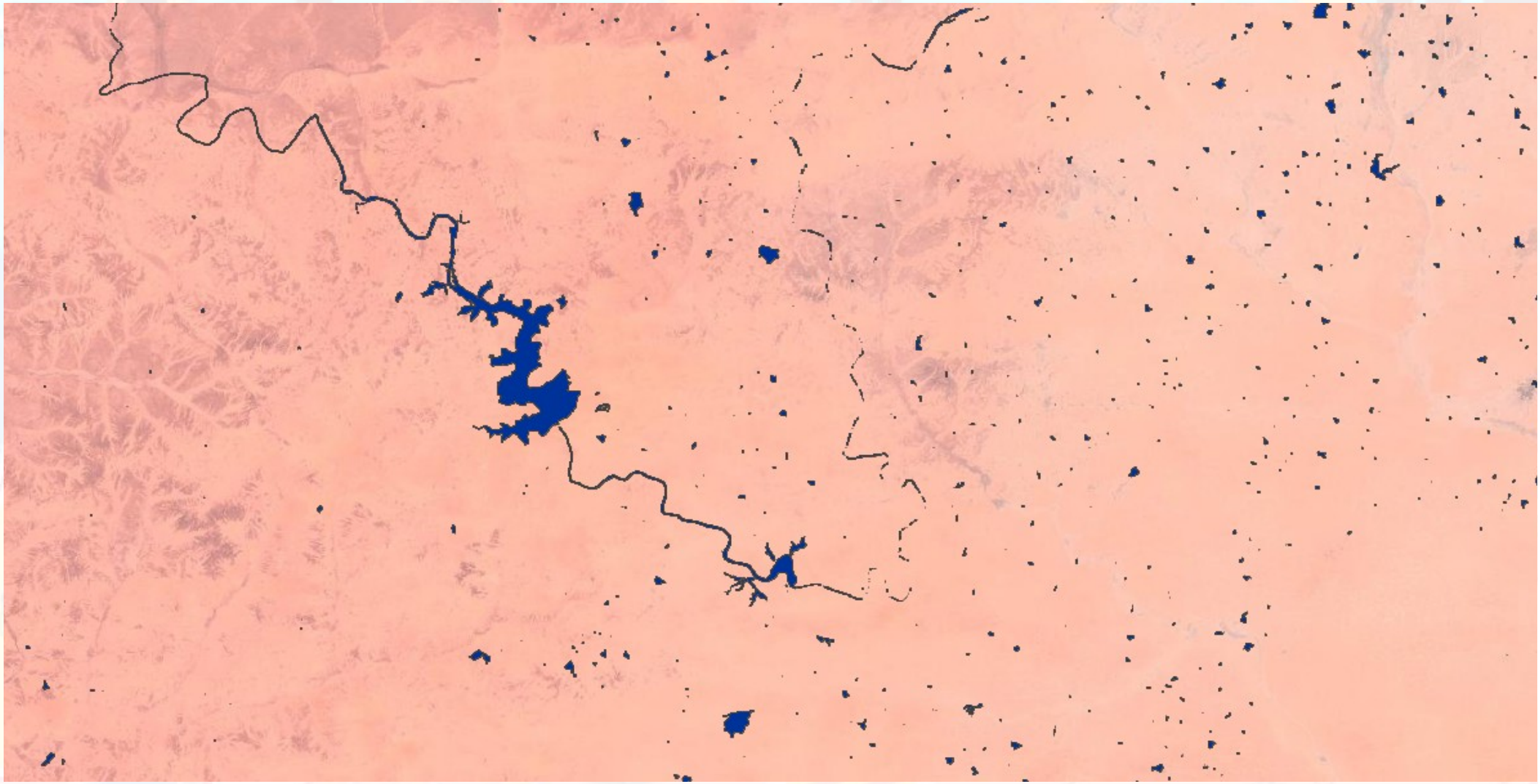
- Falls in zone affected by global climate change
- Has seen a severe drought last year

Water availability Map – 1995 December



Water bodies extracted from Landsat imagery using gvSIG

Water availability Map – 1995 March



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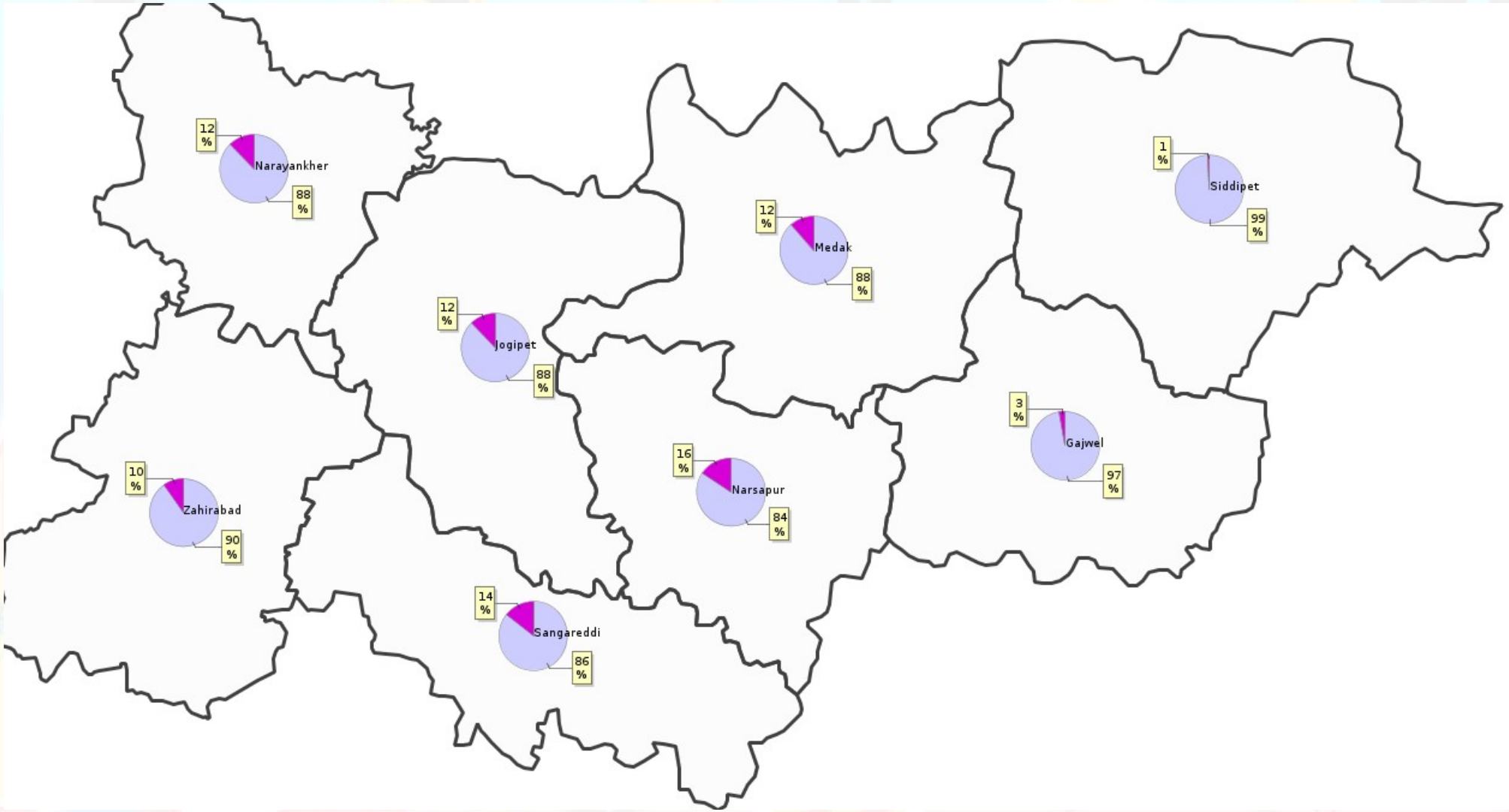

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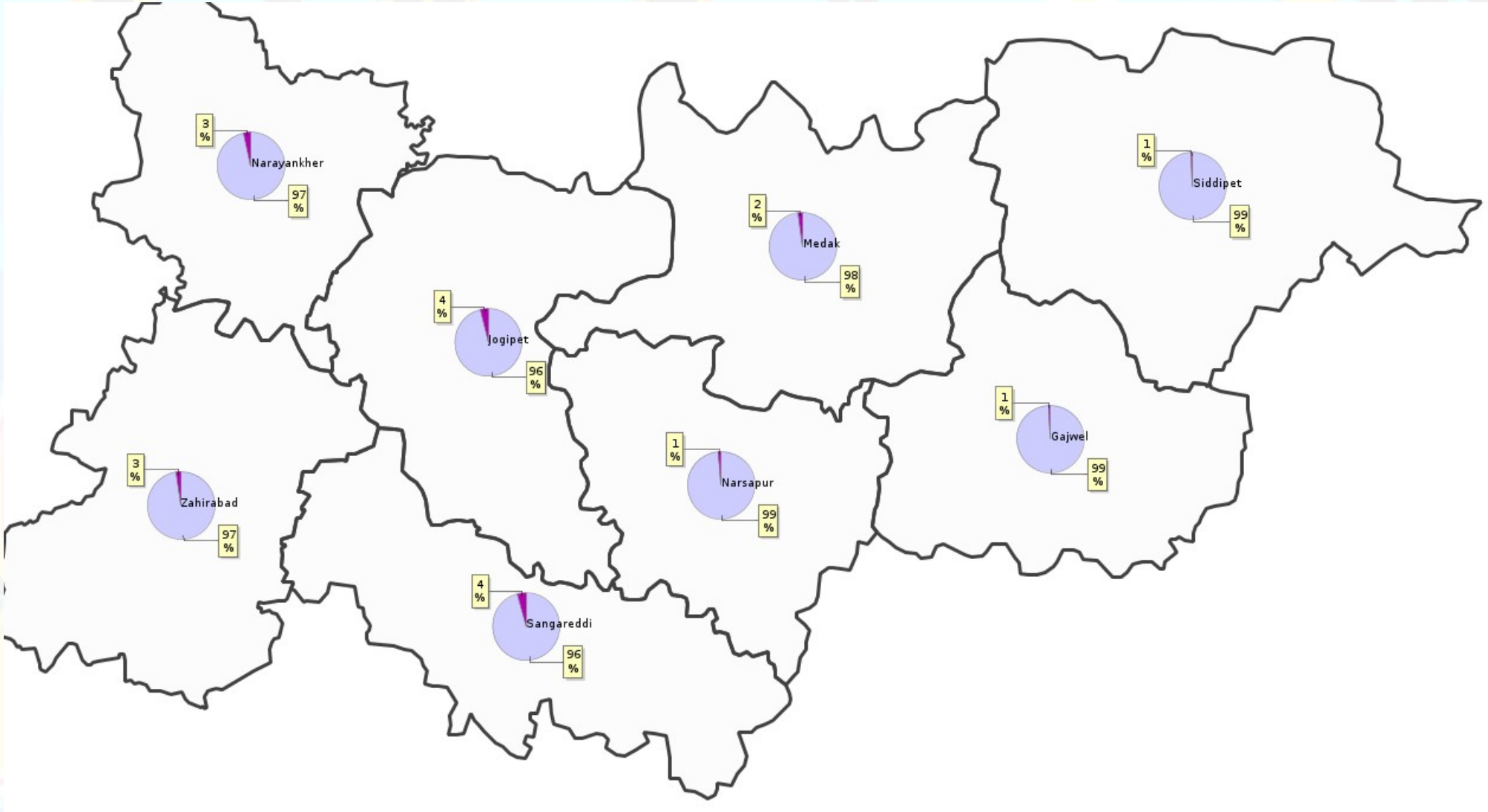
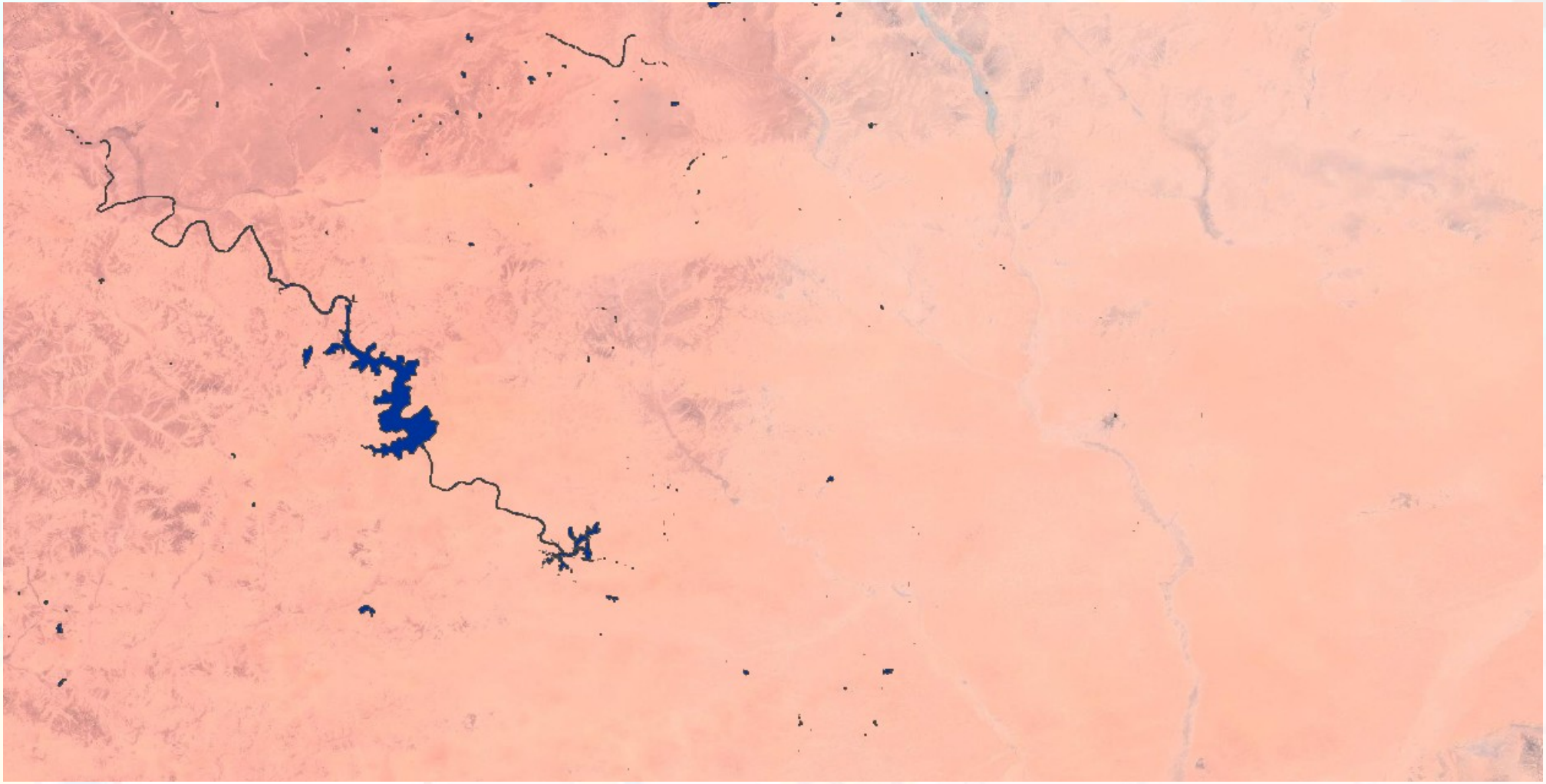
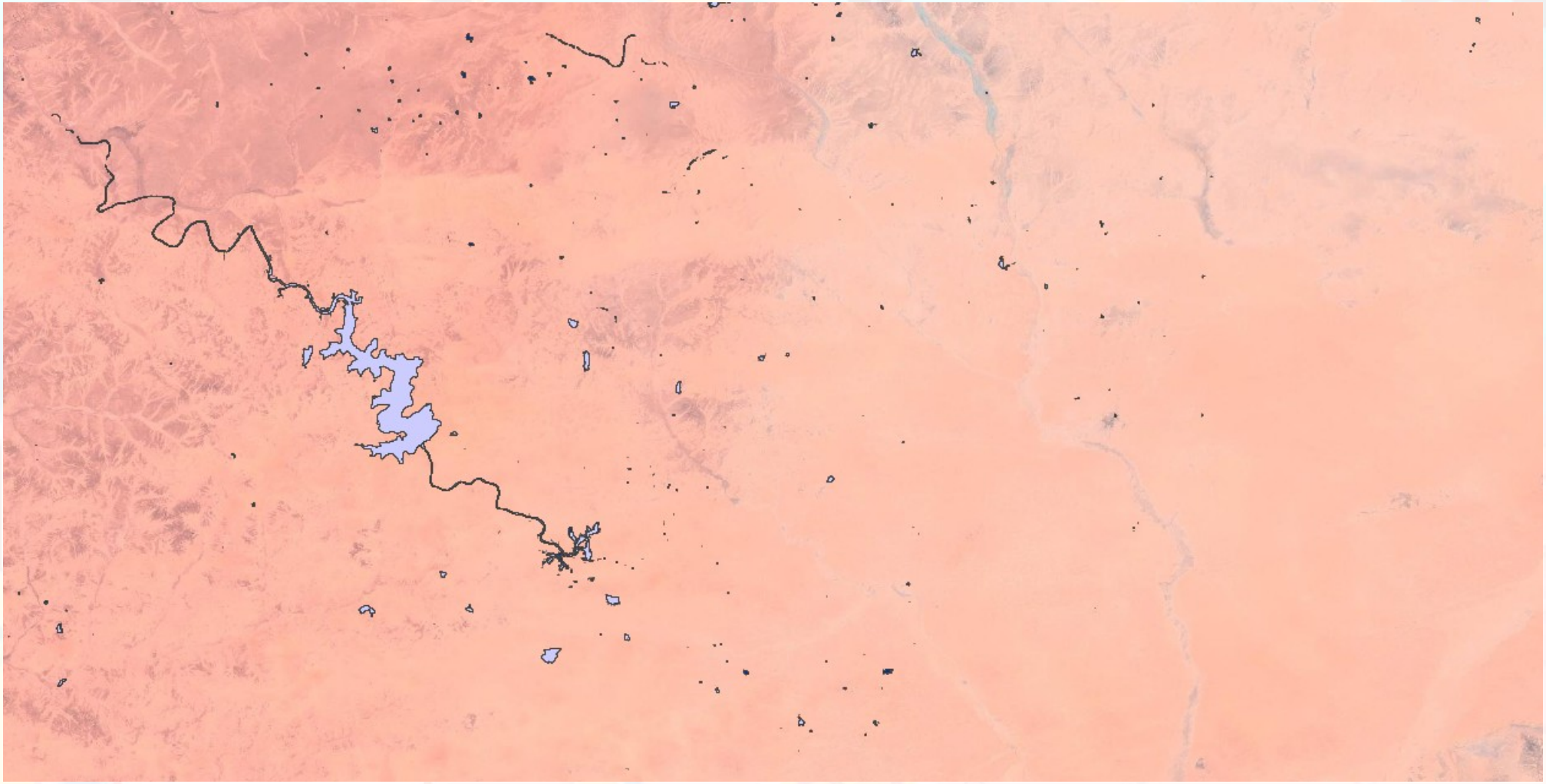


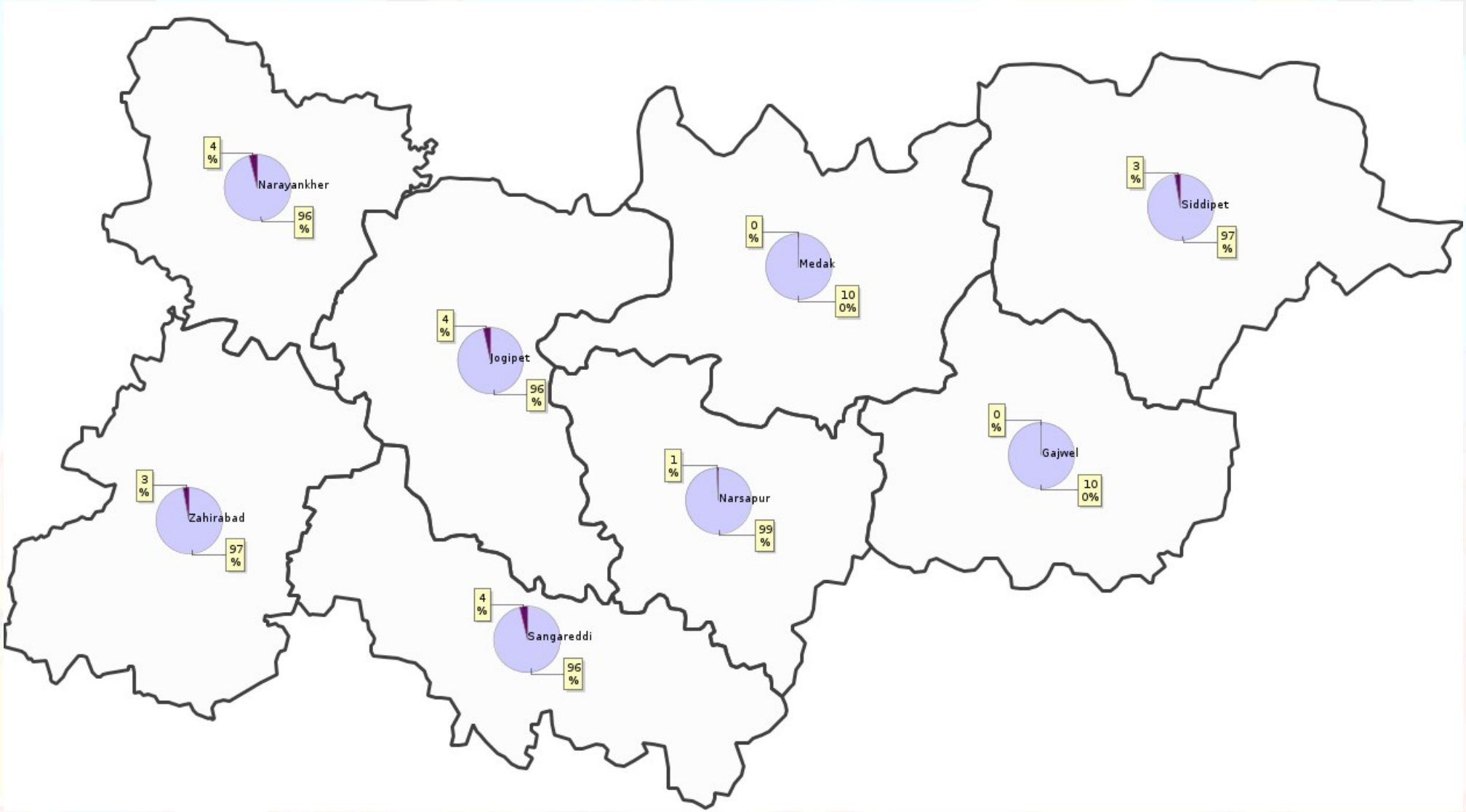
Water availability November - 2015



Water availability April - 2015



Water availability Map – 2015 November



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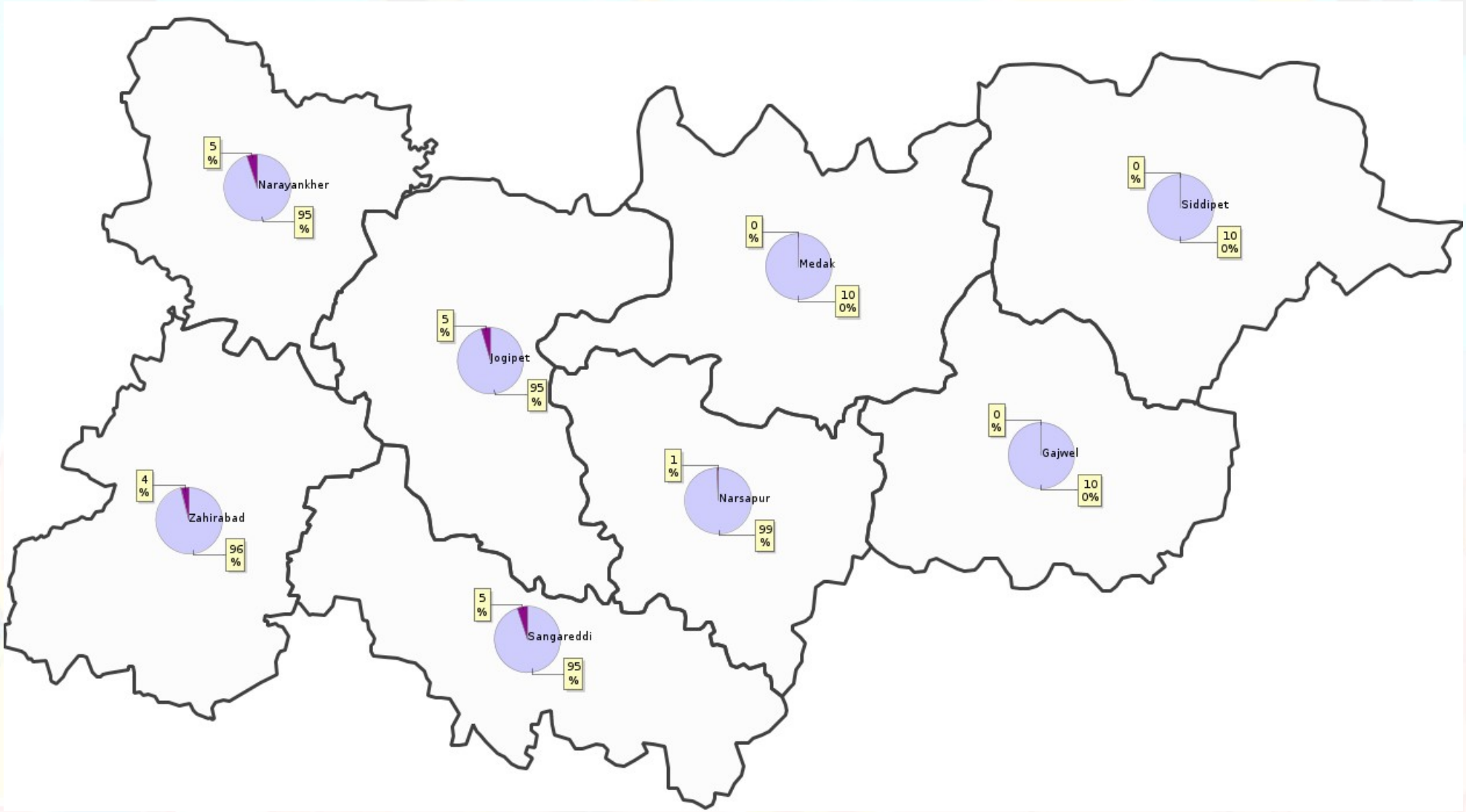
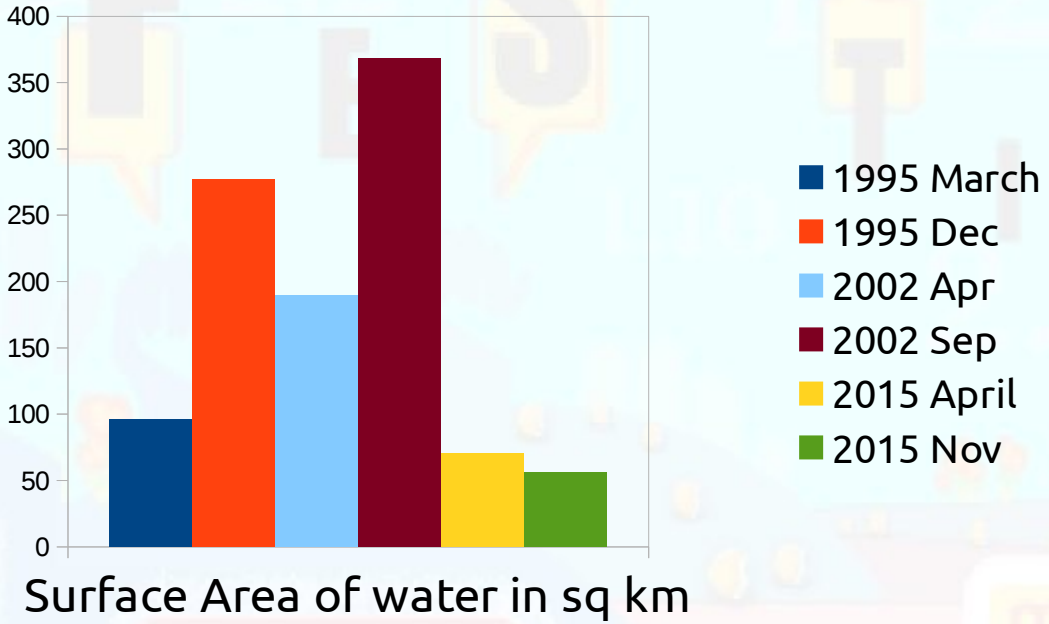


Water availability vs Population



Surface Area of water in sq km

Ratio of surface water area to total population:

In 2002, 7251 was the ratio
In 2015, 54000 was the ratio

Which is almost 8 fold increase leading to severe stress to water resources

Water consumption

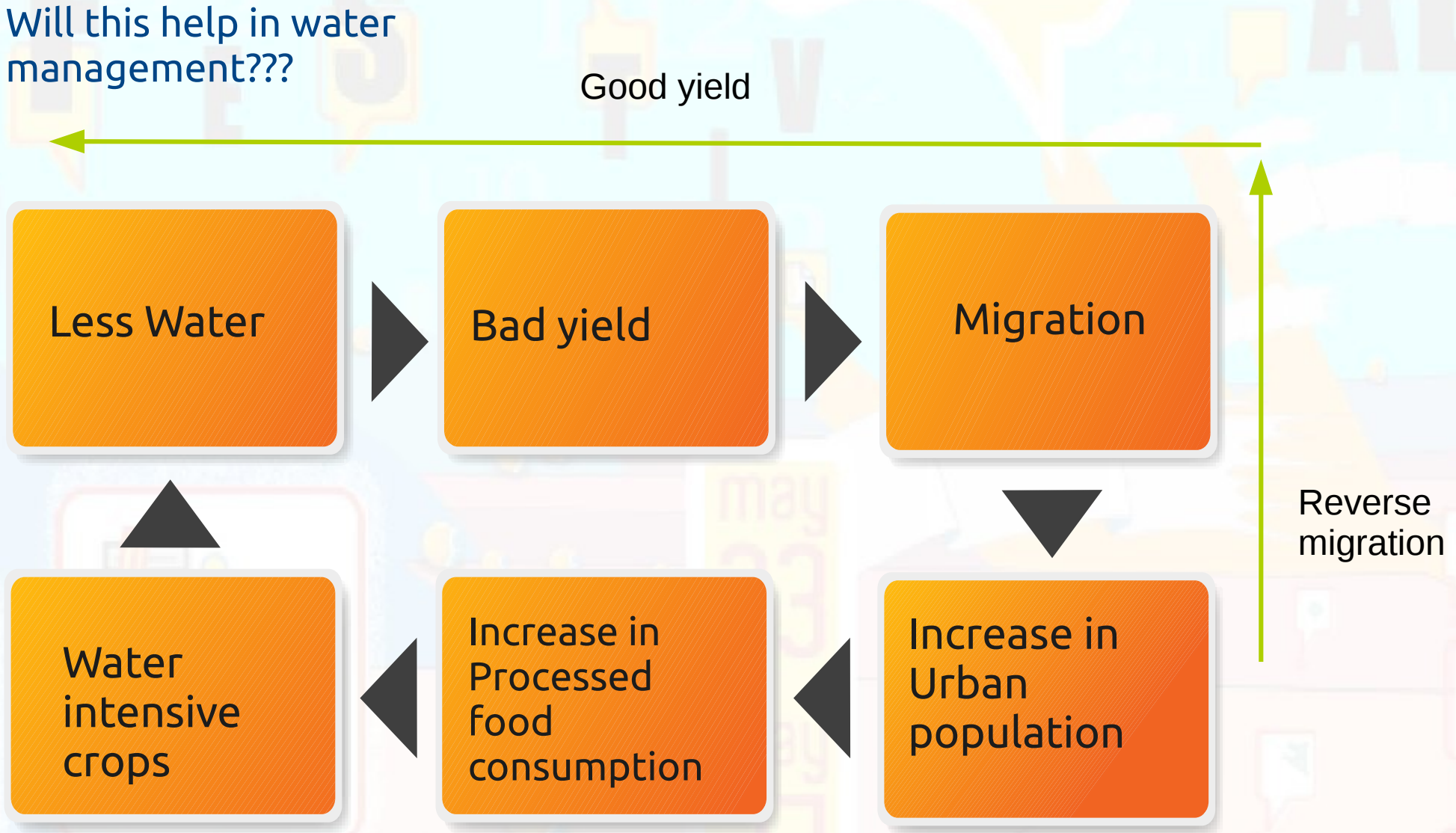
Domestic consumption 200 liters per day per person

Paddy 3000 to 5000 liters per kg

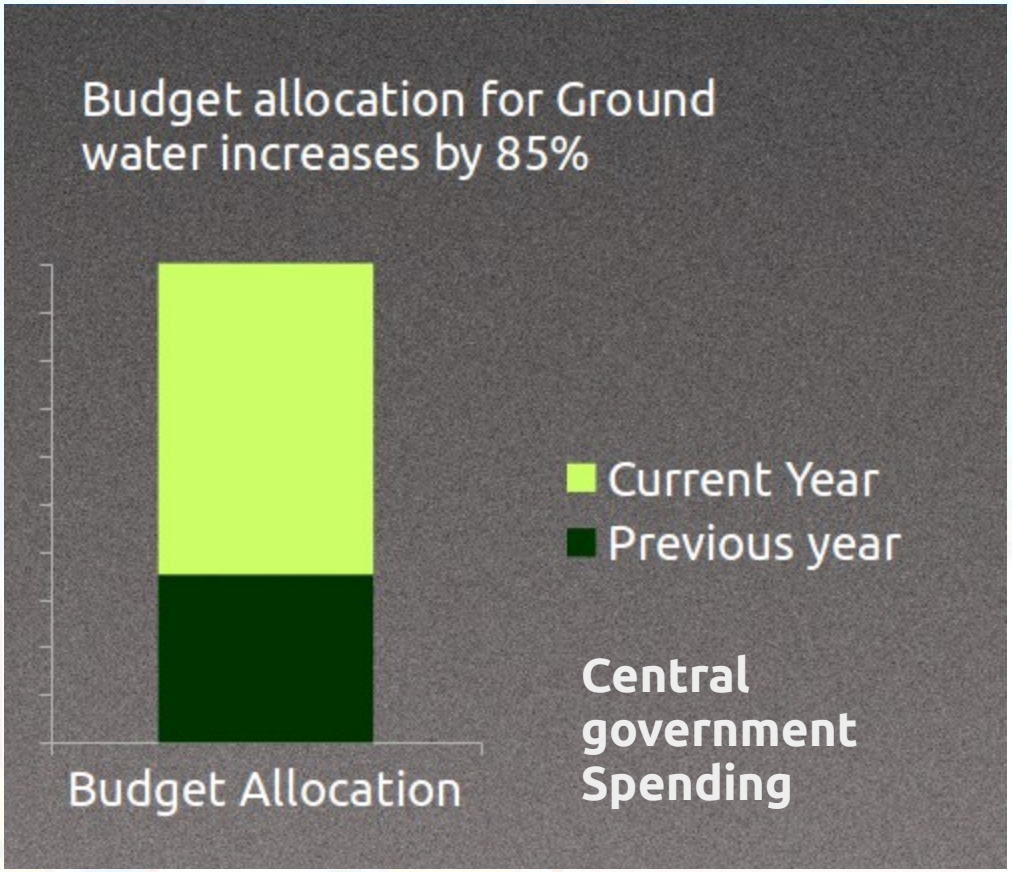
Jowar/Sorghum around 600 liters per kg

Consequences of drought

Will this help in water management???



Government Actions



$2 billion

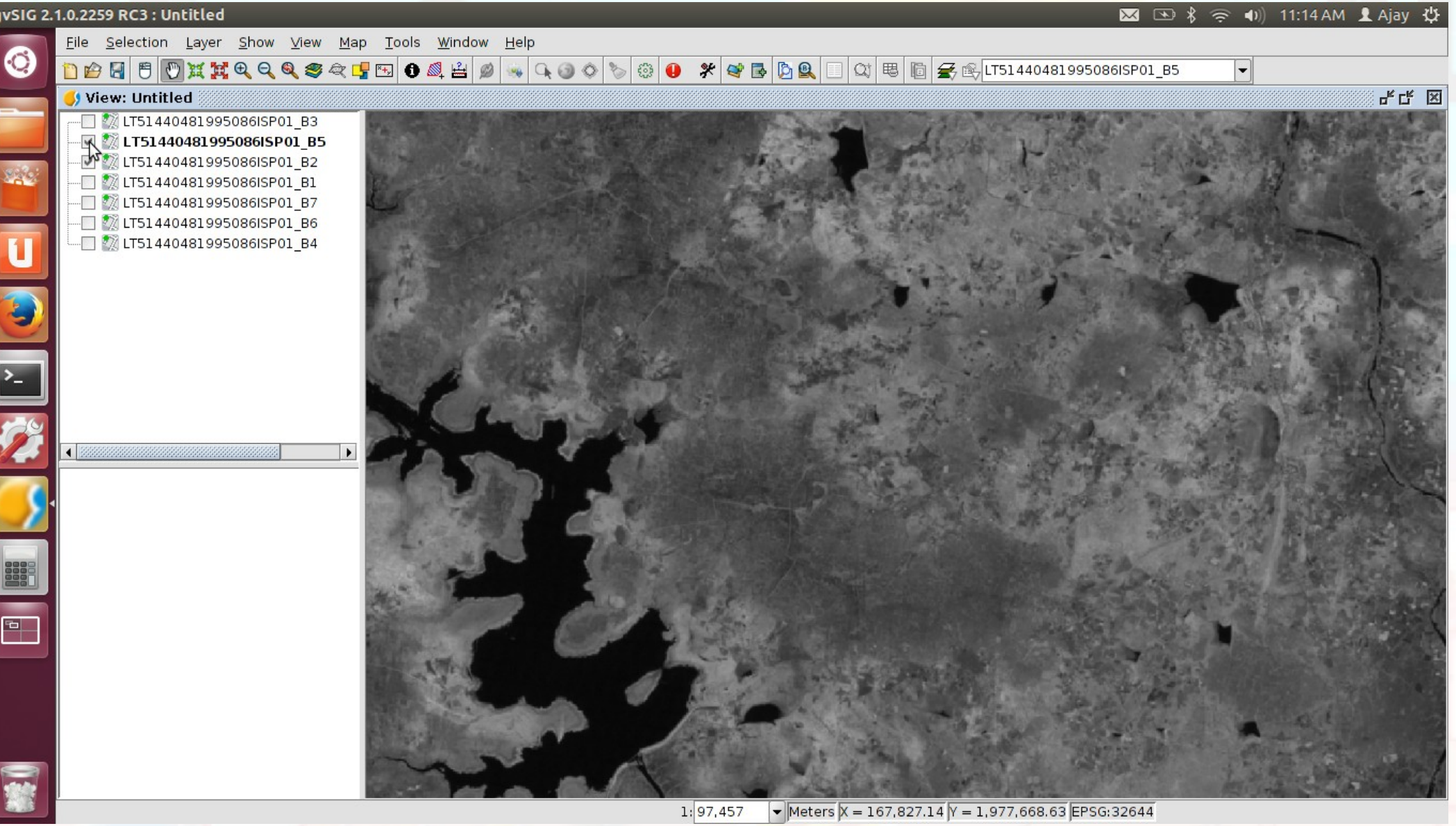
Local government is planning to spend in next 5 years on watersheds

Water grid to improve efficient usage of water

$0.5 billion

For organic farming schemes

gvSIG in this study



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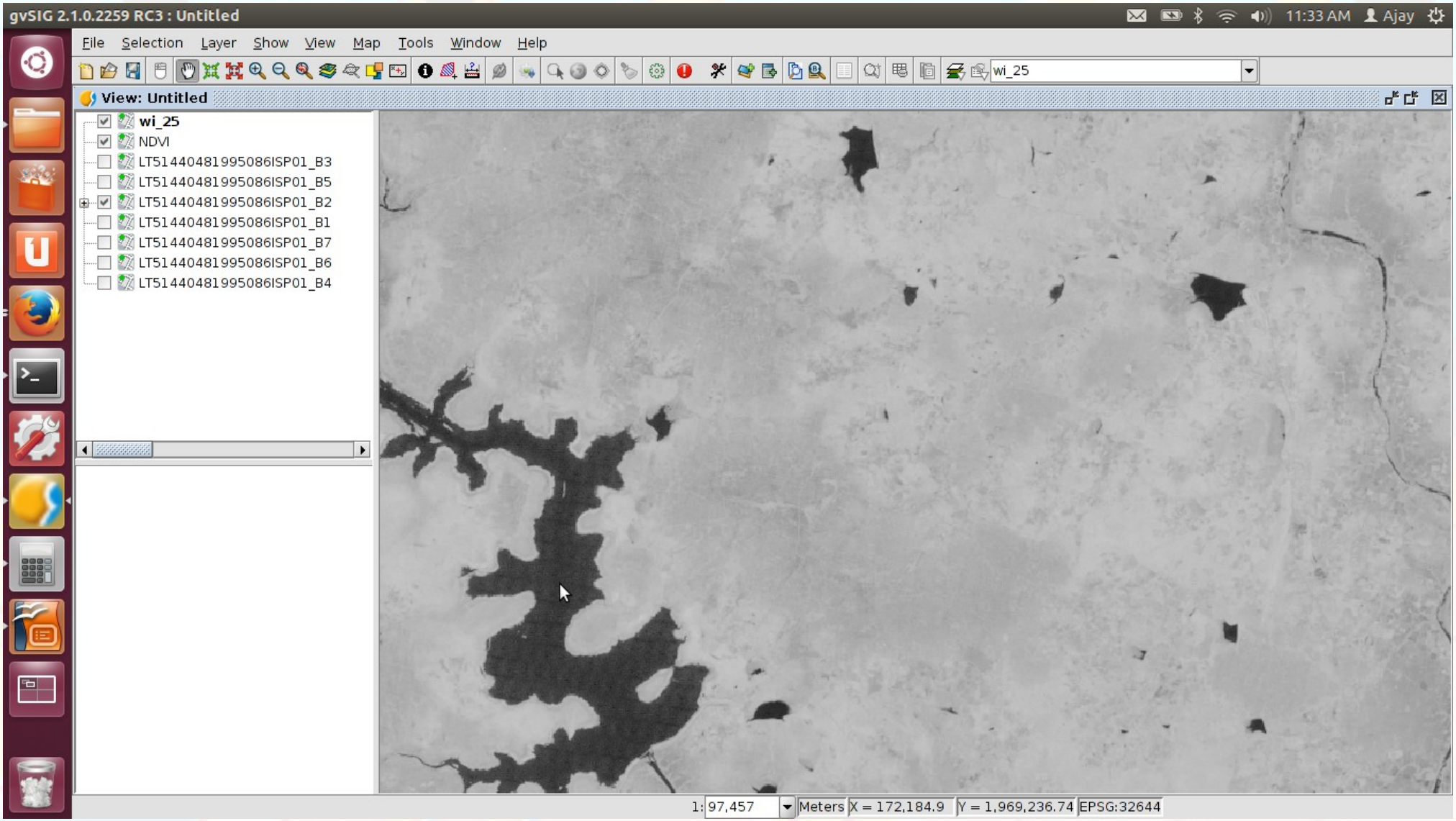
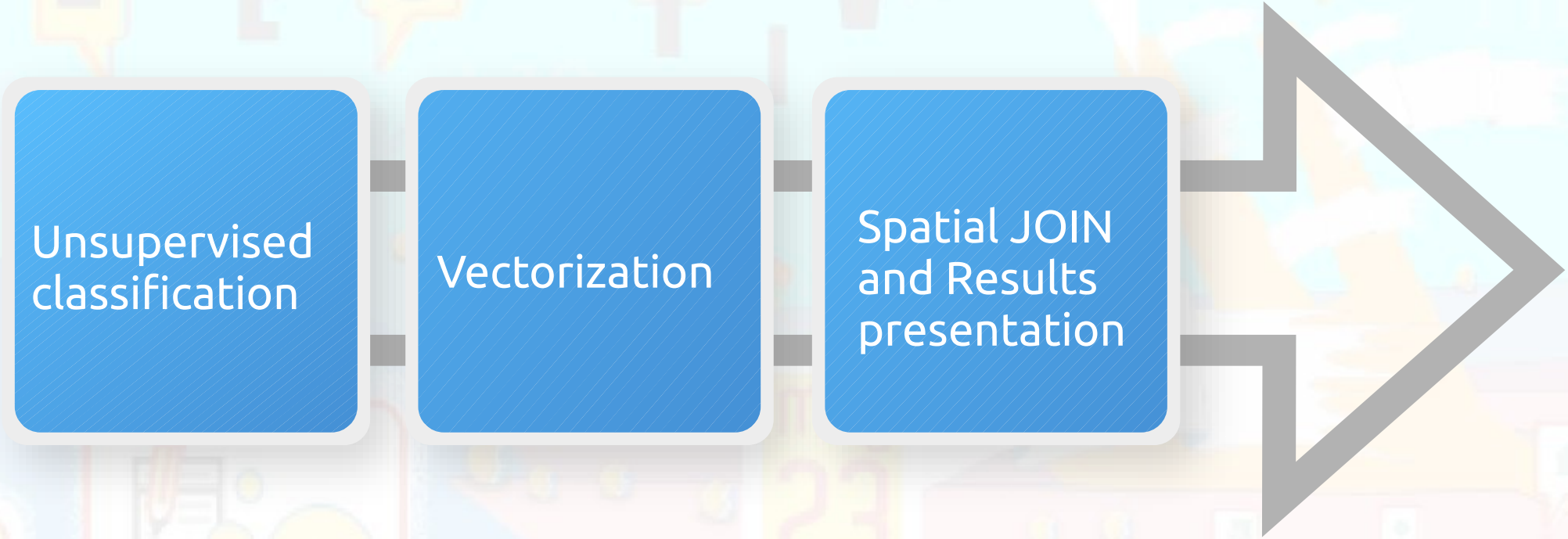


gvSIG in this study .. continued



How does this study help

- We are working with Local state government in conducting these studies to assess various ways of addressing the challenges
- This also helps in prioritizing areas which have high amounts of stress on water resources
  - Based on agricultural practices
  - Based on population growth

Further Improvements

- Create a DEM and correlate water body information with it to get aggregate water volumes
- Collaborate with local governments to suggest suitable places for minor irrigation structures
- Collaborate with local governments to suggest suitable crops to farming community