# Water-Food-Energy-Ecosystems Nexus in transboundary river basins

## The Alazani/Ganykh pilot project

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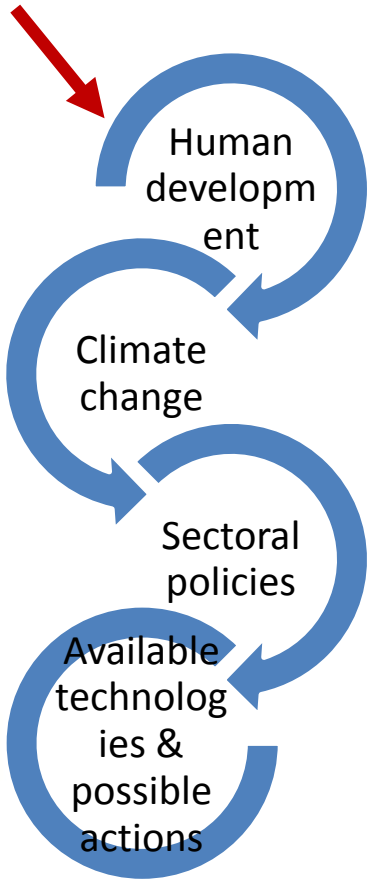
# Why a Water-Food-Energy-Ecosystems Nexus in transboundary river basins?

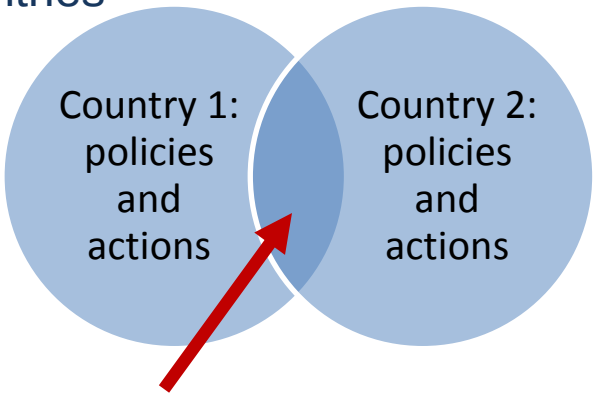
Water-Food-Energy-Ecosystems Nexus




Need to integrate/coordinate:

1. A better understanding of inter-sector and inter-resources dynamics allows accounting for impacts & more effective resource management

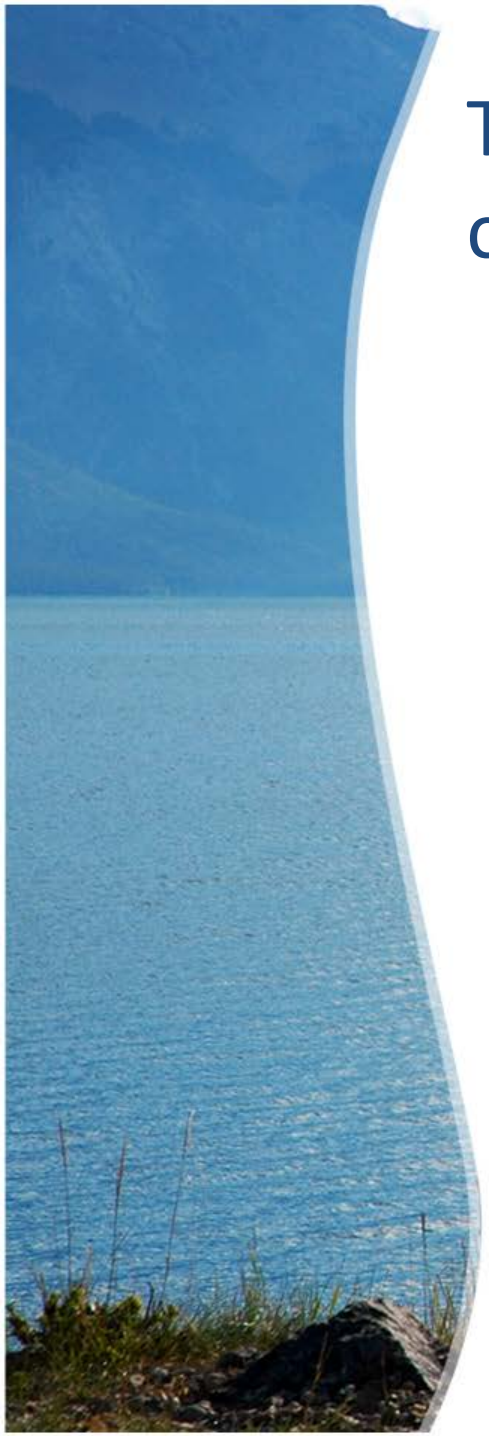
2. To make policies and actions more coherent across sectors and countries




Communication, collaboration and joint action!

# Previous Nexus case studies have shown that:

- An increased pressure on natural resources, climate change and various socio-economic trends call for systemic thinking and for a better understanding of intersectoral dynamics
- Sectoral policies have impacts on other sectors (not only water-related sectors!)
- Outcomes of a planned policy might not be as expected due to inter-sectoral effects
- Potential economic and environmental  benefit can be achieved by inIntegrated planning

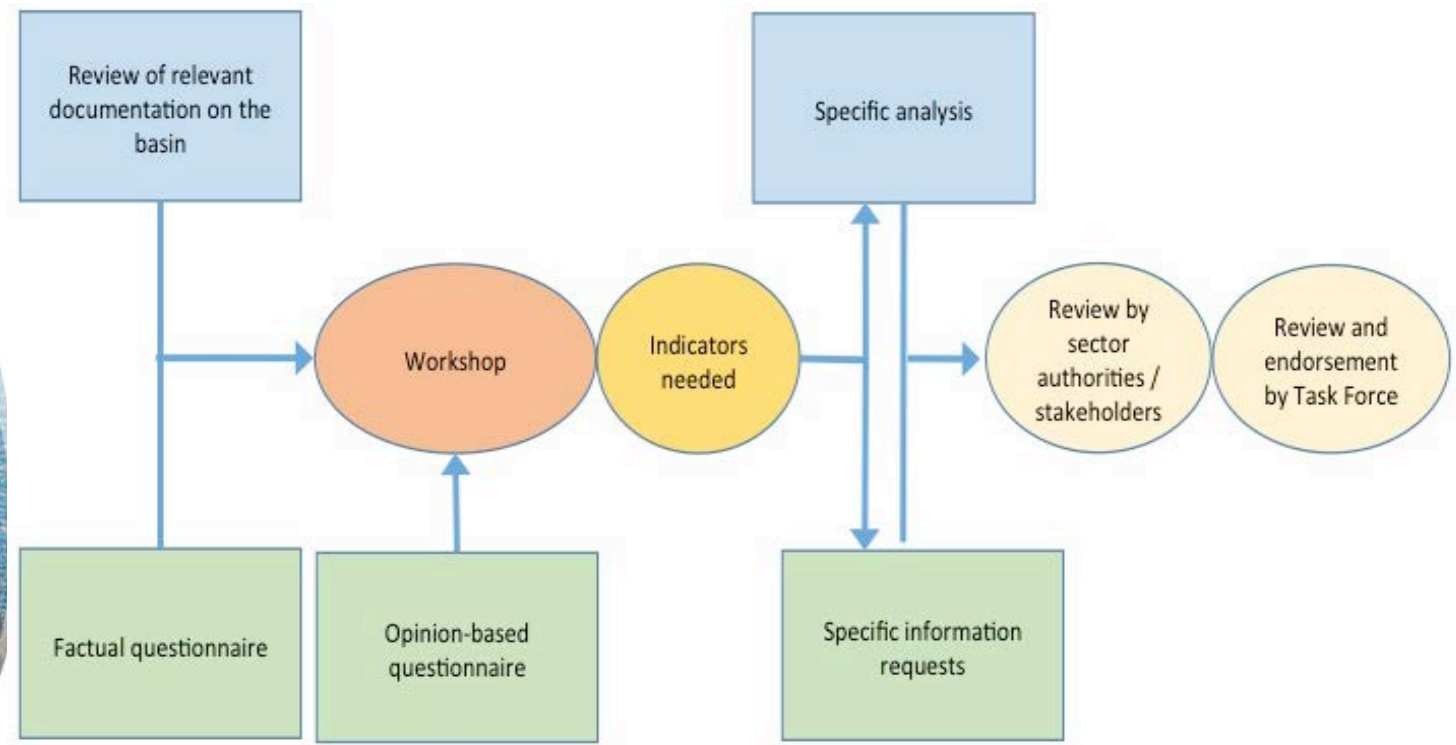


# The Nexus under the UNECE Water convention in selected basins

- Part of the Convention's Work Programme 2013-2015
- Work overseen and guided by the Task Force on the Water-Food-Energy-Ecosystems Nexus
- Some 6-8 basins to be assessed – pan-Europe, Africa, Asia; different nexus settings, climate, resource scarcity etc.
- **Pilot basin: Alazani/Ganikh shared by Georgia and Azerbaijan**
- Key partners: Finland (lead)/Finnish Environment Institute SYKE, FAO, Royal Institute of Technology (Stockholm)
- Methodology will be developed, piloted & going through stakeholder consultation
- Basin assessments January 2014 - April 2015; report August 2015

# Some Features of the process and the Methodological Approach

- **Participatory processes: Joint identification of the pressing inter-sectoral issues and potential solutions with national sectoral administrations and basin stakeholders (workshop)**
- **Dissemination of a «diagnostic questionaire»**
- **Comparisons using available statistics data and indicators**



# Diagnostic Phase

## some examples of indicators and their potential interlinkages

| WATER | FOOD & LAND USE | ENERGY | ECOSYSTEMS | CLIMATE |
|---|---|---|---|---|
| - Water withdrawals?<br>- Share of surface and groundwater use?<br>- Sectoral water demands (agriculture, energy, water supply)<br>- …. | Food self-sufficiency?<br>- Agricultural efficiency (water demand?)<br>- Fertilizer and pumping requirements?<br>- Biofuel policies?<br>…. | Water footprint of energy technologies?<br>- Energy mix<br>- Energy self-sufficiency? Energy demand for agriculture?<br>- …. | - Protected areas and vulnerable zones?<br>- Biodiversity hotspots<br>- Endangered species?<br>- Ecosystem services affected?<br>- …. | Likely affected by climate change?<br>- An increase / decrease in water availability?<br>- …. |

# Why is assessing inter-sectoral links the Alazani/Ganykh basin timely?

- Good collaboration between Georgia and Azerbaijan – good network
- Major support from UNDP-GEF Kura project: IWRM plans under development in Georgia and in Azerbaijan
- Need for economic development: inter-sectoral considerations timely to limit economic externalities & environmental impacts
- Existing effort to reduce environmental degradation from both sides
- Opportunities from new energy policy efforts and modernizing agriculture
- DraftAgreement on transboundary waters being negotiated (AZ-GE); multi-sector representation from the countries


BACKGROUND MAP OF THE KURA-ARAS RIVER BASIN
ARMANIA, AZERBAIJAN, GEORGIA
RUSSIAN FEDERATION
CASPIAN SEA
BLACK SEA
GEORGIA
TURKEY
ARMENIA
AZERBAIJAN
IRAN
TBILISI
YEREVAN
BAKU
Lake Sevan
Lake Ajinour
Kura
Aras
Legend
Capital
Main city
Water bodies
Local motor-road
Main motor-road
Rail road
Basin border
State border
Designed by: Natsa Megyvnetukhutsesi

# Nexus Workshop in Kachreti, Georgia

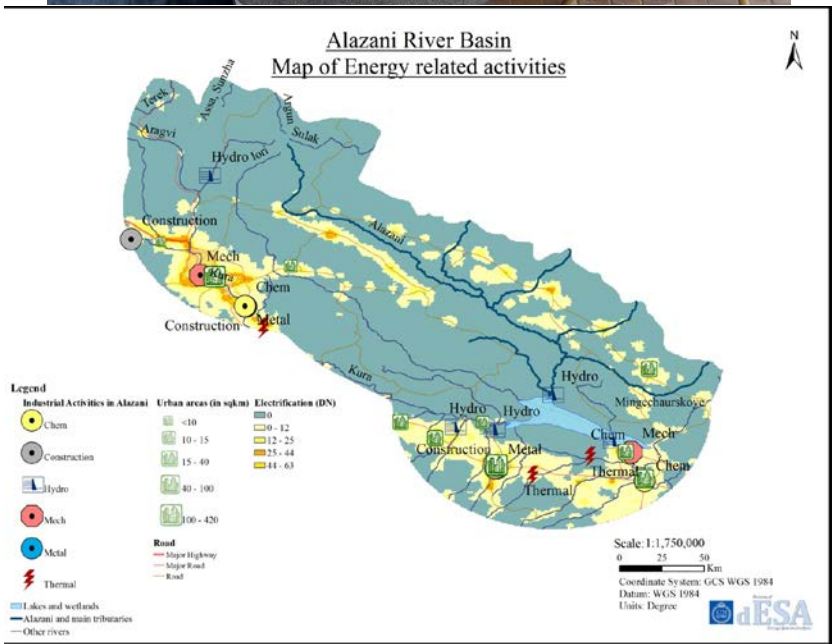
25-27 November 2013

- Organised in cooperation with:

UNDP/GEF project “Reducing Transboundary Degradation in the Kura Aras River Basin” and the Ministry of Environment Protection and Natural Resources of Georgia

- Among the participants:

ministries of environment, energy, agriculture, emergency situations, communities, agencies, companies, civil society



# Work in groups and in plenary discussions

1. Nexus issues specific to the basin highlighted

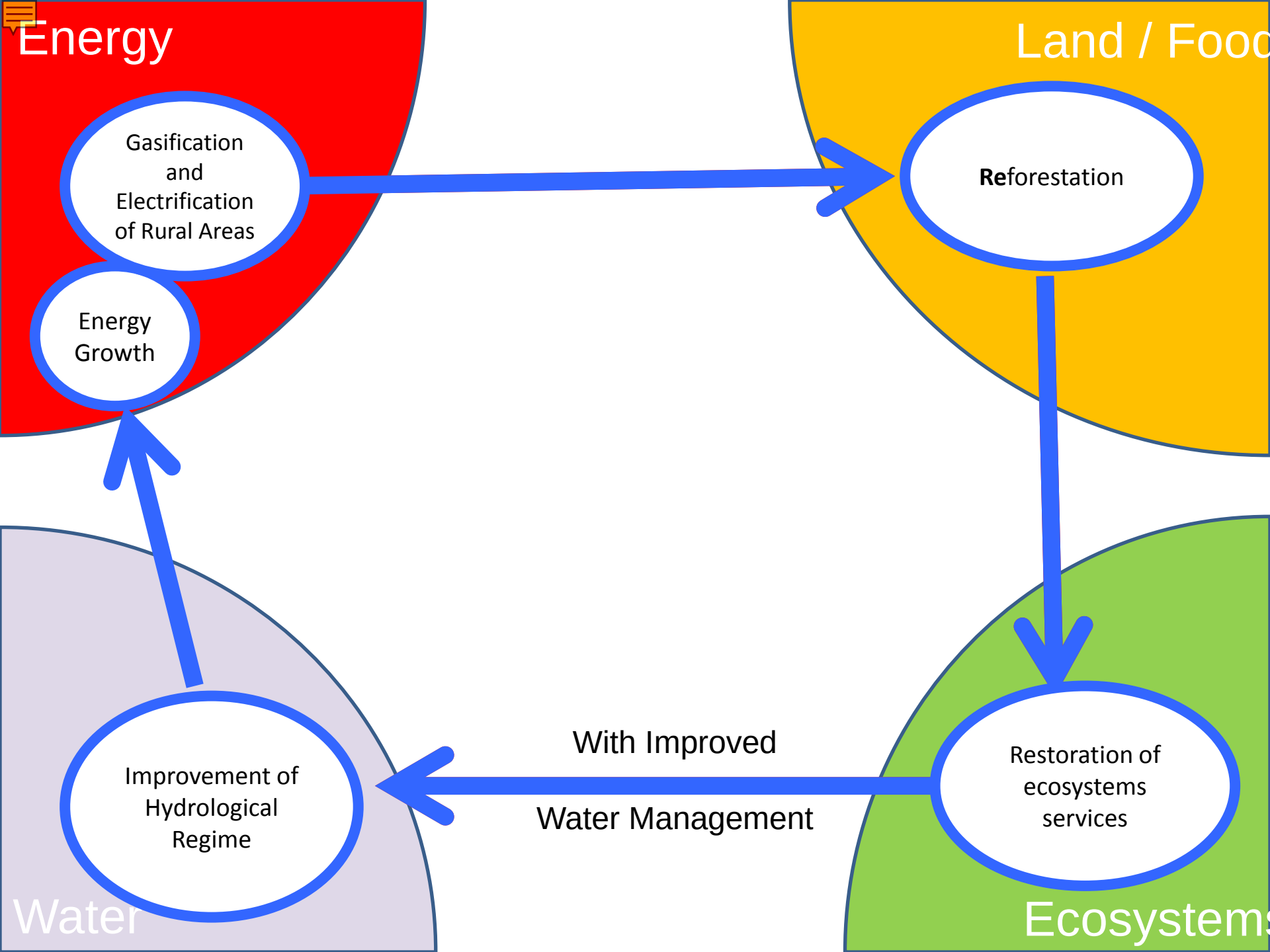
What the countries plan? Are the plans of the different sectors compatible? What do changing drivers & the climate outlook mean for the nexus? How to better reconcile the different uses?

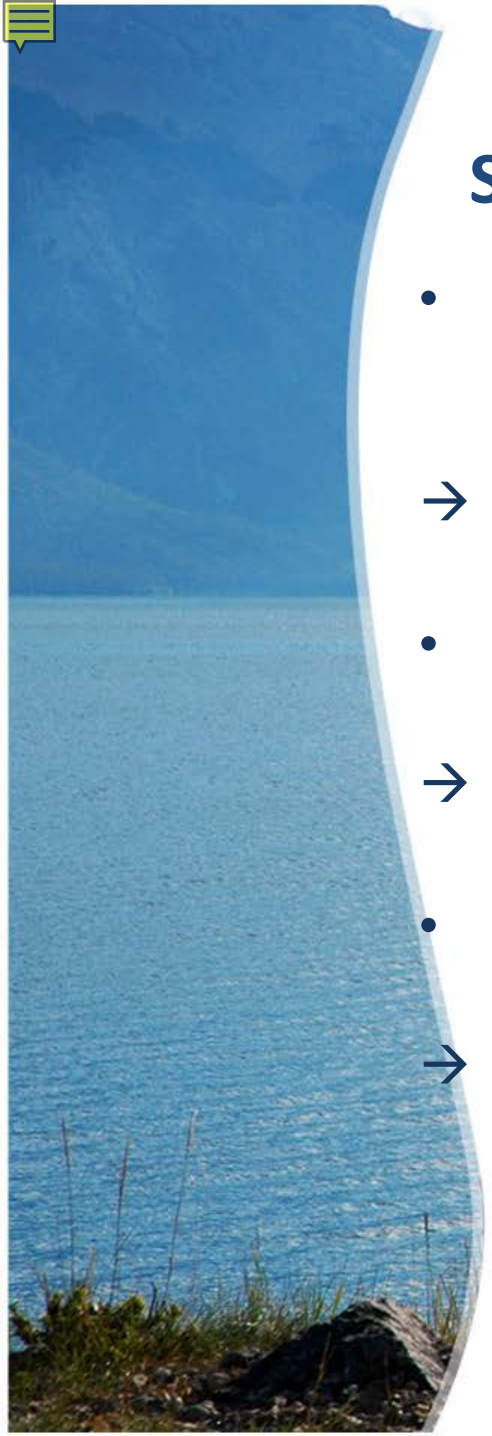
2. Sectoral and national plans shared

What opportunities there are to reduce negative intersectoral impacts and enhance synergy? Institutional arrangements at transboundary level conducive to intersectoral coordination?

3. Potential solutions identified

Changes to policies, new policies, management and measures practices, institutional arrangements, ways the infrastructure is operated ...


Energy
Gasification and Electrification of Rural Areas
Energy Growth
Land / Food
Reforestation
Ecosystems
Restoration of ecosystems services
With Improved
Water Management
Water
Improvement of Hydrological Regime



# Some inter-sectoral challenges in the Basin

- **Wood use** for household consumption contributes to deforestation aggravating land degradation and adds to sediment loads

→ ***Deforestation*** *plan, new energy policy (access to alternative fuel in rural areas)*

- Water **infrastructure** is aged and commonly in degraded condition ,

→ *Improved regulation of water use, pricing and other economic instruments and new investments in infrastructure*

- Main sources of water **pollution** into the river are wastewaters, landfills and agricultural return waters

→ *New wastewater treatment facilities and improvement of agricultural practices (as well as reclamation of illegal landfills)*

# Next steps on the Nexus in the Alazani/Ganykh

- Draft assessment to be developed and short version for consultation is worked on; an institutional assessment ito be carried out
- Revised assessment to be presented to the nexus Task Force 8-9 September 2014

- The examples from the workshop illustrate some possible joint actions. Which institutions/actors could take related actions?
- Where and how should the eventual findings be discussed & disseminated in the countries? Can the NPDs play a role?
- Follow-up activities? Should impacts of some policies or joint actions be assessed in detail?
- Some of the finding will be reflected in the national IWRM plans

( UNDP-GEF Kura project)

***Thank You for Attention!***