

STEP		LOCATION	SECTORS
1	Identification of basin conditions, the socio economics	Desk study	General. Information normally used to underpin sectoral planning. Key elements include general socio-economic goals.
2	Identification of key sectors and stakeholders	Desk study	General. Requires expert judgment understanding of local context, governance.
3	Analysis of the key sectors	Desk study/ 1 st Workshop	Individual sector experts and plans. Key elements include identifying resource flows and institutional mapping.
4	Identification of intersectoral issues	1 st Workshop	Sectoral group discussion on interlinkages (input needs, impacts and trade-offs), and discussion on sectoral plans
5	Nexus dialogue and future developments	1 st Workshop	Agreeing on a prioritization of main interlinkages. How the interlinkages are expected to change (development trends, key uncertainties and drivers)
6	Identification of opportunities for improvement	1 st & 2 nd Workshop/Desk study	Identification of solutions with multiple impacts between sectors, scales and boundaries



What are current or potential Climate-Energy-Water-(Land) nexus challenges in the Drin River Basin?

*By Climate-Energy-Water nexus challenges we mean challenges specifically due to links between the climate, energy and water systems and **not yet addressed***



What can be modelled?

OSeMOSYS
Open Source Energy Modelling System

 pTIMUS
www.optimus.community

What makes sense from the perspective of a long-term energy and resource use model...

- *Climate-energy*: How hydro power and energy infrastructure is affected by potential long-term climatic changes
- *Water-energy*: Effect of competing water uses on energy generation by hydro power plants; effect of different operation rules of storages
- *Climate-water*: Effect of long-term climatic changes (e.g. temperature, rainfall patterns) on water availability for agriculture or energy



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What makes sense from the perspective of a long-term energy and resource use model...

- *Climate-energy*: How hydro power and energy infrastructure is affected by potential long-term climatic changes
 - Input: annual and intra-annual projections of water flows; changing capacity factors of hydro power plants
 - Input: increased outage time due to extreme weather events



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What makes sense from the perspective of a long-term energy and resource use model...

- *Water-energy*: Effect of competing water uses on energy generation by hydro power plants; effect of different operation rules of storages
 - Input: less water storage volume available for hydro power generation, due to higher use for agriculture
 - Input: increased or decreased storage buffer volumes



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What makes sense from the perspective of a long-term energy and resource use model...

- *Climate-water*: Effect of long-term climatic changes (e.g. temperature, rainfall patterns) on water availability for agriculture or energy
 - Input: changed crop yields, water needs and evaporation due to changes in mean temperatures and humidity levels