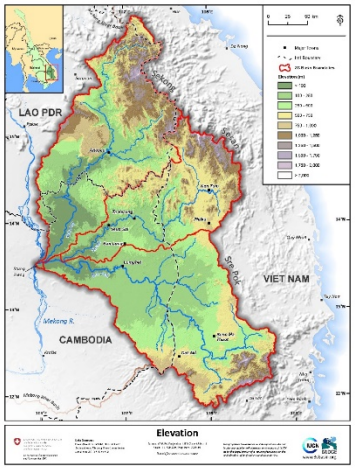
3S NEXUS ASSESSMENT
Cambodia, Lao PDR, Vietnam

Transboundary cooperation unlocks opportunities to optimize the water, food, and energy nexus in the 3S river basin

Overview and location

Covering 10% of the Mekong river basin, the transboundary Sekong, Sesan, and Srepok (3S) river basin provides 20% of its water and sediment. The 3S is rich in land, forest, and hydropower potential, which the three countries are seeking to harness for national development. Transboundary cooperation can optimize the value of water across the 3S.



Main challenges and solutions

The main challenge is the lack of a counterpart institution to work with to implement the assessment recommendations. We adapted by forming a regional Technical Advisory Group to provide technical input and help disseminate the results, by engaging high-influence/low-interest organizations such as IFC, World Bank, the Communist Party of Vietnam, and ministries of energy, and by framing the key recommendations in economic rather than biodiversity terms. IFC is linking financing for power transmission to keeping the Sekong mainstream dam-free. In 2020, Cambodia issued a 10-year moratorium on Mekong mainstream dams.

Contribution to the valuing water principles

The nexus assessment identified three areas of transboundary cooperation: joint energy planning and investment to maximize river connectivity; transforming coffee production in Vietnam to a higher value and less water-consuming mix to increase dry season water flow into Cambodia; and keeping the mainstream of the Sekong free-flowing to sustain regional fisheries and food security. Coordinated transboundary investments can deliver energy security, meet export targets, and minimize impacts on fisheries. The coffee transformation will cost $300 million over 30 years, increase crop value by 2.5, and save 200 million m^3 of water in dry season.

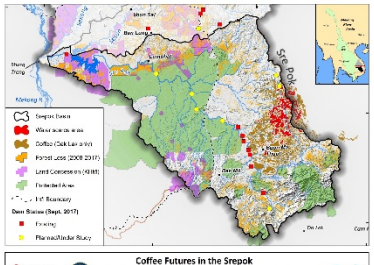
More information

https://portals.iucn.org/library/sites/library/files/documents/2019-024-En.pdf

https://portals.iucn.org/library/sites/library/files/documents/2019-035-En.pdf

https://www.iucn.org/sites/dev/files/content/documents/2020/bridge_stimson_3s_energy_profile_-_cw_29.05_-_final.pdf

Jake Brunner, Head, Indo-Burma Group, jake.brunner@iucn.org



MULTI-USE DAMS

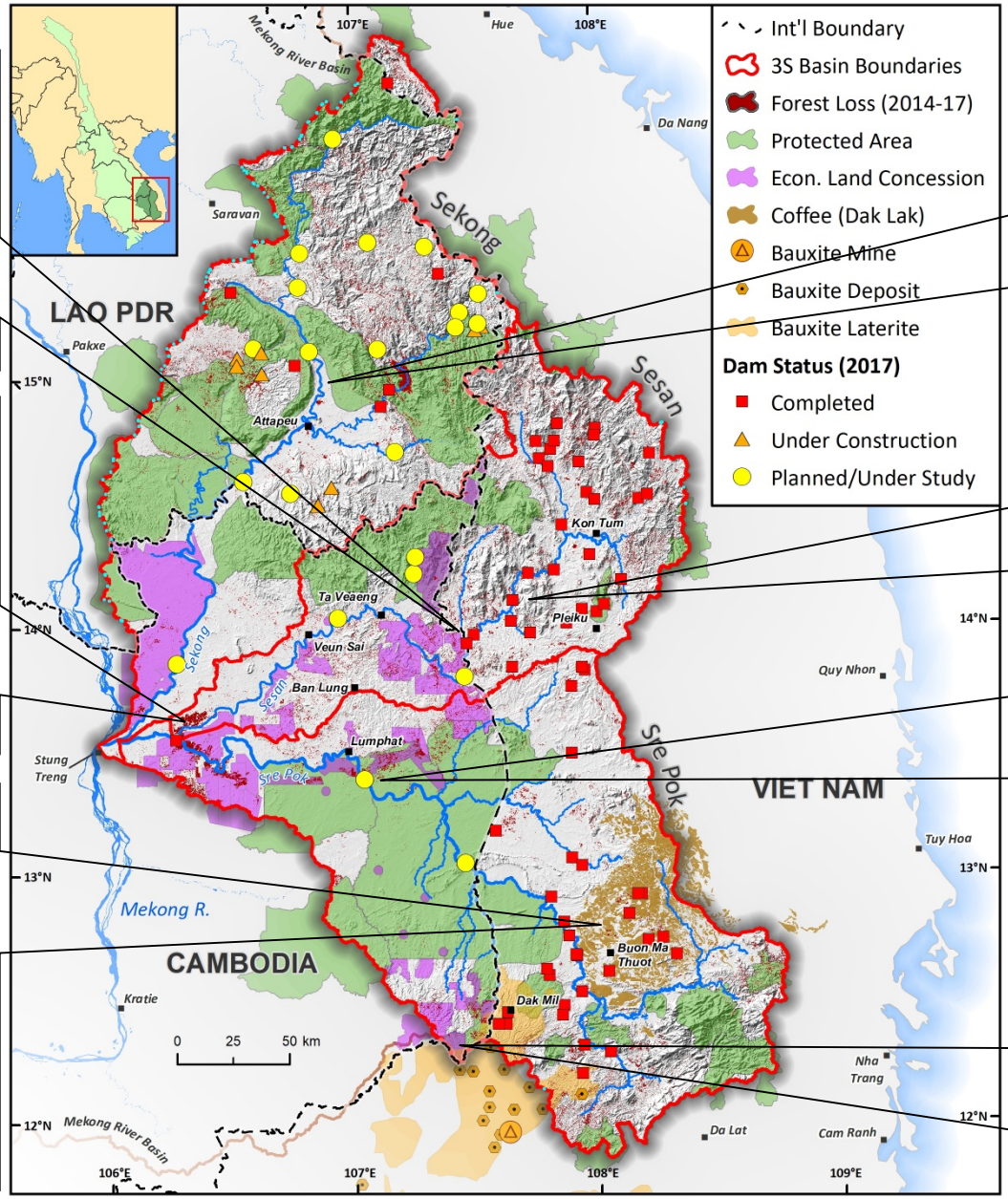
In 3S, dams have been designed exclusively for hydropower. New operating rules for existing dams, and the design of new dams should be predicated on multi-purpose use.

MULTI-PURPOSE CROPS

Large-scale production of crops with soil binding properties and value chains (e.g., bamboo) would reduce soil erosion, diversify livelihoods, and contribute to forest landscape restoration.

IMPROVED GROUNDWATER MANAGEMENT

More efficient irrigation and managed aquifer recharge across 500,000 hectares of coffee will increase dry season flows, enhance coffee quality, and secure coffee supply.



CONSERVE SEKONG MAINSTEM

As the last free-flowing major tributary of the Mekong, the Sekong is critical for regional fisheries and food security.

HYDRO-MET STATIONS

Hydro-met network upstream of hydropower cascade could reduce flood risk and need for expensive flood defenses downstream.

OPTIMAL DAM SELECTION/OPERATION

State of the art modelling shows that 75% of total energy potential could be harnessed with only a 20% reduction in downstream sediment delivery.

SYSTEM-SCALE ENERGY PLANNING

By integrating solar/wind (e.g., in ELCs, on reservoirs) and regional power trade into energy mix, countries can achieve energy security at lower cost.

Possible Nexus/Non-Nexus Solutions

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

Data Sources:
Towns/borders: GADM, Natural Earth
Basins/rivers: Mekong River Commission
Elevation: CGIAR SRTM (v 4.1)
Bauxite: ICEM; Coffee: CHYM Univ.
Dams: WLE-CGIAR (2017-09)
Forest Loss: Hansen et al. 2013

Datum: WGS 84, Projection: UTM Zone 48 North
Scale: 1:2,200,000, Map Date: 2018-11

Not all features drawn to scale.

Geographical boundaries and designations do not imply any opinion whatsoever on the part of IUCN as to the legal status of a country/territory or the delimitation of its frontiers and boundaries.

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