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Governing the water-energy nexus related to hydropower on international rivers: what role for river basin and regional energy organizations?

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Understanding the Water-Energy-Food Nexus and its Implications for Governance
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The WEF-nexus related to hydro in shared river basins



- Massive investments in hydropower in Asia and Africa, mostly in international basins
 - Border rivers: joint investments
 - Transboundary rivers: mostly unilateral investments
- Hydropower projects (HPPs) generate multiple cross-border and cross-sectoral interdependencies
 - HPP impact on rivers flows & ecosystems (& people)
 - Upstream land use and hydro impacts on hydro downstream
- Coordination relies on cross-country cross-sector negotiations among energy, water and/or environment ministries
- May be facilitated by regional organizations



- May provide credibility, neutrality, information, financial means and broader perspectives on regional challenges (e.g. Schiff / Winters 2002) => Reduce transaction cost of transboundary/international cooperation
- ⇒ To my knowledge so far not discussed with respect to role in managing WEF-nexus
- ⇒ On international rivers so far main focus on role of international RBOs (Schmeier 2013), but for hydropower REGs may also play a role!
- ⇒ *What is the role of international River Basin Organizations (RBOs) versus Regional Energy Organizations (REGs) in managing WEF-nexus related to HPP on shared rivers?*

Assumed roles of RBOs/REGs with respect to WEF nexus related to hydro



Potential role	Intl RBOs	REGs
Coordinate water ministers	X	
Coordinate energy ministers		X
Facilitate investment	X	X
Promote Strategic Environmental Assessments (SEAs)	X	
Ensure application of environmental and social safeguards	X	



- Exploratory study of 4 different constellations

	RBO	REG
Border rivers	1 Kagera R.: Rusumo Falls HPP RBO: Nile Basin Initiative (NBI/NELSAP)	2 Ruzizi R.: Ruzizi III HPP REG: Energy of the Great Lakes (EGL)
Transboundary rivers	3 Mekong R.: Xayaburi Dam RBO: Mekong River Commission (MRC)	4 Coruh R.: Georgian HPPs Turkish-Georgian Cross-Border Electricity Trade Agreement & committee

- Literature review (all cases) and interviews (cases 1,2 & 4)

Findings Case 1: Kagera R./Rusumo Falls HPP



- 80 MW joint HPP by Burundi, Rwanda, Tanzania, facilitated by NELSAP, World Bank supported; financial closure 2013; construction to start
- RBO: NELSAP conducted Strategic Environmental Assessment & facilitated investment decision
- Safeguards: donor requirement, planning executed by NELSAP
- Other nexus issues: After 6 years of planning decision for run-of-river instead of reservoir project (< 700 instead of 17000 affected HH)



Findings case 2: Ruzizi R. / Ruzizi III



- 147 MW HPP by Burundi, DRC, Rwanda: ROR, facilitated by EGL; supported by EIB, KfW, ADB etc.; negotiations with private investor (PPP) since 2012
- RBO: EGL facilitates joint HPP as PPP
- Safeguards: donor requirement, planning executed by EGL, uptake by private investor uncertain
- Other nexus issues: EGL promoted the set up of intl. RBO for Lake Kivu and Ruzizi River!

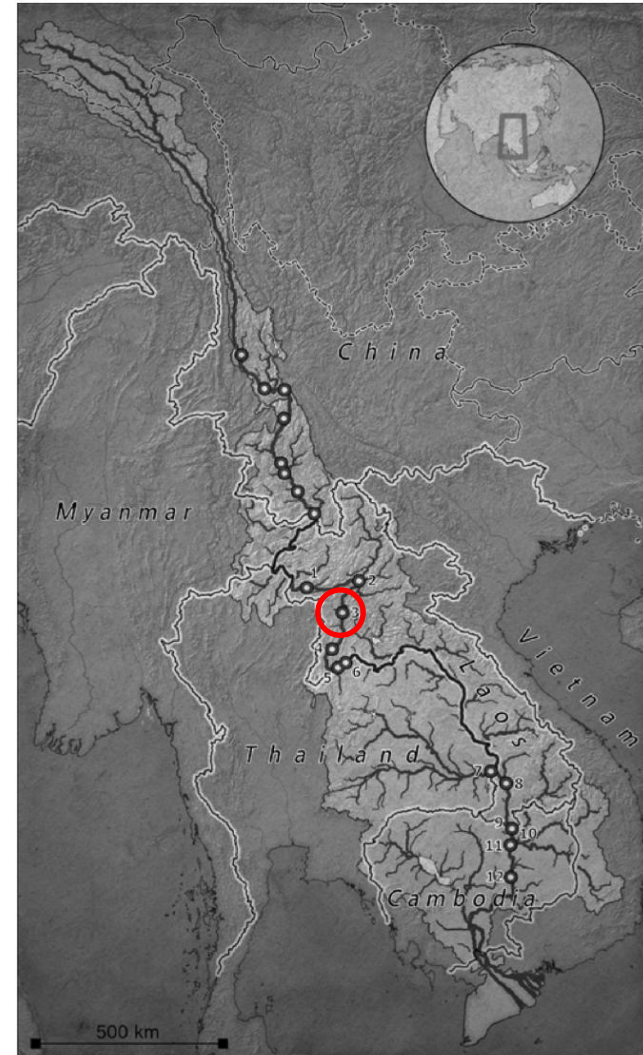


Findings case 3: Mekong R. / Xayaburi Dam



- 1285 MW in Laos with Thai private sector participation
- 2010: Laos notifies Thailand, Cambodia and Vietnam according to MRC Procedures for Notification, Prior Consultation and Agreement (PNPCA)
- Lengthy negotiations & NGO protests
- Design adjustment (fish ladder, mechanism for sediment flushing) and groundbreaking ceremony in Nov. 2012 make Cambodia and Vietnam approve project
- MRC PNPCA, SEA, Preliminary Design Guidance for Proposed Mainstream Dams (2009) influenced design!

Sources: Schmeier 2013, Hensengerth 2015

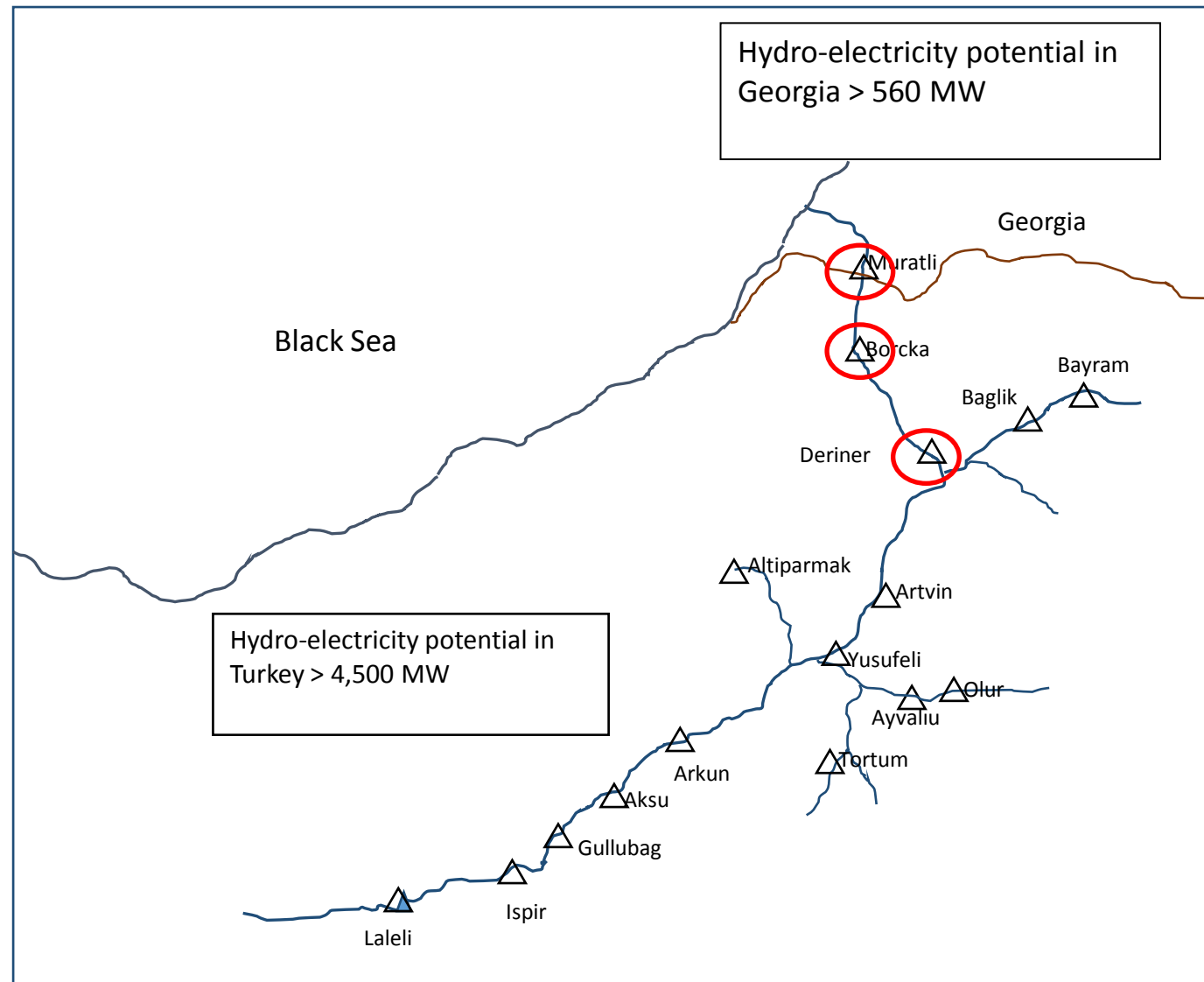


Source: Suhardiman et al. 2015

Findings case 4: Georgian HPP on Coruh River



- ⇒ Plans for Turkish investments in Georgian HPP and planned regional energy trade lead to
- ⇒ Turkish-Georgian Cross-Border Electricity Trade (Jan. 2012) + committee
- ⇒ Better flow synchronization likelay (despite stalled water negotiation)
- ⇒ Georgia still bears environmental costs of Turkish dams



Preliminary conclusions



- Some synergies (Ruzizi!) but a number of goal conflicts between energy, water and environment sectors related to hydropower
- Regional organizations may play a significant role in joint HPP (border rivers): facilitation of investment and potentially SEAs / safeguard application
- Unilateral (upstream) HPP on transboundary rivers: negative effects may still potentially be reduced if RBO exists, however, clout vis-à-vis energy / private sector limited
- Downstream HPP on transboundary river in addition to upstream HPP: REGs may regulate flow regime, but may neglect environment
- Presence/absence of donors and private sector important further factors for management of water/energy-environment link

Thank you for your attention!

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