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TECHNISCHE
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DRESDEN

ADVANCING A **NEXUS APPROACH**
TO THE SUSTAINABLE MANAGEMENT
OF **WATER, SOIL AND WASTE**



INTERNATIONAL
KICK-OFF WORKSHOP

11-12 NOVEMBER 2013
DRESDEN, GERMANY

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Deutsches Institut für
Entwicklungspolitik

German Development
Institute

Coordination between the water, energy and environment sectors in a transboundary context

Waltina Scheumann (DIE)

International Kick-off Workshop, 11-12 November 2013, Dresden

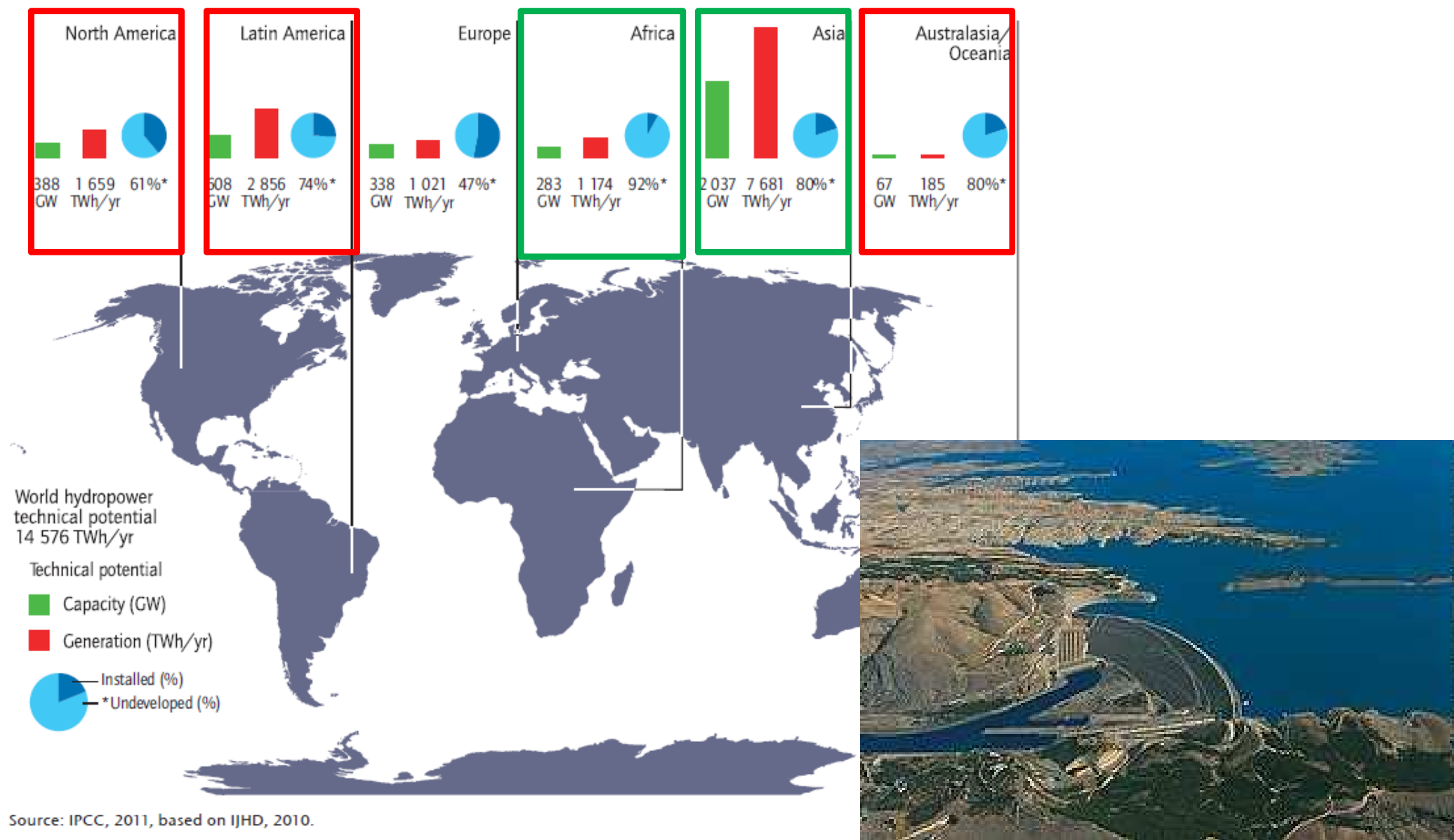
Dams – at the heart of the nexus



Tapping the potential ...



Figure 8: Regional hydropower technical potential and percentage of undeveloped technical potential (2009)



Source: IPCC, 2011, based on IJHD, 2010.



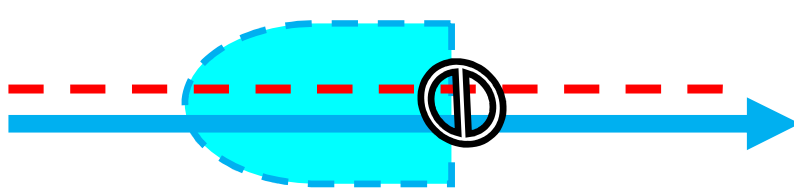
How does inter-state cooperation and inter-sectoral coordination plays out?

Key issues

- * Incentives for cooperation between **states**
- * Incentives for coordination between **sectors**

How to avoid conflict and harness the potential in a socially inclusive and environmentally friendly way?

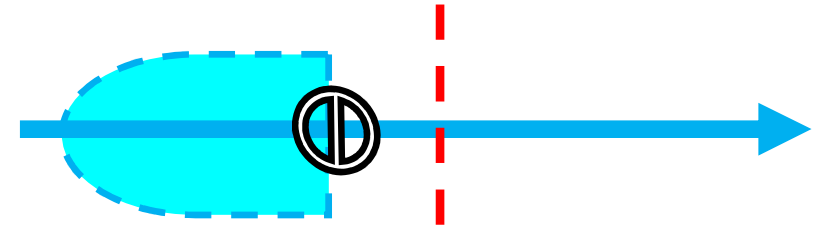
Incentives for states to cooperate?



(1) Dams on border rivers

- requires cooperation
- usually joint infrastructure
- costs shared in relation to benefits

e.g. Kariba Dam / Itaipu Dam



(2) Dams on transboundary rivers

- unilateral action possible
- cooperation
 - if economic/financial constraints hinder unilateral action;
 - if downstream's participation increases overall benefits generated

e.g. Manantali Dam / Columbia River



“Maximize electricity generation”

Reliable flow of high quality water / avoid sedimentation and pollution of reservoirs

affected by upstream land and water use (irrigation, deforestation, pollution) and climate change impacts

=> Incentives to work with water, forest and environment sectors

Incentives for water sector to coordinate with energy sector?



“Secure / optimize water allocation for all uses”

not only reliable water flow for hydro

“Minimize flood / drought risks”

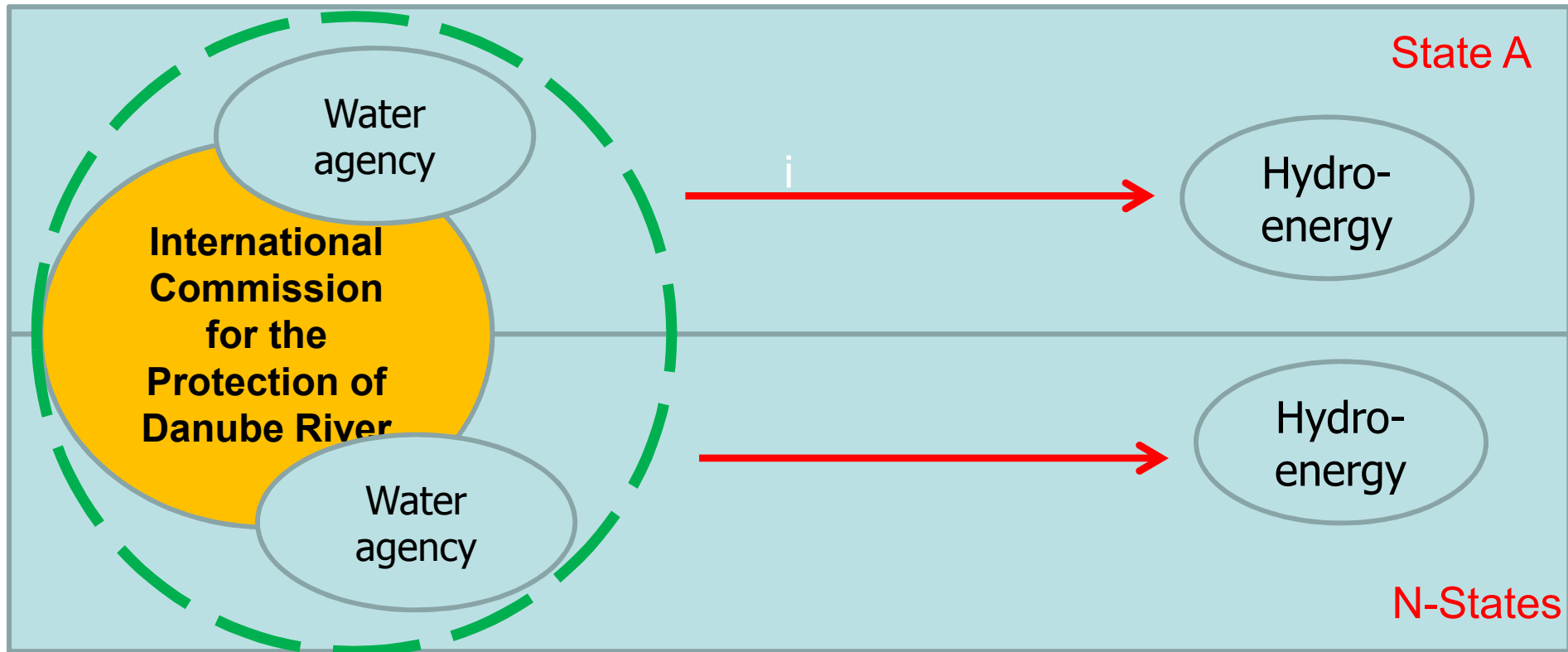
maintaining high water levels in reservoirs for electricity increases risk of uncontrolled flooding (add to climate impacts); peak hydro (sudden water releases) constitutes a risk for downstream users and river ecology

=> Incentives to work with energy and others to balance allocation
[Nick Bonvoisin, UNECE Nexus Initiative: „It is not easy for water and environment authorities to involve... the energy sector... .“]



“Secure environmental flow / protect river ecology”
affected by water for energy / ...for food / polluting sources

=> Incentives to work with other sectors to maintain ecosystem services and river ecology - for those who depend on them (e.g. adjust dam design and dam operation)



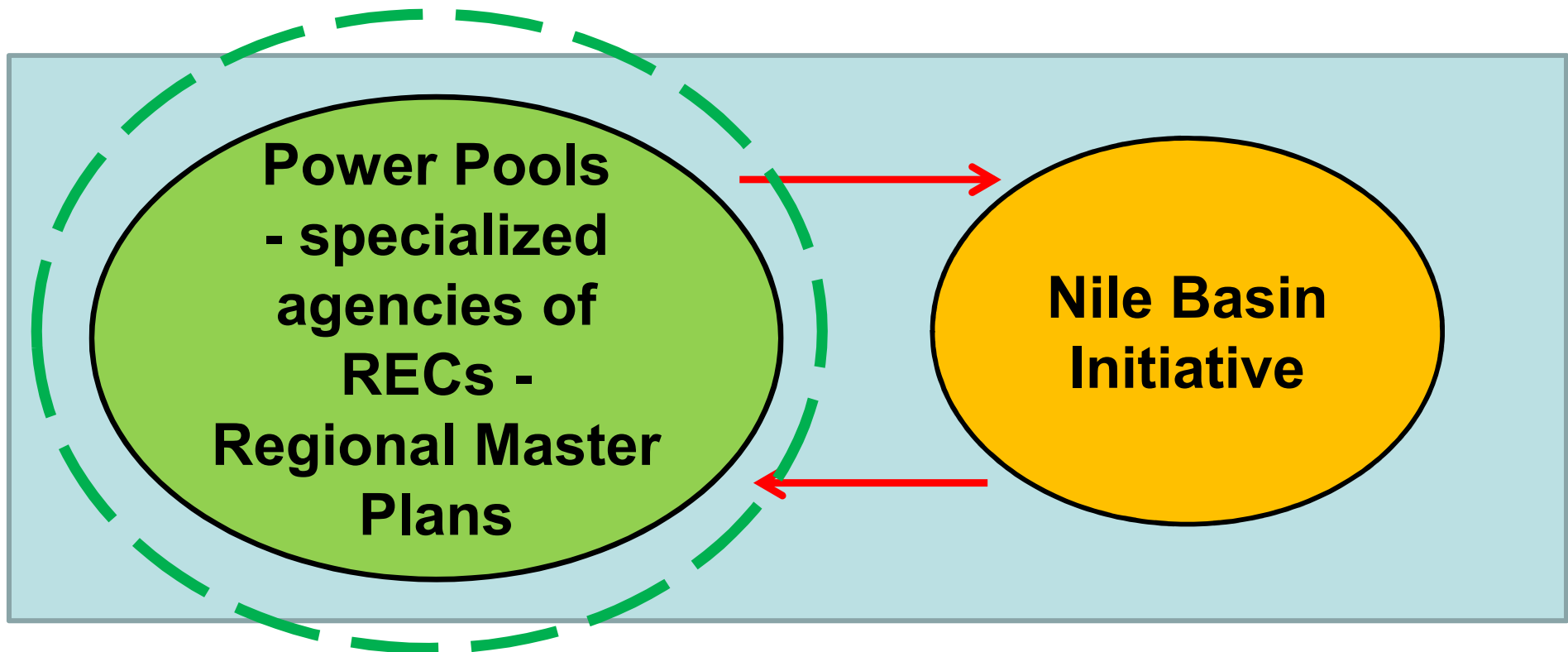
water sectors cooperate >....

**Guiding Principles on
Sustainable Hydropower
Development in the
Danube Basin**

icpdr iksd

International
Commission
for the Protection
of the Danube River

Internationale
Kommission
zum Schutz
der Donau



power sectors cooperate \leftrightarrow water sectors cooperate

Some observations



Whoever takes initiative tries to set the terms and the principles under which to unite, in order to influence how the outcome should look like.

„Hydro under water regime“ (IKSD, MCR)

„Water under hydro regime“ (Regional Power Pools)

„Hydro / water under environmental regime“ (ZAMCOM)

...

Platform / tools for identifying key inter-sectoral impacts, trade-offs, and solutions?

Linkages between international and national level:

*„It is the **national institutions** that have to play their role...“*



- ❖ What are motivations / barriers to inter-sectoral cooperation in a transboundary context?
- ❖ What are adequate and successful approaches for effective sector coordination in transboundary settings?

How do they address power imbalances between sectors?

How do they address sustainability dimensions ?

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