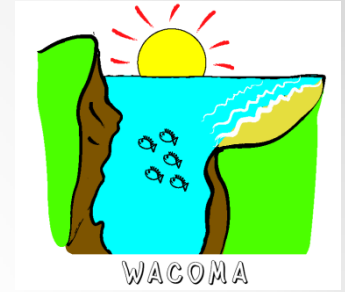




Planning And Decision Making In Water Basins And Coastal Systems



Issues of the Trans-boundary River Basins in Central Asia

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- ❖ Introduction
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General information about CA countries:

- Usually, in terms of river basins we classify CA countries into two groups: upstream (Kyrgyzstan and Tajikistan) and downstream (Kazakhstan, Turkmenistan and Uzbekistan);
- ✓ Kyrgyzstan – 200 000 square km with population 6 million;
- ✓ Tajikistan – 143 000 square km with population 7 million;
- ✓ Kazakhstan – 2, 724 900 square km with population 18 million;
- ✓ Turkmenistan – 488 000 square km with population 8 million;
- ✓ Uzbekistan – 447 400 square km with population 32 million;

Overall for CA:

☐ 4, 000 200 square km with population of 71 million;

Map of the CA:

CENTRAL ASIA

- ★ National capital
- City, town
- International boundary

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Introduction:

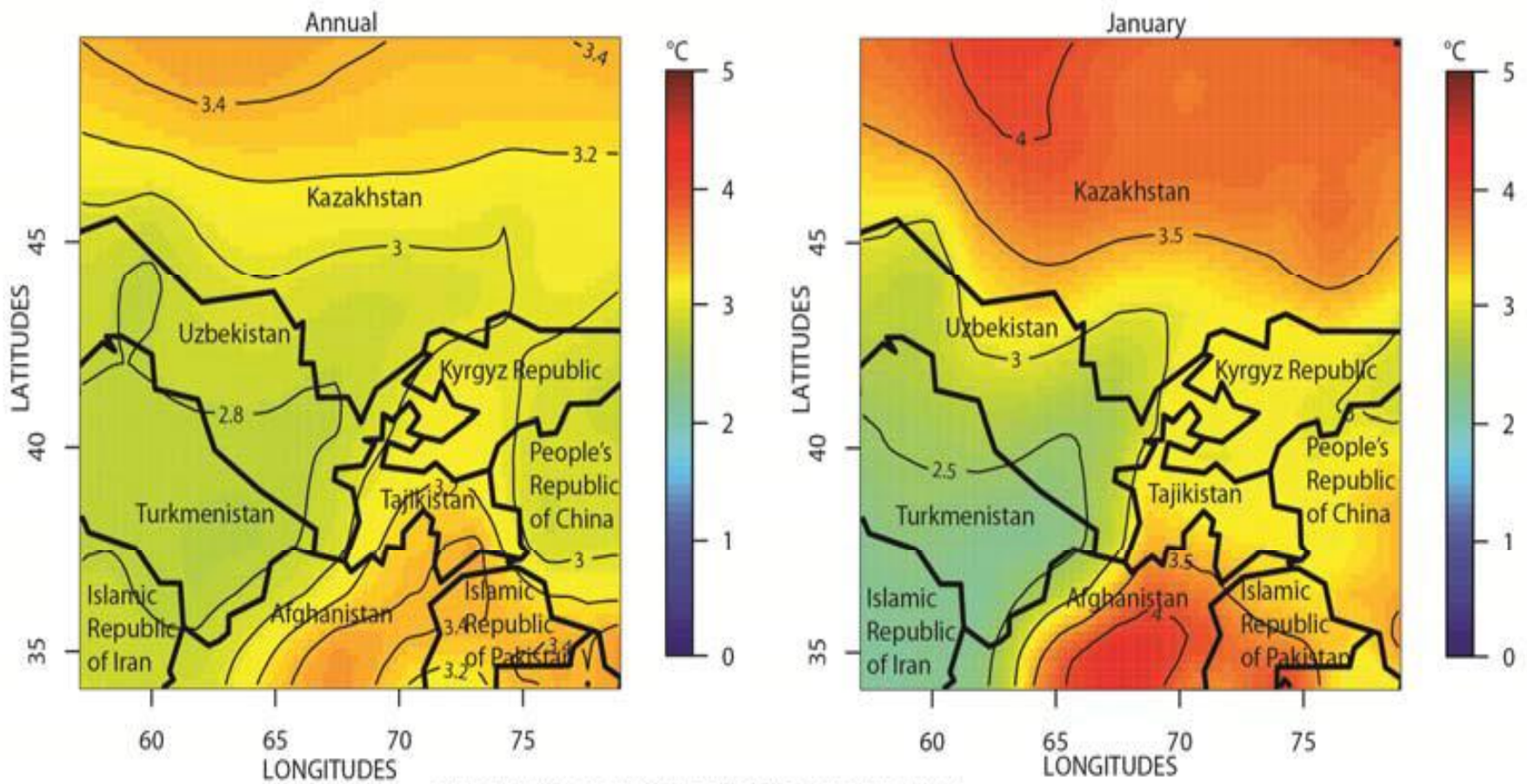
- ❖ The problems of trans-boundary rivers are being a factor of strategic security for the CA countries:
 - different approaches and irrational use of cross-border rivers in CA;
 - Kyrgyzstan and the Kambarata-2 hydroelectric plant;
 - Tajikistan and the Rogun Dam controversy;

Uzbekistan



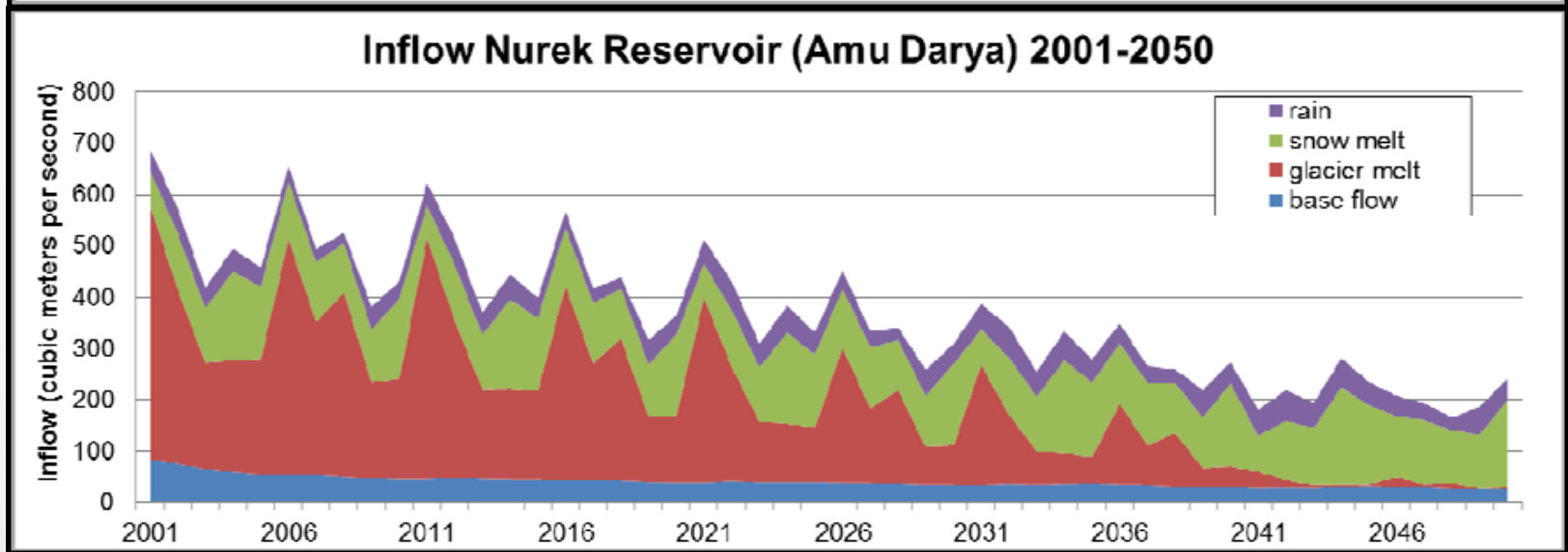
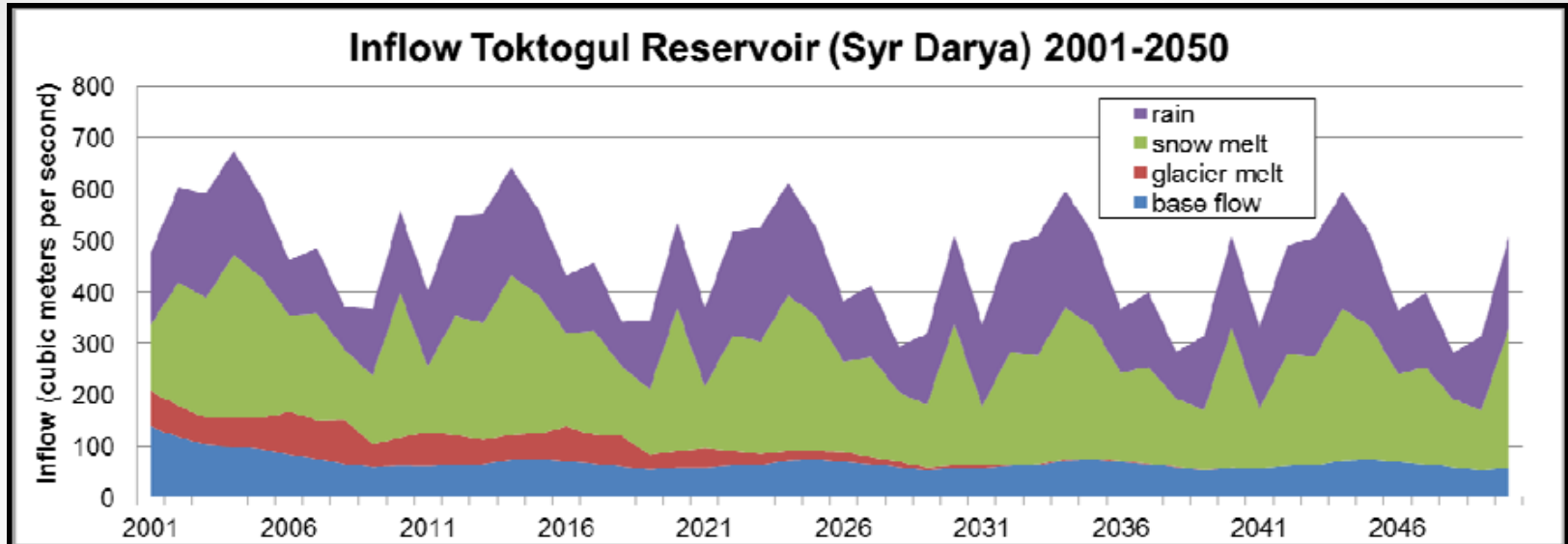
Climate change:

Average Change of Annual and January Mean Temperatures between Control Simulations for 1971–2000 and Simulations for 2045–2065



source: <http://cran.r-project.org/web/packages/rworldmap>

Climate change: inflow to reservoirs



<http://meteo.uz/rus/forecast/2005/03/05/klimat-tashkent.html>

Trans-boundary rivers of the CA:



New reservoirs of the CA:



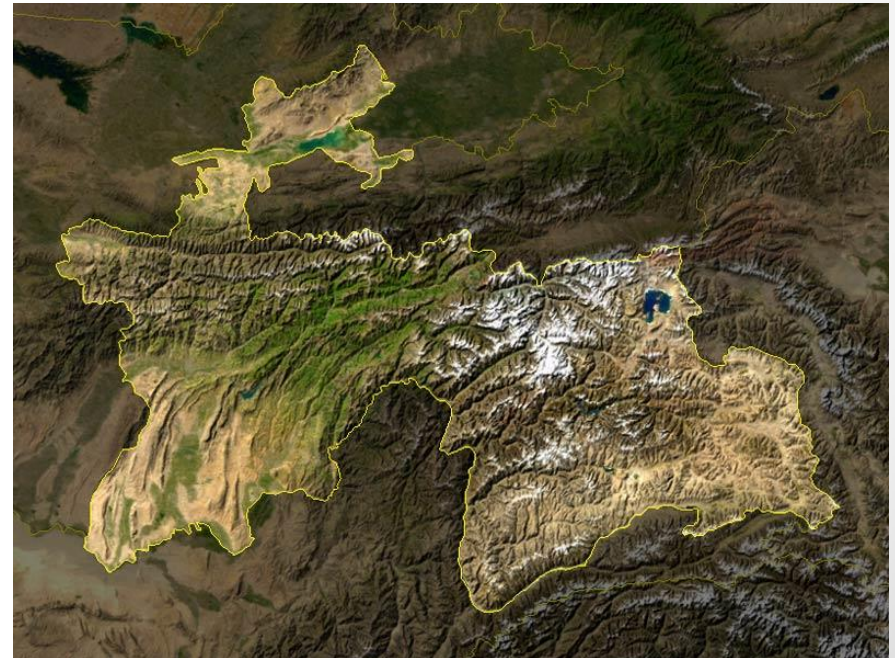
Nureg reservoir, Vaxsh river



Merging of Vaxsh and Panj rivers, beginning of Amudarya



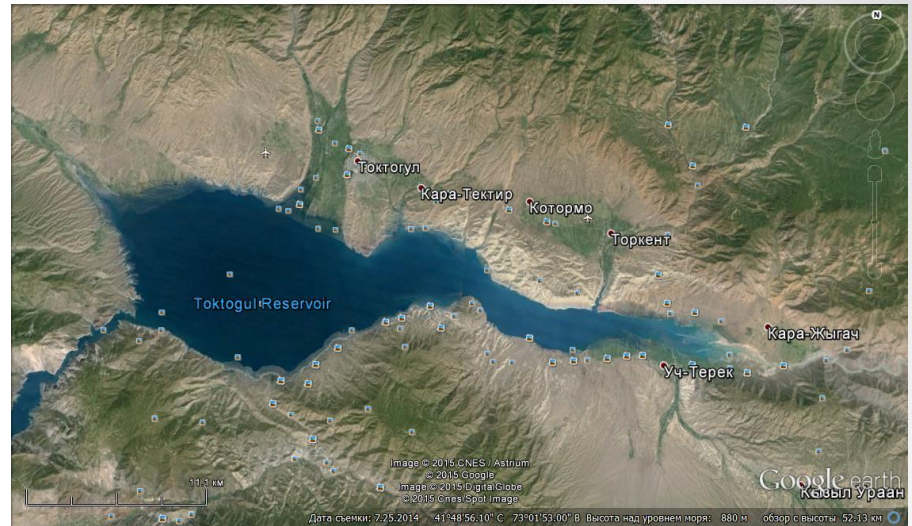
Planning Dashtijum reservoir



Tajikistan, satellite photo

New reservoirs of the CA:

- ❖ In 2007, Kyrgyzstan resumed construction of the Kambarata-2 project, which was abandoned in the 1990s;
- ❖ Kyrgyzstan's ambitions to control the flow of its rivers electric power are of particular concern to Uzbekistan;
- ❖ The power plant has received critique from people inside Kyrgyzstan, who argue that the Kambarata dams are too expensive. Instead, Kyrgyzstan must look into developing its coal industry;

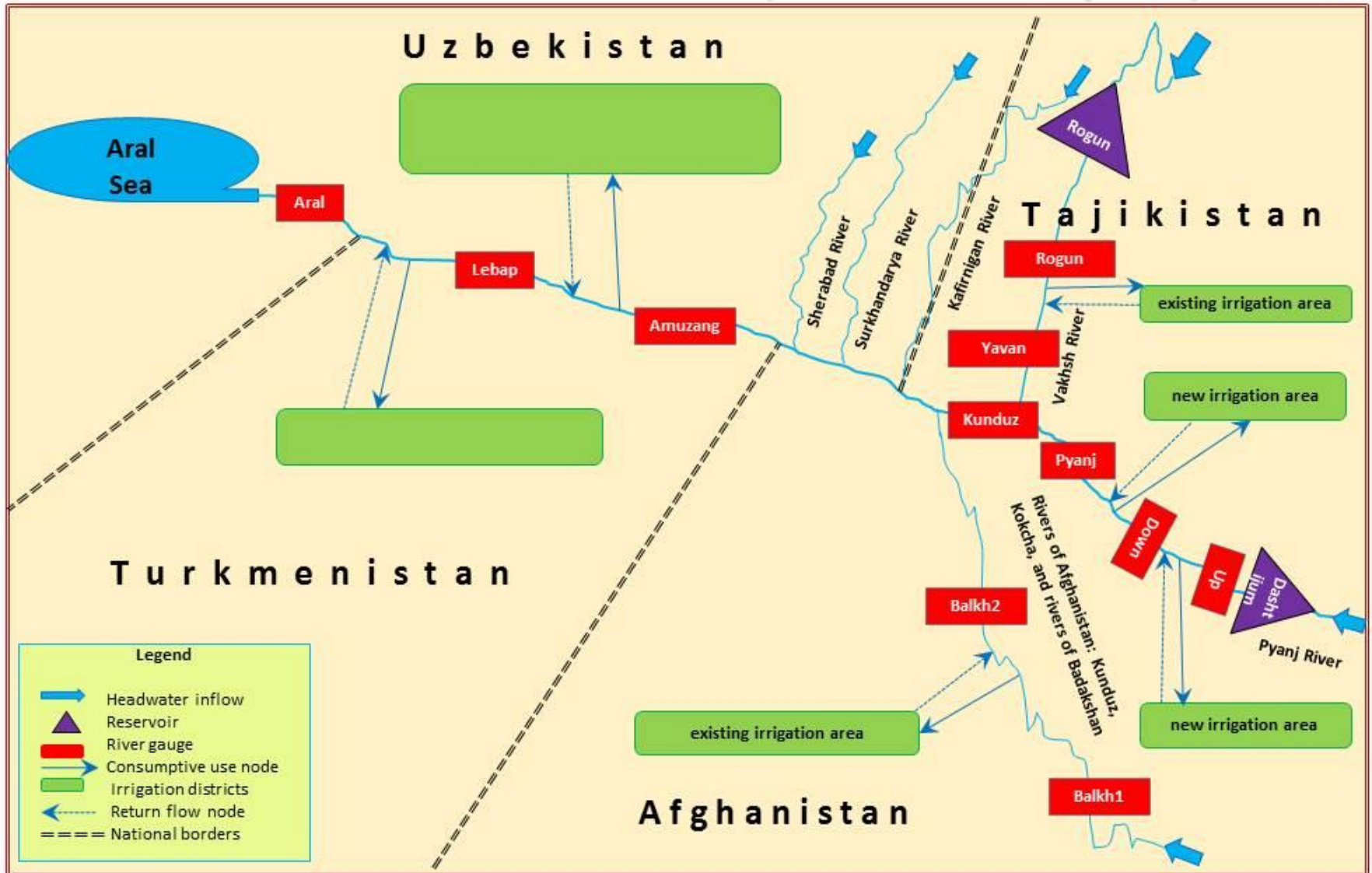


Toktogul reservoir, Narin river



Planned Kambarota reservoir, Narin river

New reservoirs of the CA (schematic layout):



Design data: Rogun and Dashtijum Reservoirs

Parameter	Units	Rogun	Dashtijum
Height	m	335	320
Design capacity	cubic km	13.30	17.60
Active regulation storage	cubic km	8.60	10.20
Surface area	square km	170	135
Max depth	m	310	300
Hydropower capacity	MW	3,600	4,000
Long-term average annual hydropower production	TWh	14.50	15.60
Average cost of completion	million USD	2,800	3,200

Discussion:

- ❖ The ownership of water as the source of contradictions
- ❖ The 1992 Almaty Agreement (The current water sharing within Central Asia dates from the 1992 Almaty Agreement)
- ❖ Limitations of the 1992 Almaty Agreement:
 - The agreement was signed in haste;
 - Afghanistan was excluded from the agreement (6 percent of water resources of CA originates in Afghanistan);
 - Climate change;

Discussion:

- ❖ Geographical location of the CA is considered one of the most active seismic zones of the World;
- ❖ It would take 8-10 years (depending on precipitation) to fill reservoirs with water;
- ❖ That implies during this time downstream countries could face significant scarcity of water resources;

Conclusion or real solutions:

- ❖ The CA countries ought to review the Almati agreement and also they have take into account Afghanistan;
- ❖ The CA countries able and must to solve their problems without intervention any other countries (USA, Russia, China, Iran and etc.);
- ❖ The best way for the solution is

References:

- ❖ [http://www.europarl.europa.eu/RegData/bibliotheque/briefing/2013/130621/LDM_BRI\(2013\)130621_REV1_EN.pdf](http://www.europarl.europa.eu/RegData/bibliotheque/briefing/2013/130621/LDM_BRI(2013)130621_REV1_EN.pdf)
- ❖ <http://www.waterpolitics.com/2009/03/20/hydro-solidarity-and-transboundary-river-issues-in-central-asia-the-middle-east/>
- ❖ <http://www.eurodialogue.eu/eu-central-asia/The-Problem-Of-Transboundary-Rivers-Being-A-Factor-Of-Strategic-Security-For-Countries>
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Thank you



Comments.....