



INTRODUCTION to IWRM

Dr. Mary M. Matthews, Ph.D.
Chief Technical Advisor and
Project Coordinator





Overview



- Water situation in the Caucasus?
- Baseline?
- Trends facing water management?
- What is IWRM?
- Why IWRM in the Caucasus?



What is the water situation in the Caucasus?

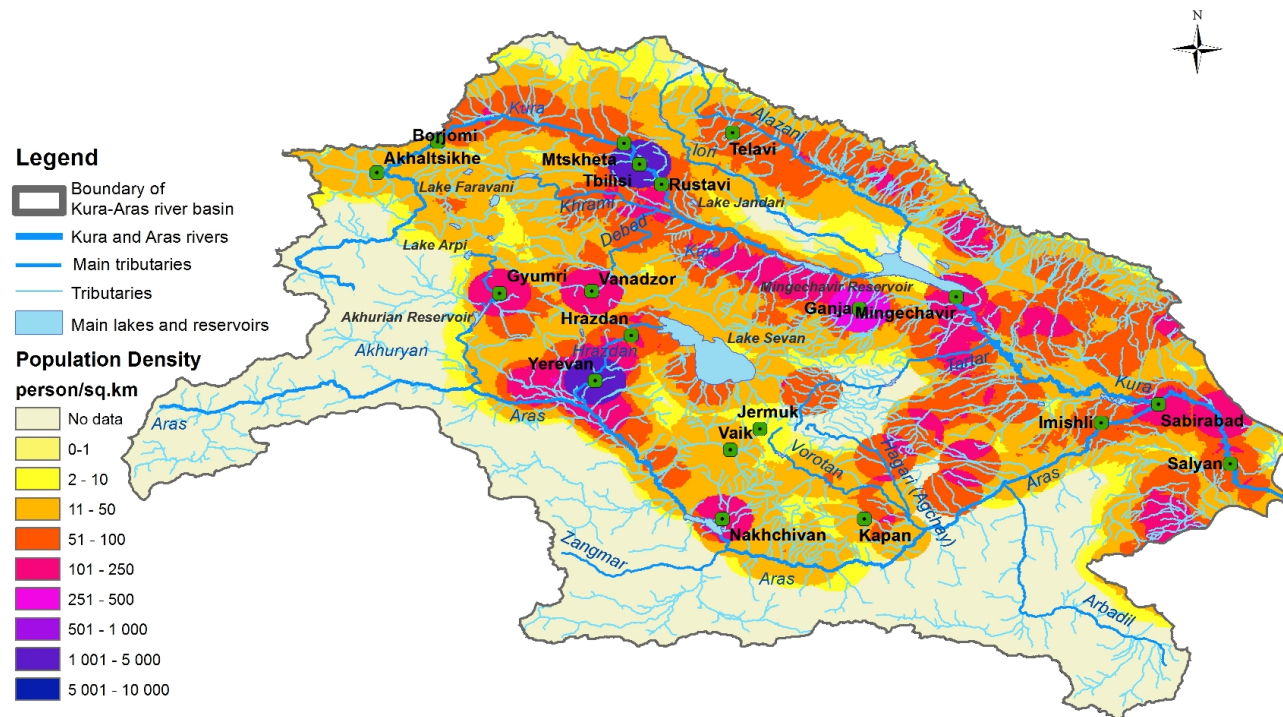






What is our baseline scenario?

Population Density Map of the Kura-Aras Basin

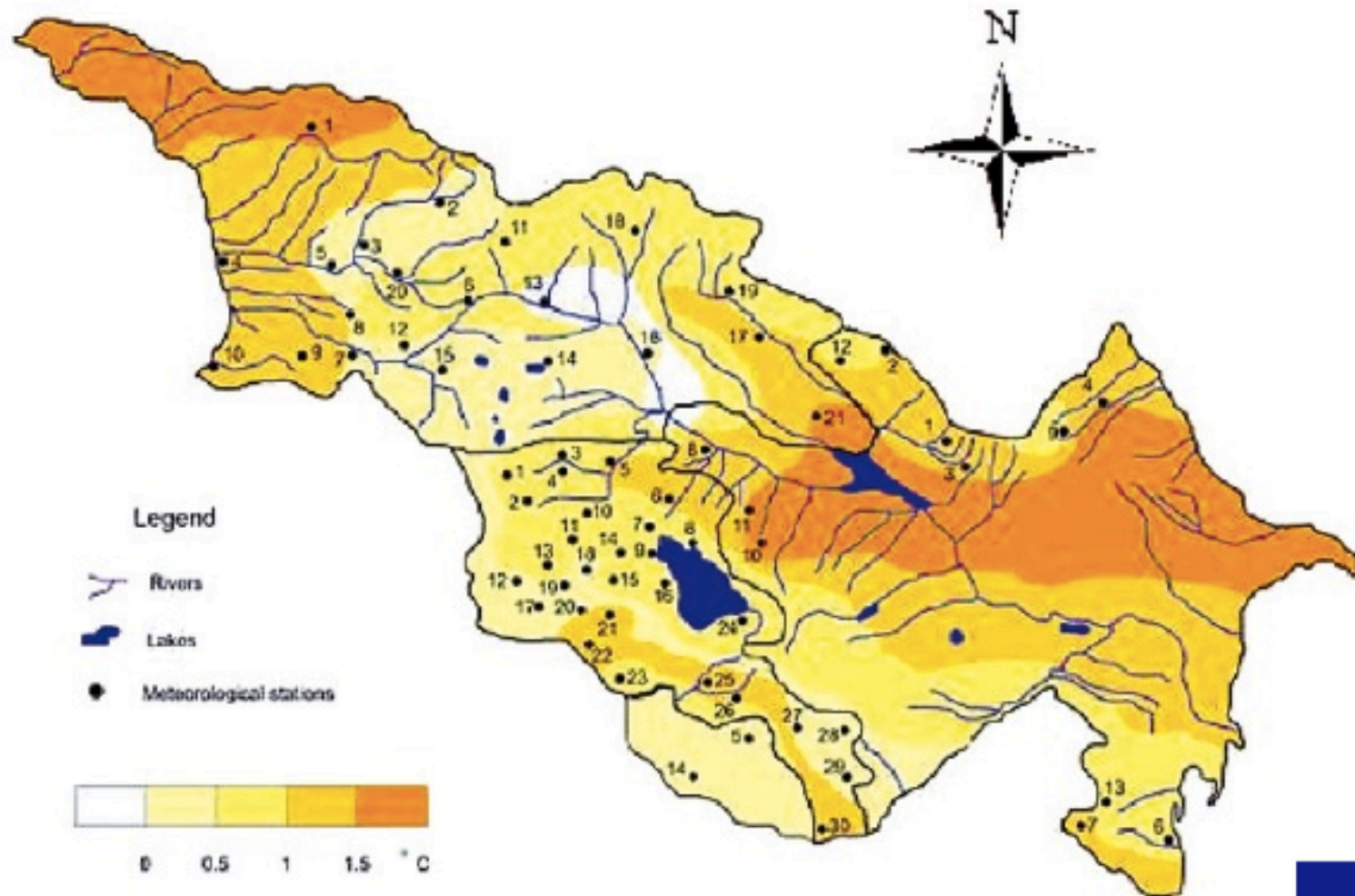


Prepared by: UNDP/GEF Project
on Reducing Transboundary Degradation
in the Kura-Aras River Basin
March 2012

0 35 70 140 210 280 Km
Geographic Coordinate System: GCS_WGS_1984
Datum: D_WGS_1984
Prime Meridian: Greenwich

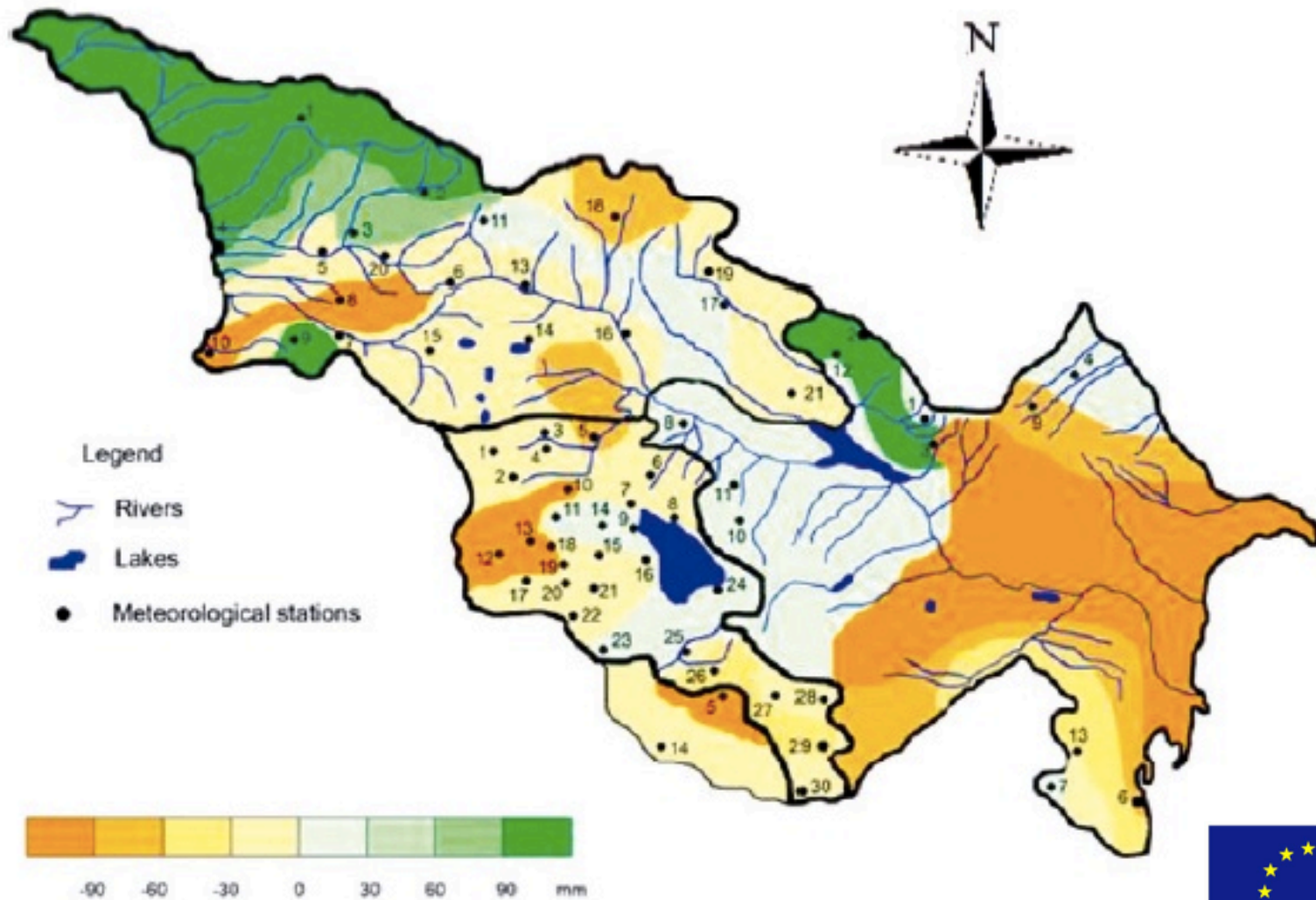


Climate change: Mean Annual Temperature 1960-1990



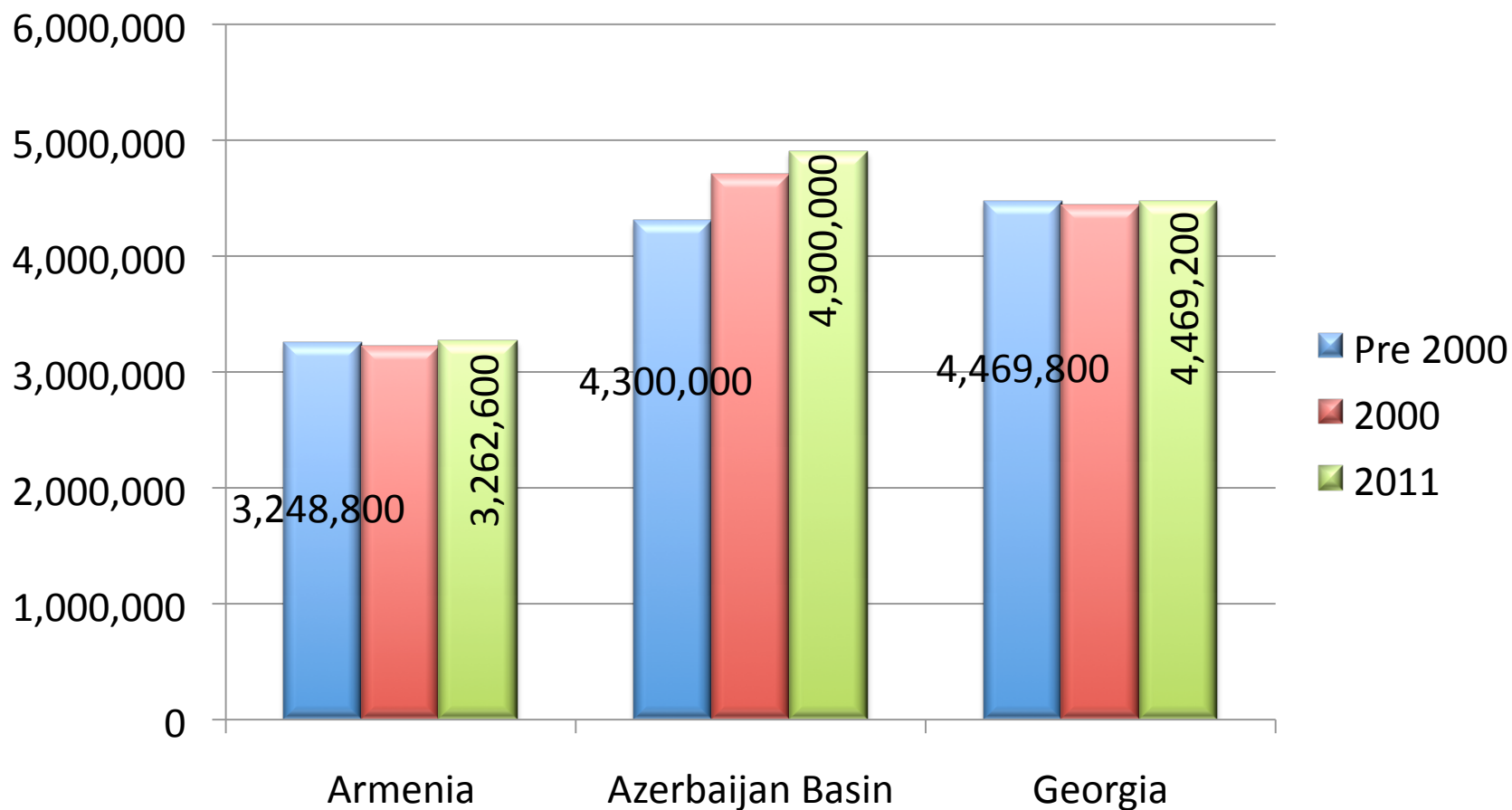


Climate change: Mean Annual Precipitation 1960-1990



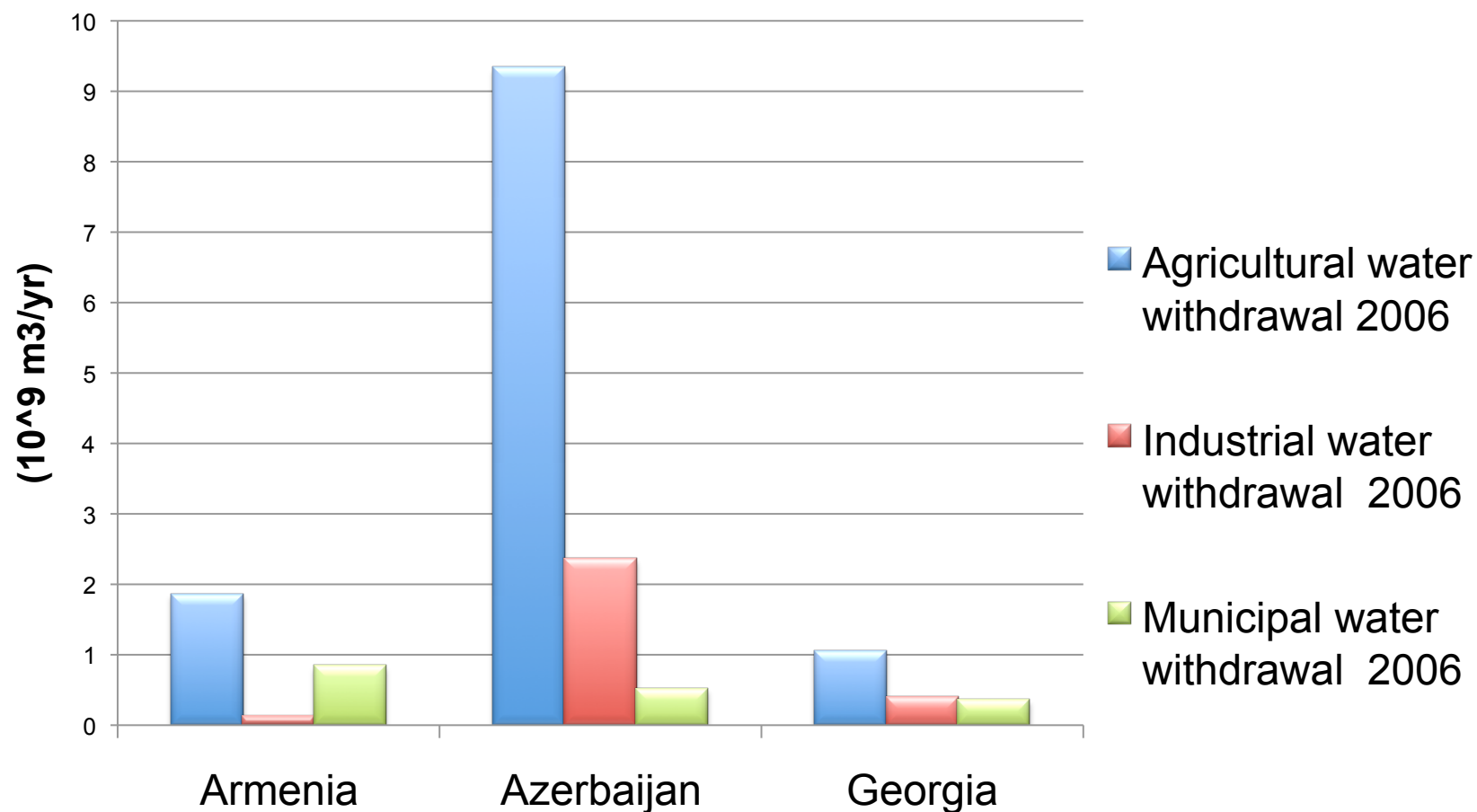


Population growth in the Basin





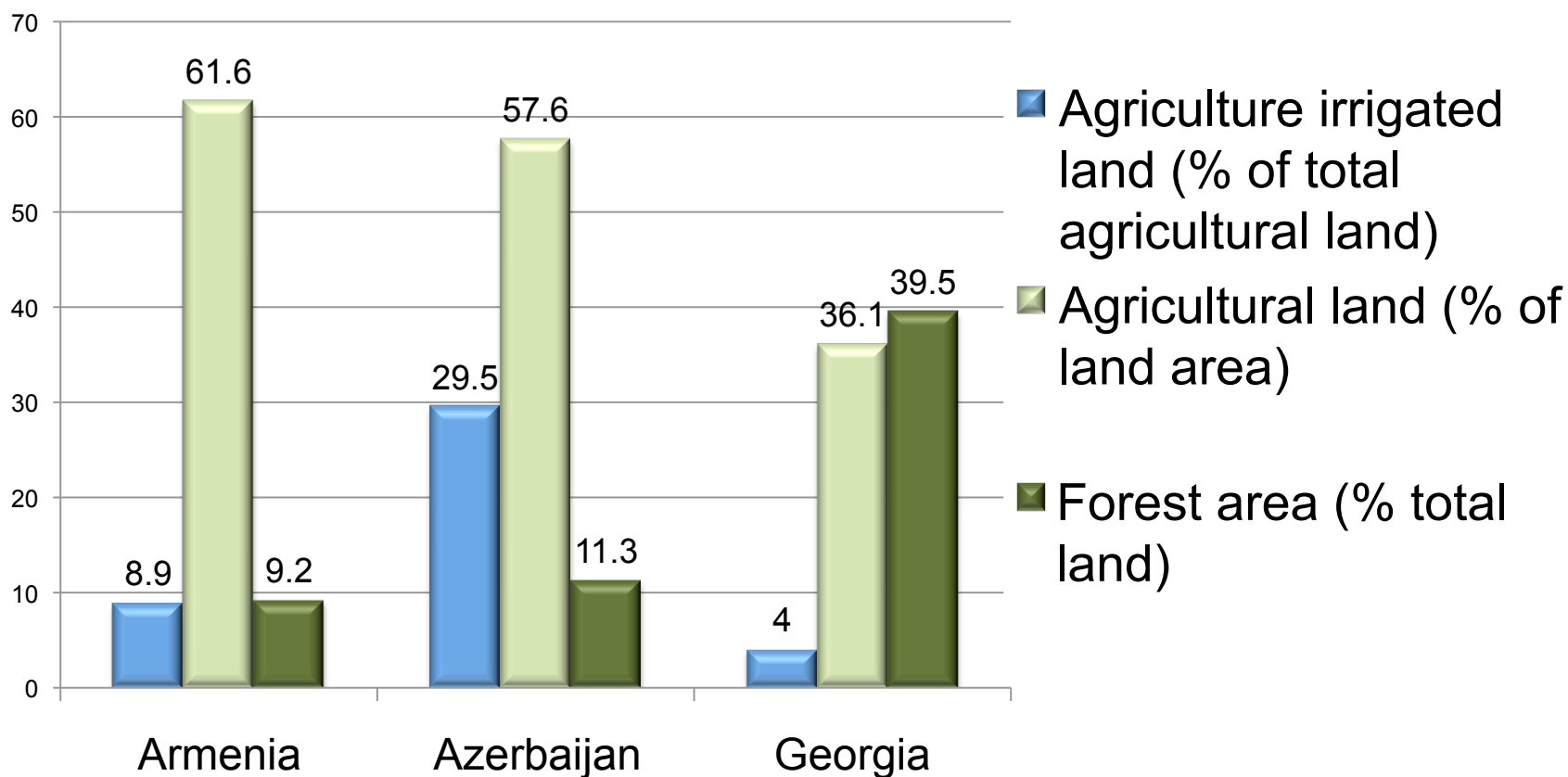
Water Withdrawals by Sector





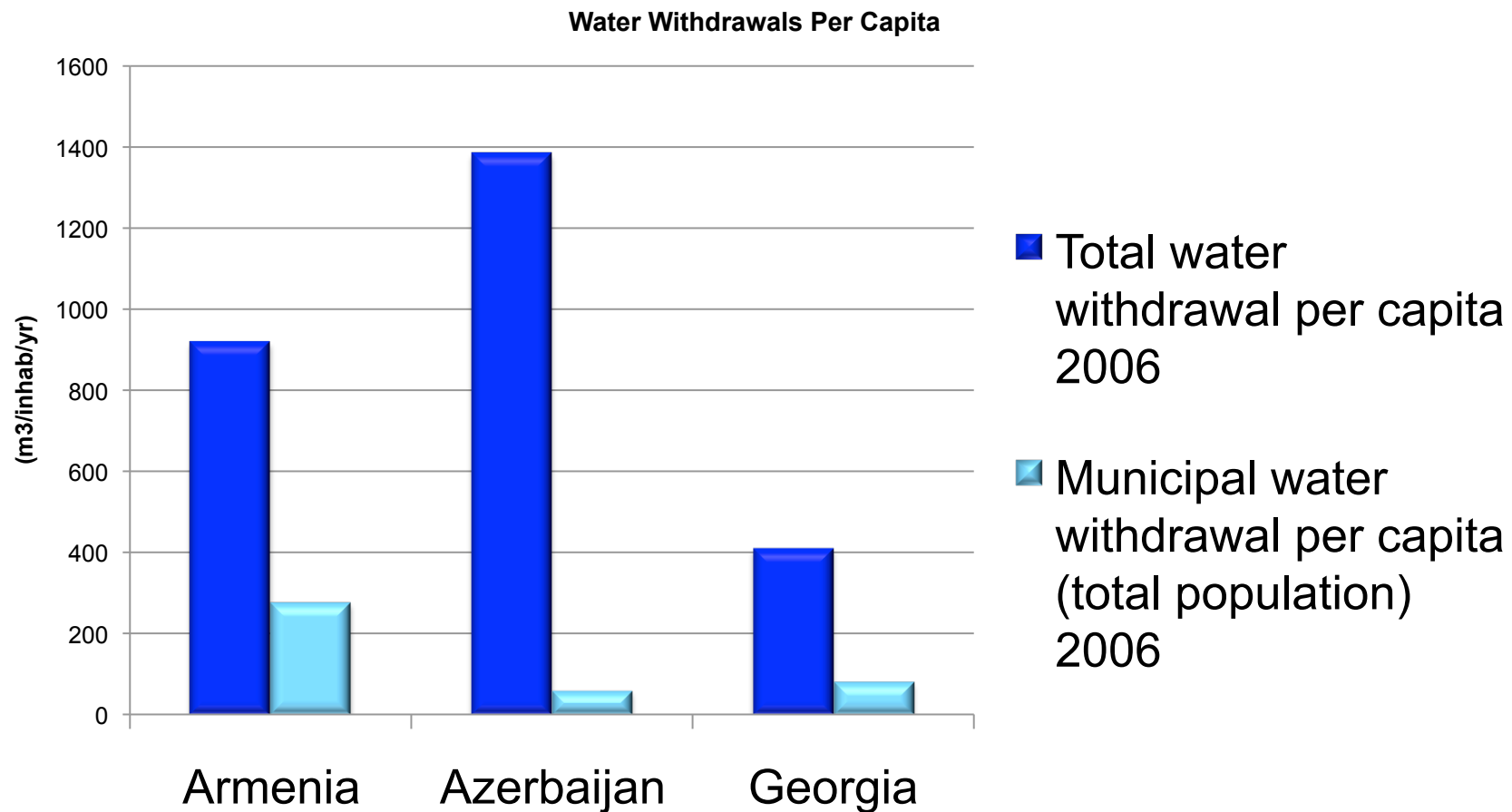
Agriculture

Land Use Patterns





Municipal Water





Additional Plans:



Empowered lives.
Resilient nations.

get





WHAT CAN WE DO?



Resources
Management



What is IWRM?

GWP defines IWRM as:

“a process of coordinated development and management of water, land and related resources, in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems.”

It is about INTEGRATION



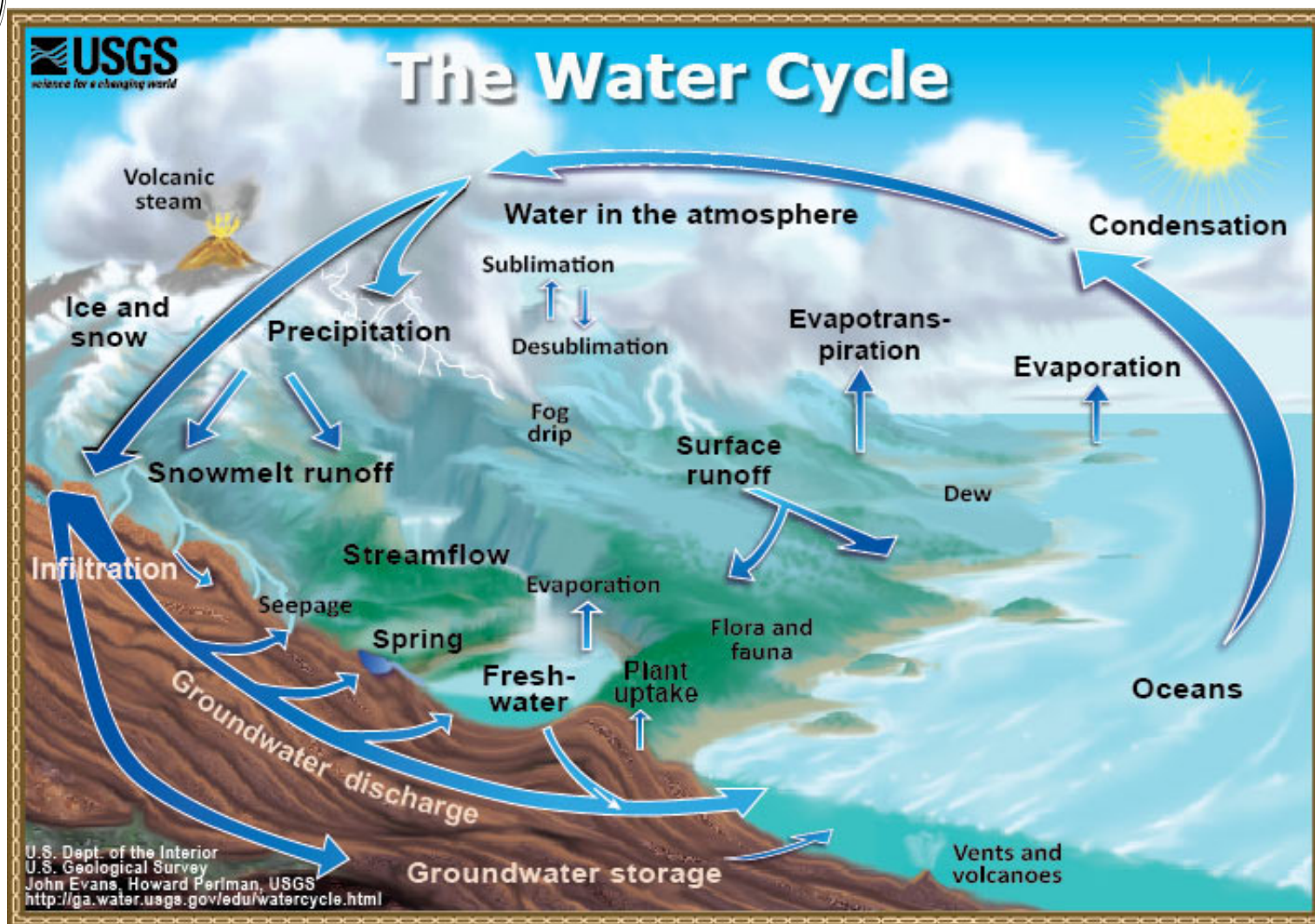


land and water management

•



surface water, groundwater





water quantity and water quality





people and the environment





water users and sectors



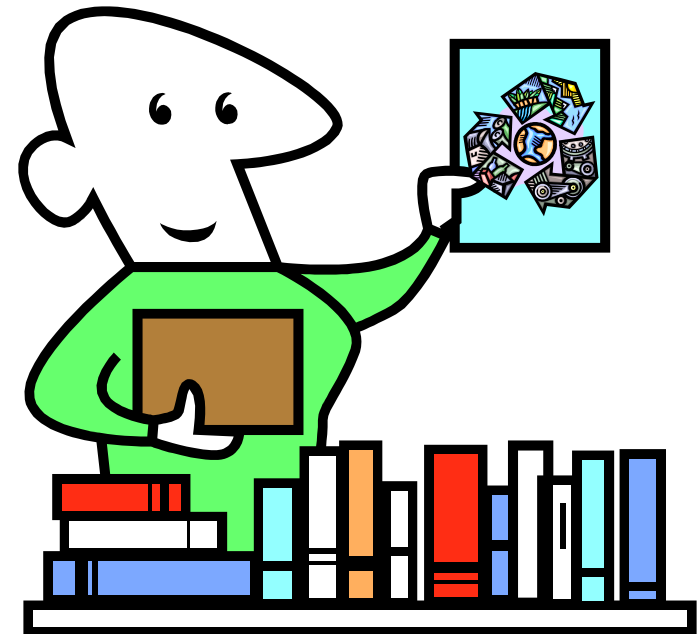


professional water managers and water users





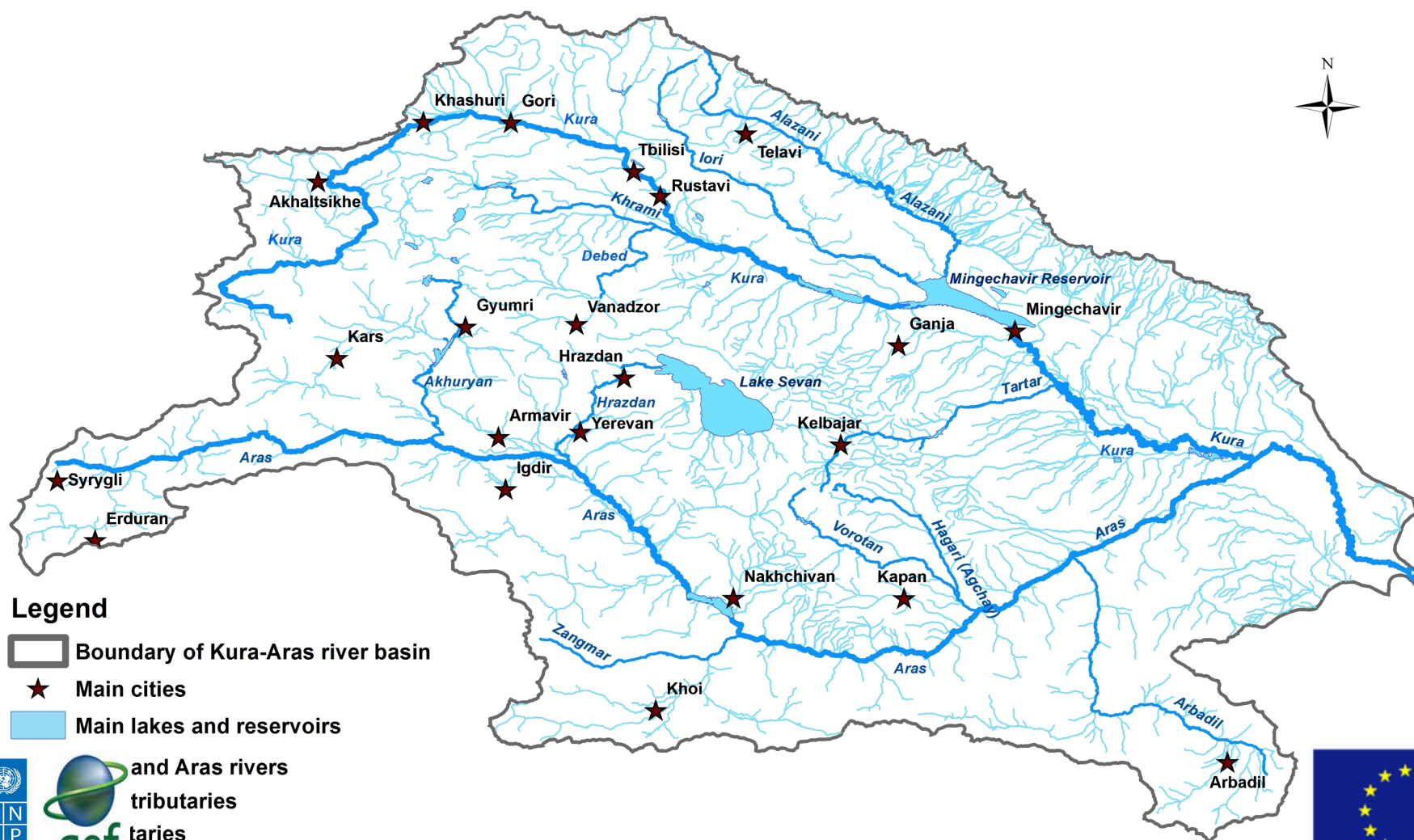
government, non-government and civil society





national goals with transboundary and regional goals

Hydrology of the Kura-Aras River Basin



Empowered lives.
Resilient nations.



and Aras rivers
tributaries
taries



Prepared by: UNDP/GEF Project
on Reducing Transboundary Degradation

0 25 50 100 150 200 250 Km

Geographic Coordinate System: GCS_WGS_1984



Integration of monitoring, management, protection





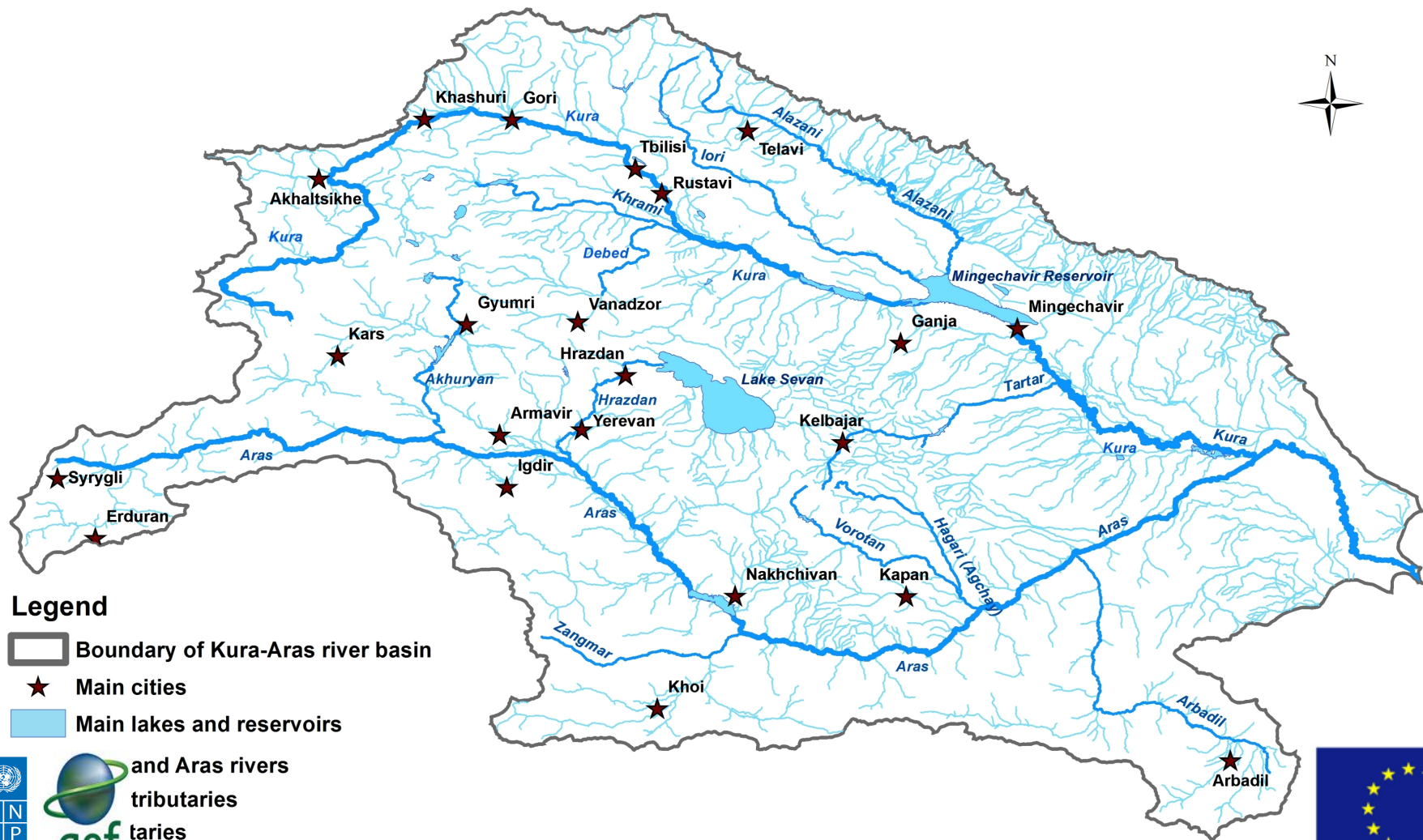
Six Principles of IWRM:





1. The river basin is the correct administrative unit for managing water.

Hydrology of the Kura-Aras River Basin





2. Water resources and the land which forms the river basin area must be integrated.



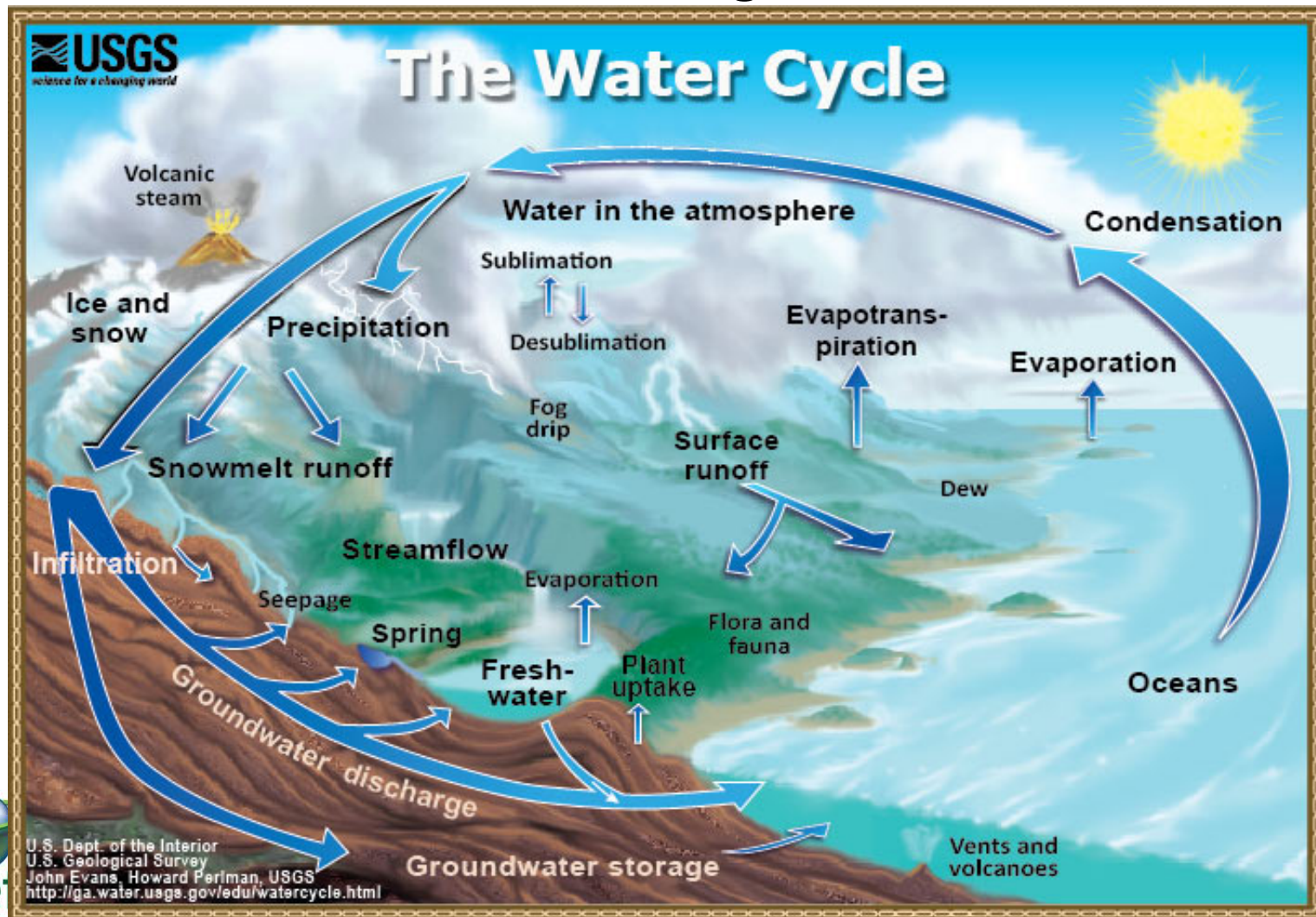


3. Social, economic and environmental factors must be integrated within water resources planning and management.



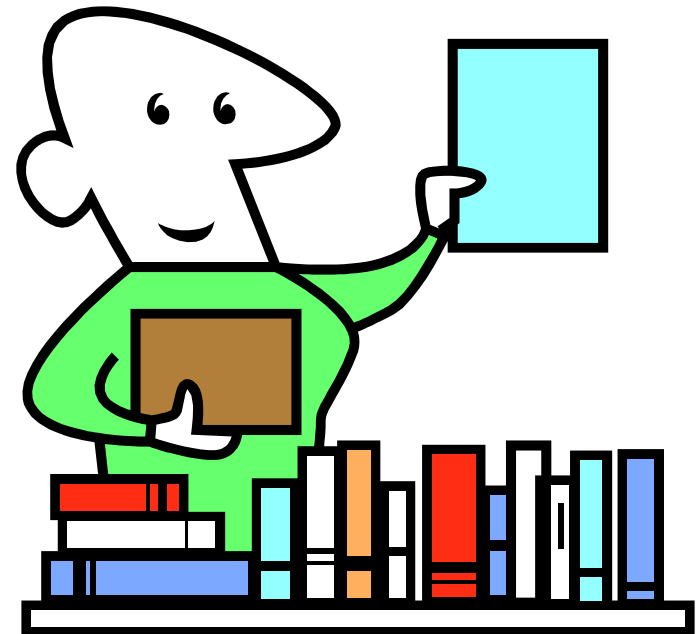
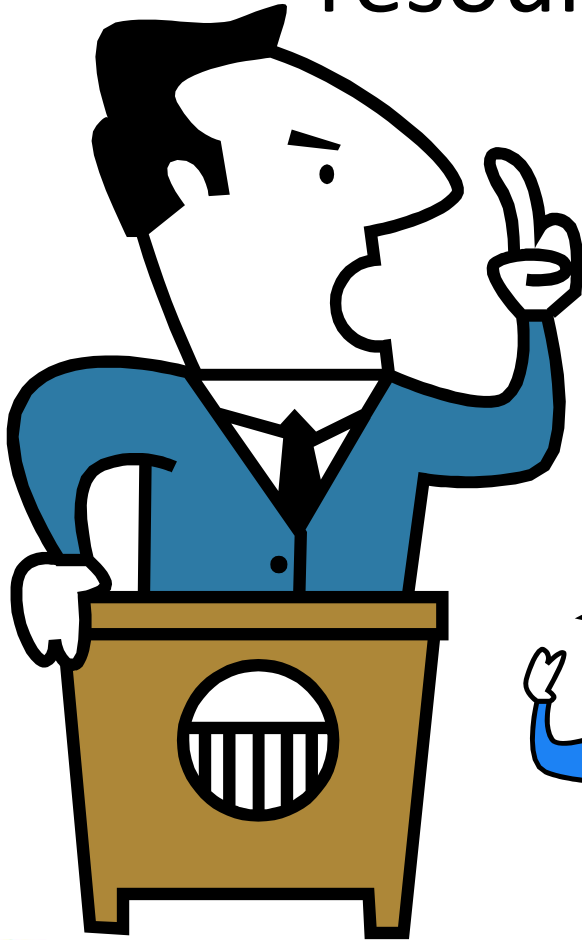


4. Surface water and groundwater and the ecosystems through which they flow must be integrated within water resources planning and management.





5. Public participation is necessary for effective water resources decision making.



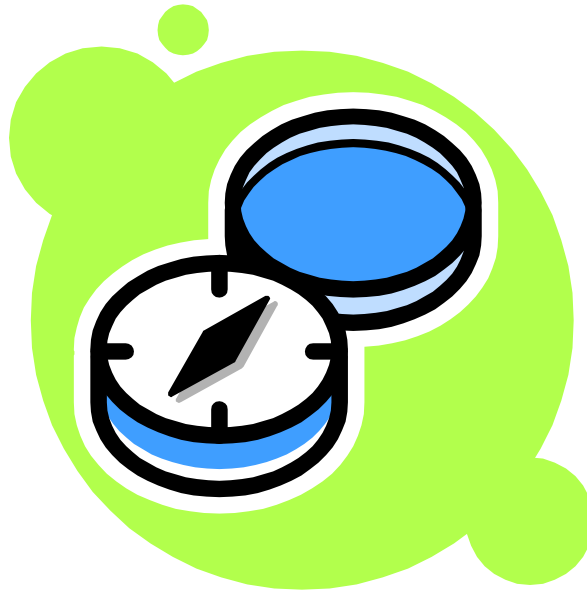


6. Transparency and accountability in water management decision making are necessary features of sound water resources planning and management.



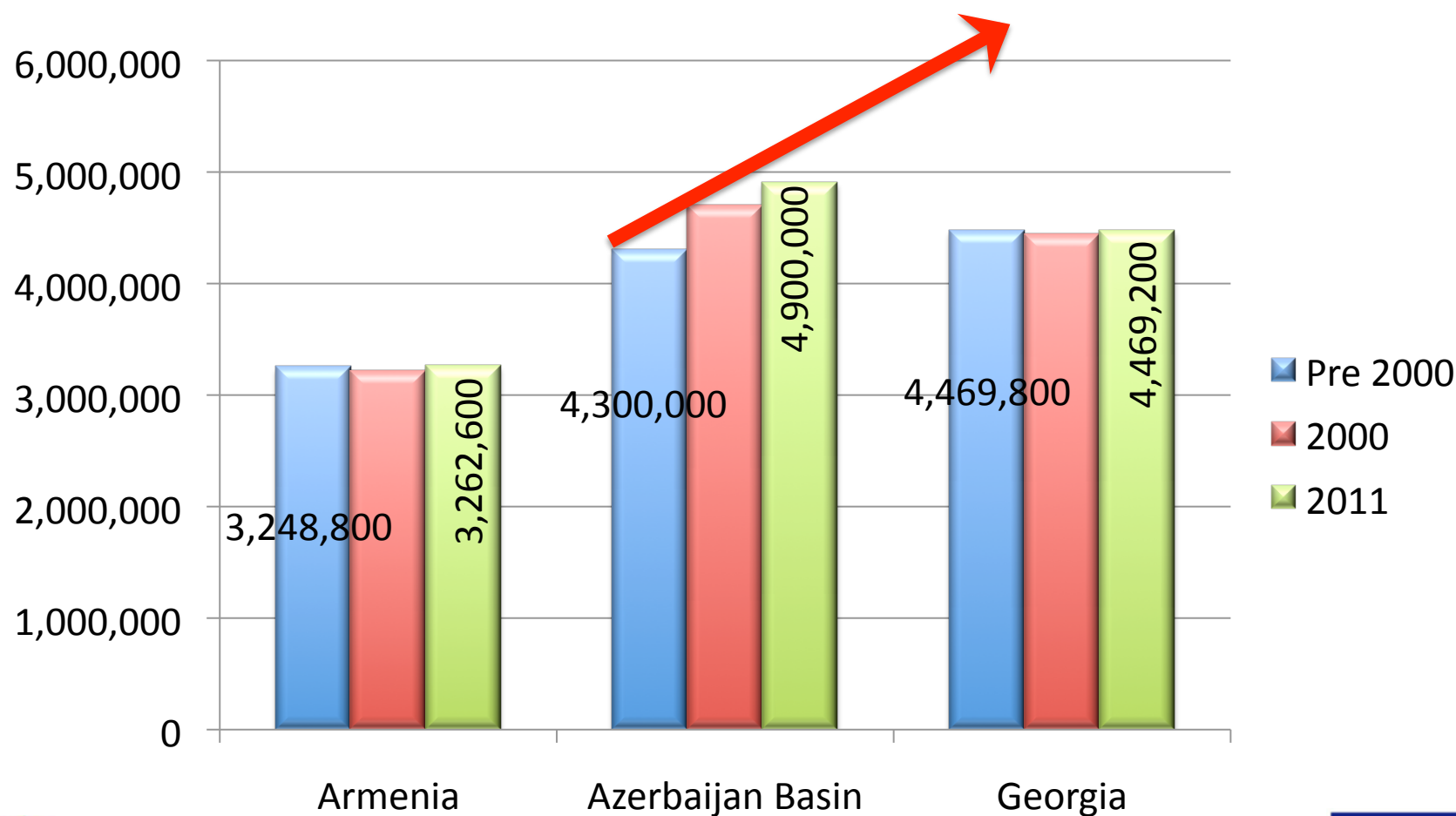


IWRM in the Caucasus

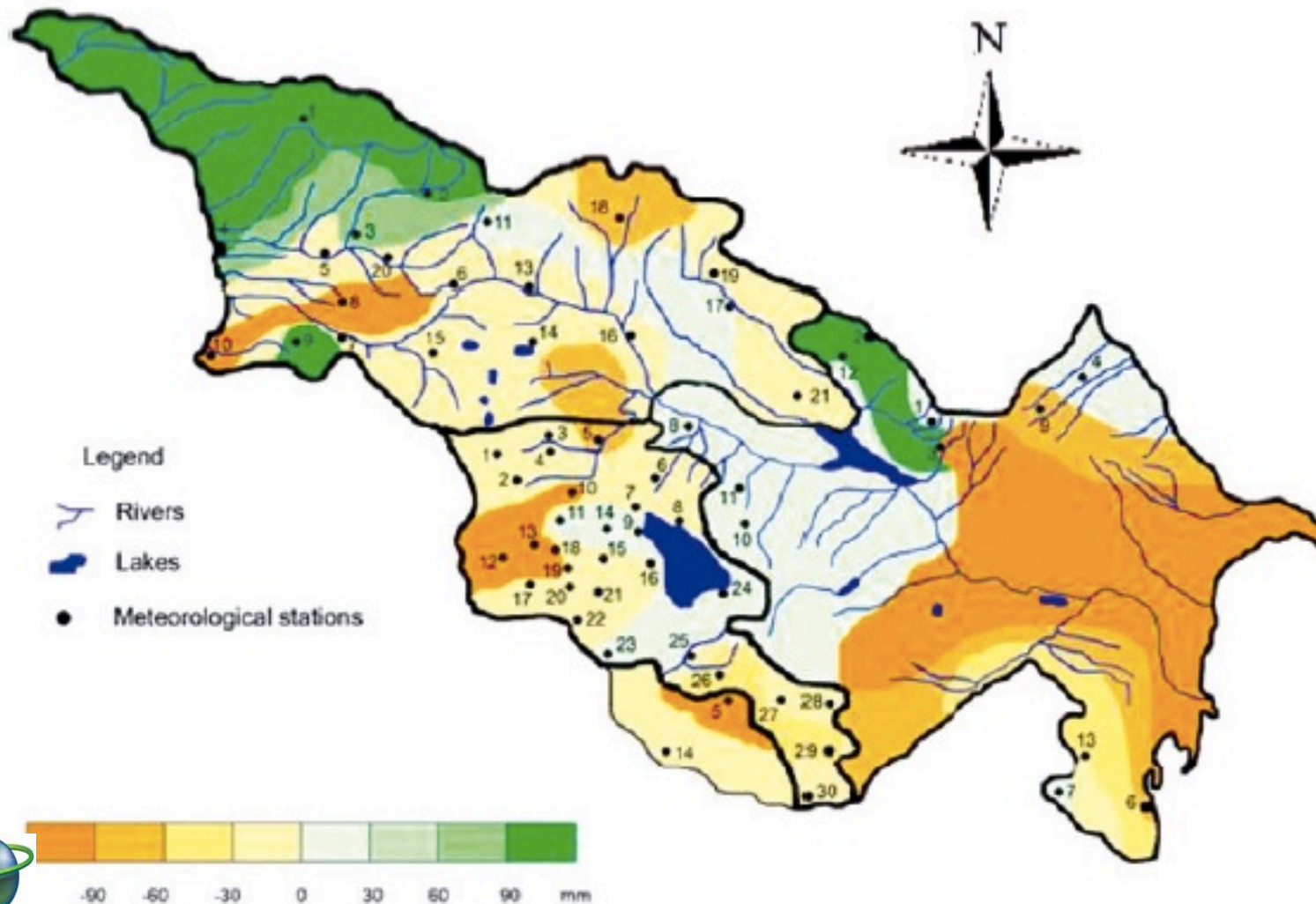




Caucasus without IWRM

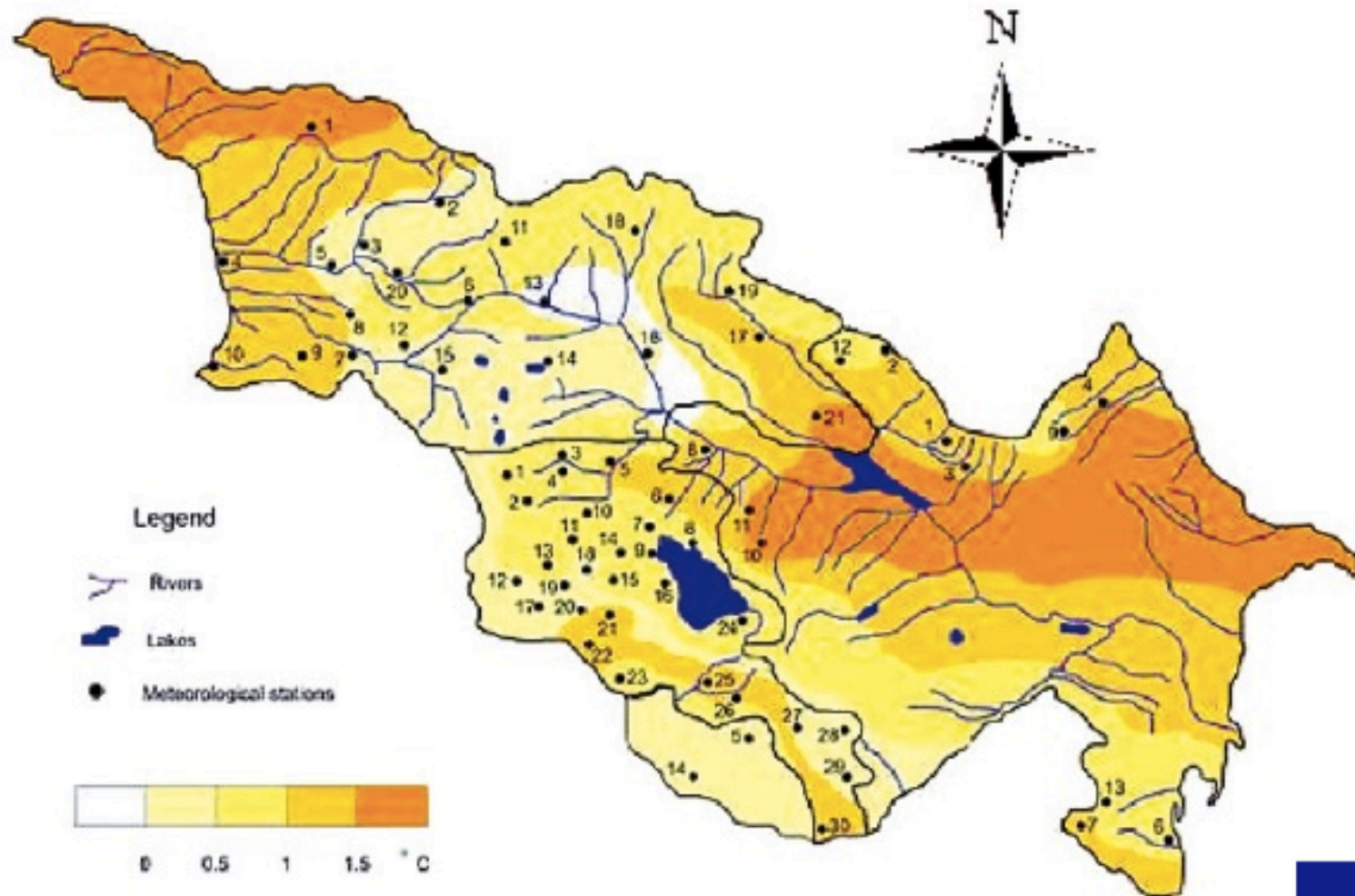


Caucasus without IWRM





Caucasus without IWRM





Caucasus without IWRM

Population Density Map of the Kura-Aras Basin

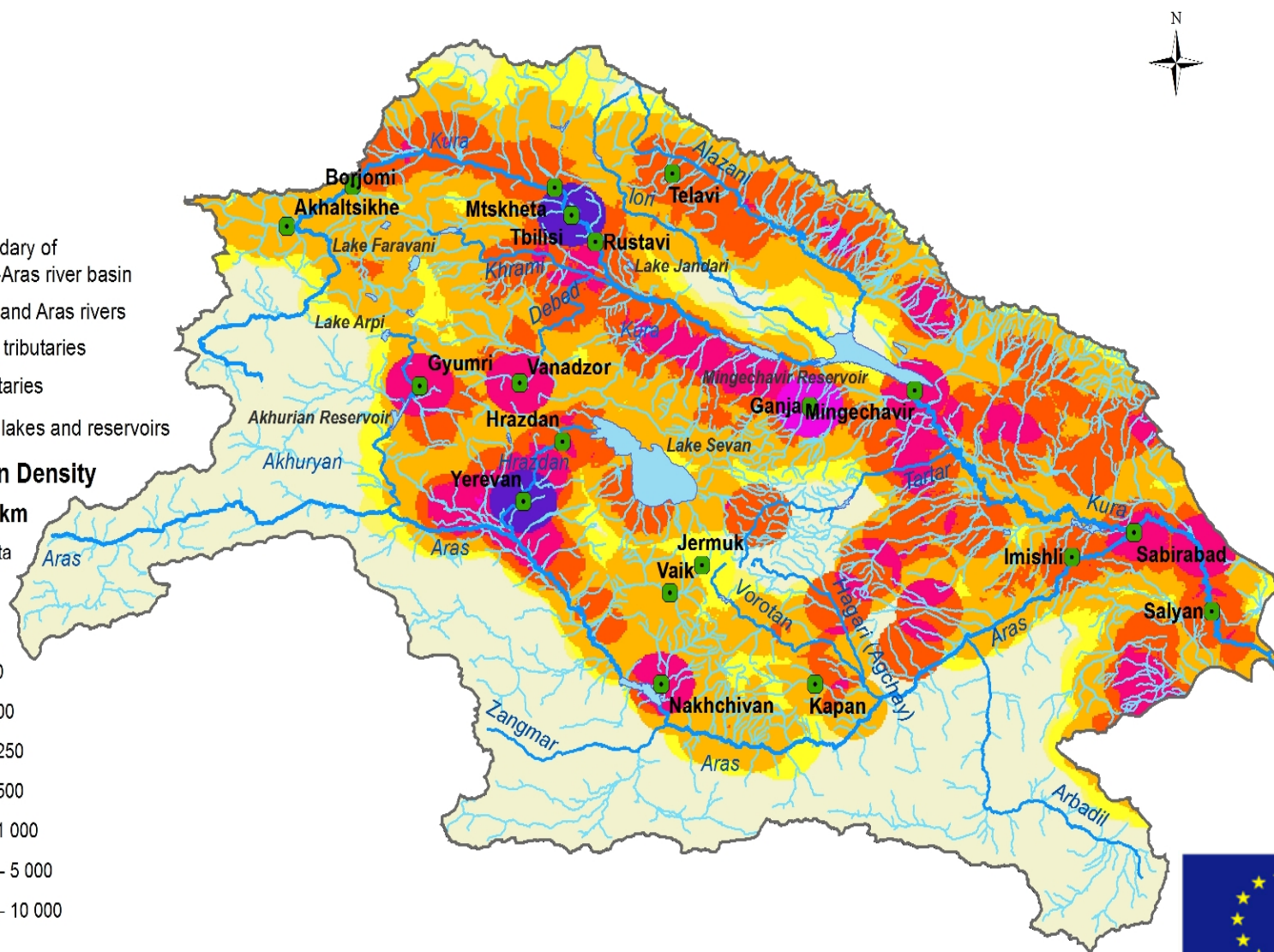
Legend

- Boundary of Kura-Aras river basin
- Kura and Aras rivers
- Main tributaries
- Tributaries
- Main lakes and reservoirs

Population Density

person/sq.km

- No data
- 0-1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 250
- 251 - 500
- 501 - 1 000
- 1 001 - 5 000
- 5 001 - 10 000



Empowered lives.
Resilient nations.



Prepared by: UNDP/GEF Project
on Reducing Transboundary Degradation
in the Kura-Aras River Basin

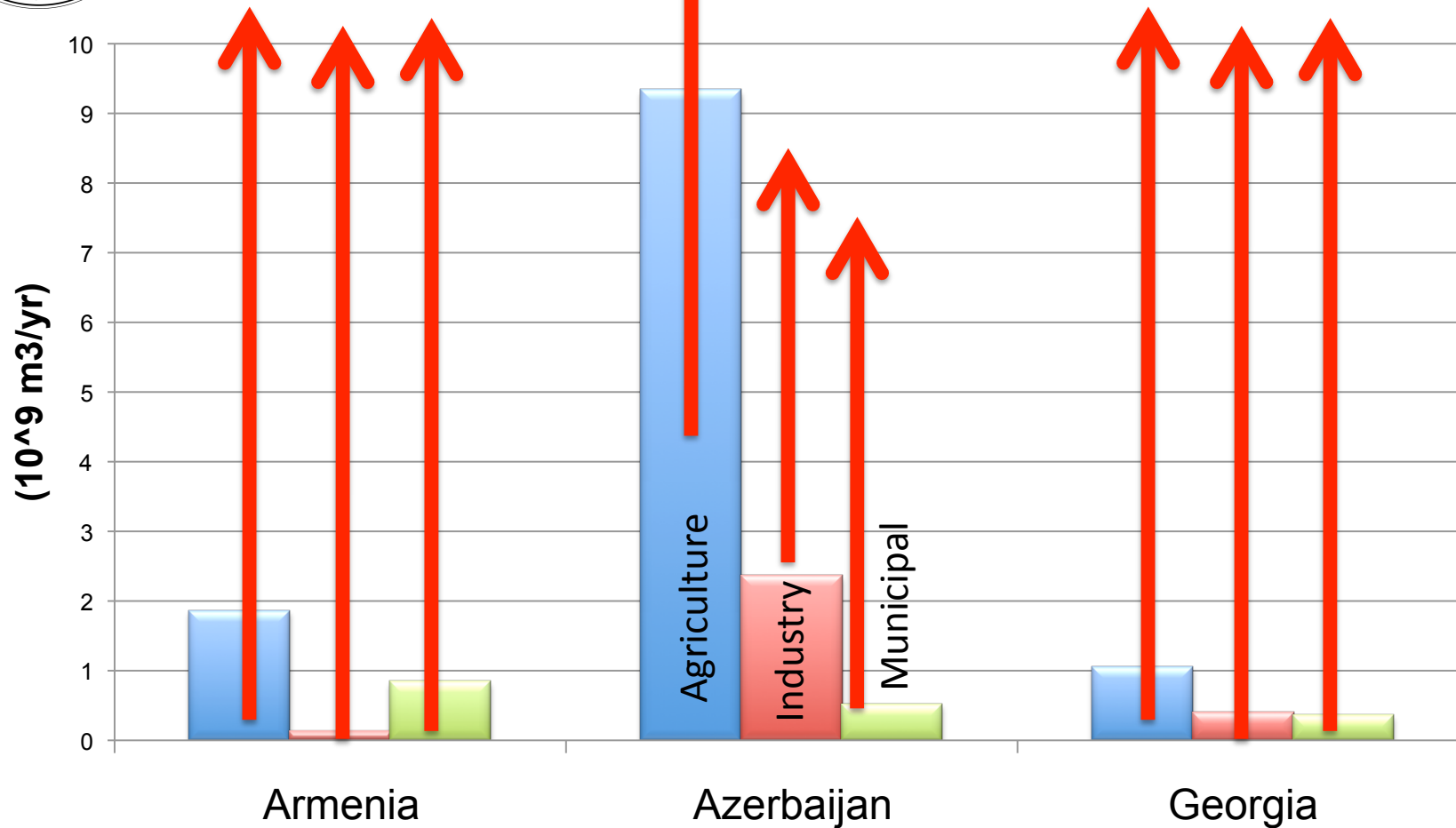
0 35 70 140 210 280 Km

Geographic Coordinate System: GCS_WGS_1984





Caucasus without IWRM





Caucasus without IWRM

Population Density Map of the Kura-Aras Basin

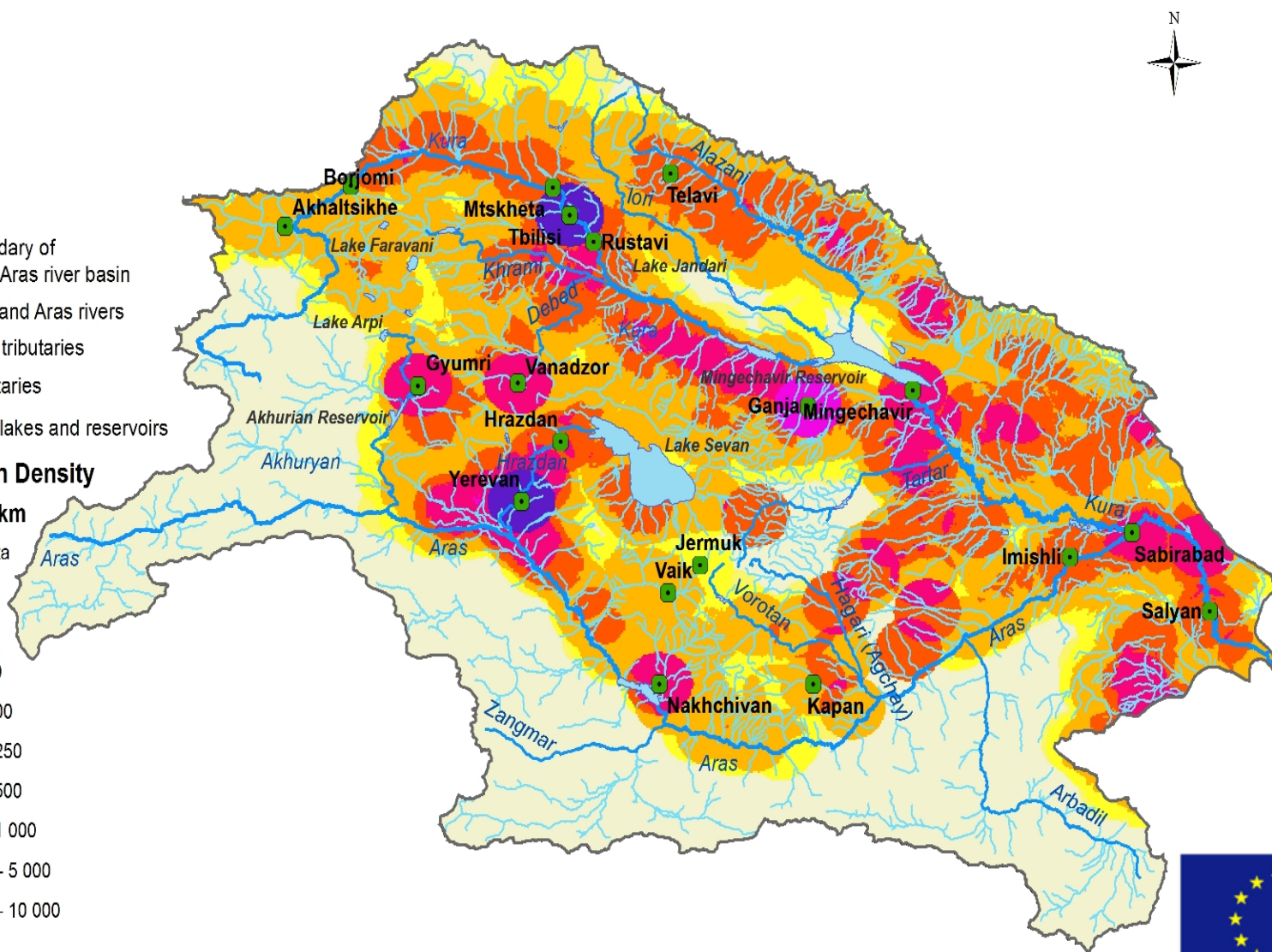
Legend

- Boundary of Kura-Aras river basin
- Kura and Aras rivers
- Main tributaries
- Tributaries
- Main lakes and reservoirs

Population Density

person/sq.km

- No data
- 0-1
- 2 - 10
- 11 - 50
- 51 - 100
- 101 - 250
- 251 - 500
- 501 - 1 000
- 1 001 - 5 000
- 5 001 - 10 000



Empowered lives.
Resilient nations.



Prepared by: UNDP/GEF Project
on Reducing Transboundary Degradation
in the Kura-Aras River Basin

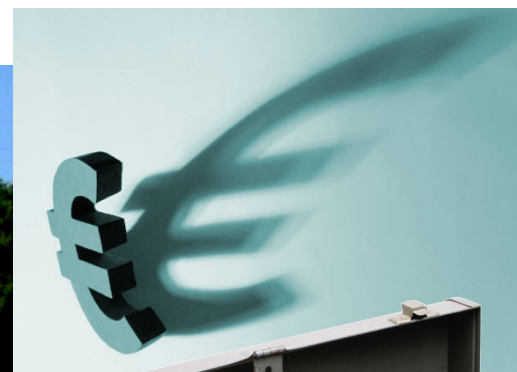
0 35 70 140 210 280 Km

Geographic Coordinate System: GCS_WGS_1984





Caucasus with IWRM





Getting there from here



Next:
What
IWRM looks
like





Thank you!

Questions Please

Dr. Mary M. Matthews, Ph.D.
Chief Technical Advisor and
Project Coordinator

