

A web-based platform for managing water resources allocation under climate uncertainties (Web-WASP)



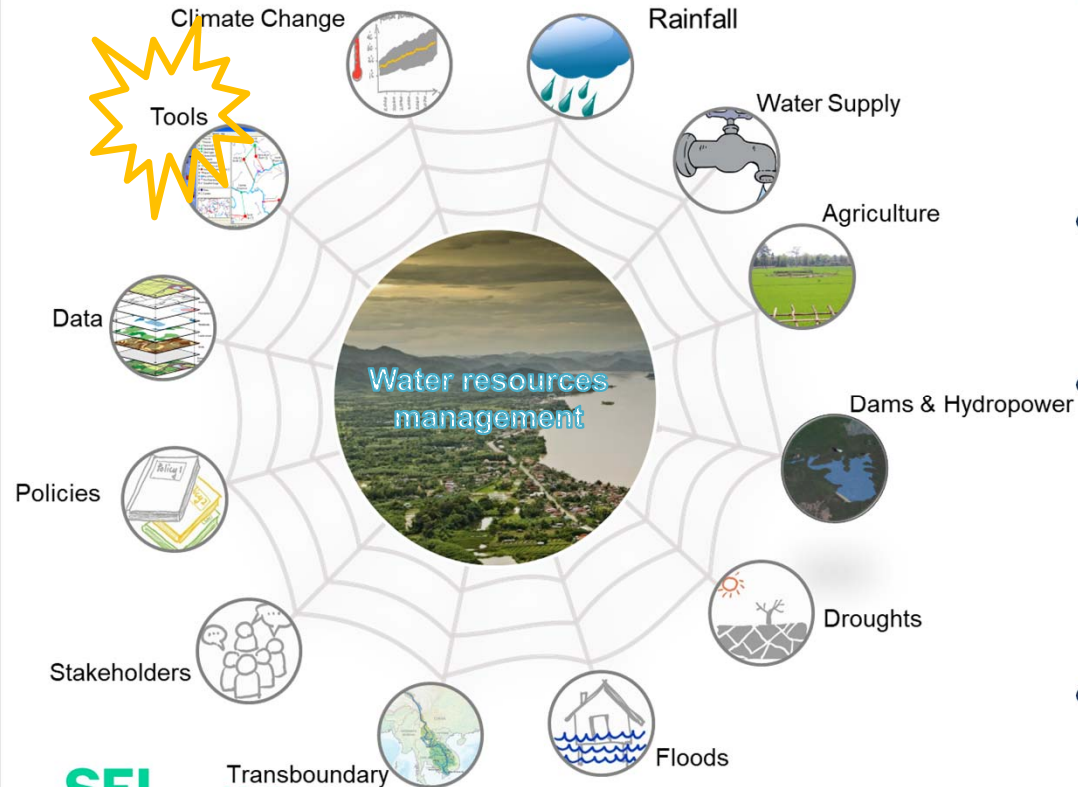
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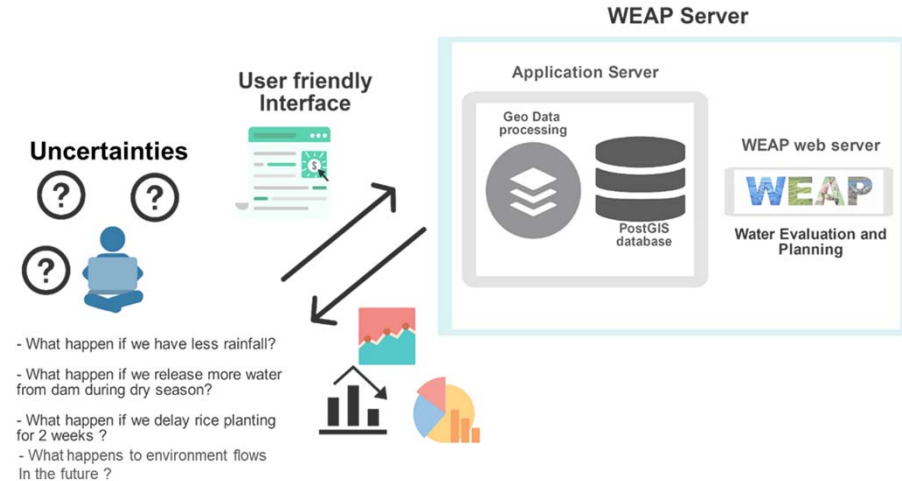
Water management in uncertain future



- Meets the water management objectives of the **broadest spectrum of uses & stakeholders**
- **Reduces the negative impacts** felt by concerned stakeholder
- **Considers uncertain future conditions** (climate change, population growth, economic integration and development)
- **Build resilience** to the growing weather risks

Rationale behind Web-WASP tool

- Web based Water Assessment Scenario Platform (Web-WASP) is based on Water Evaluation and Planning tool (WEAP)
- Envisioned as stakeholder centric, open access, catchment specific tool to test the robustness of water allocation strategies under certain future conditions.
- Encompass wide range of demand and supply components within the catchment.
- Enables use by technical and non-technical stakeholders alike.



Web-WASP Framework

Stakeholder engagement

- Stakeholders driven development at every step

- Problem formulation
- Climate change scenarios
- Basin development scenarios
- Model development (if expertise available)
- Required outputs and type of visualization
- Transfer web-based tool to the stakeholder web-server
- Capacity building for tool development and usage



Need assessment and problem formulation workshop in Vietnam



Tool demonstration workshop in Bangkok

Pilot basins



Ca



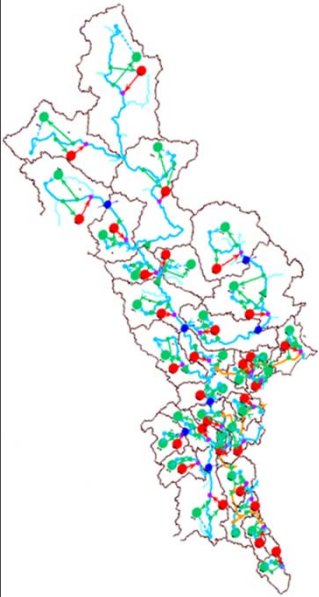
Srepok



Huai Sai Bat

Type	Transboundary	Transboundary	Non-transboundary
Countries	Laos and Viet Nam	Viet Nam and Cambodia	Thailand
Status	Prototype completed	Ongoing	Ongoing

Development choices



API
➡



Basin development choices

Dam construction

The site of three potential new dams is shown on the left, in the schematic. Click on the blue marker and select yes/no to switch point.

- These dams would provide water for urban and agricultural supply.
- No new hydropower is planned for these dams.
- Building new dams will have negative ecological consequences. In this game, habitat fragmentation is included and scored as follows: Ngan Truoi would result in a penalty of -0.3 points, Thac Muoi at -0.6 points, and Ban Mong at -2.1 points.

Among the existing dams, note that only Ban Ve has hydropower generation. Its 'normal' operation equally prioritizes water for hydropower with urban and agricultural supply.

Dam operation

Dam operation for Ban Ve dam

☒ Normal operation
☐ Flood control
☐ Hydropower
☐ Urban and agriculture demand supply

Third crop

Third crop of rice ☐ Yes ☒ No

Increasing irrigation capacity

Irrigation capacity - North ☐ Yes ☒ No

Irrigation capacity - South ☐ Yes ☒ No

Irrigation capacity - Ha Tinh ☐ Yes ☒ No



WEAP model

Catchment schematic

Development options

Outputs

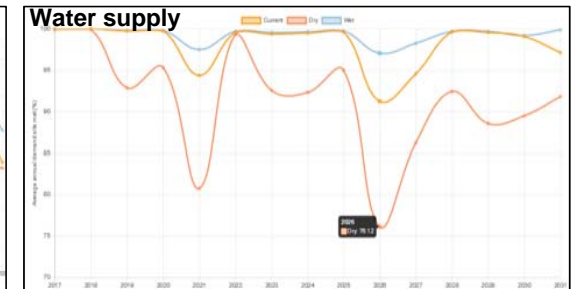
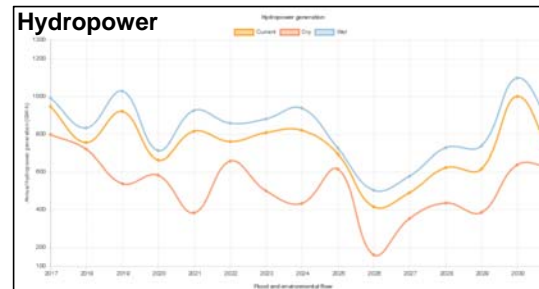
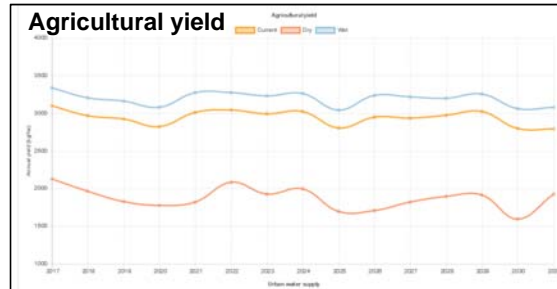
Results and outputs

Simple
score based
performance

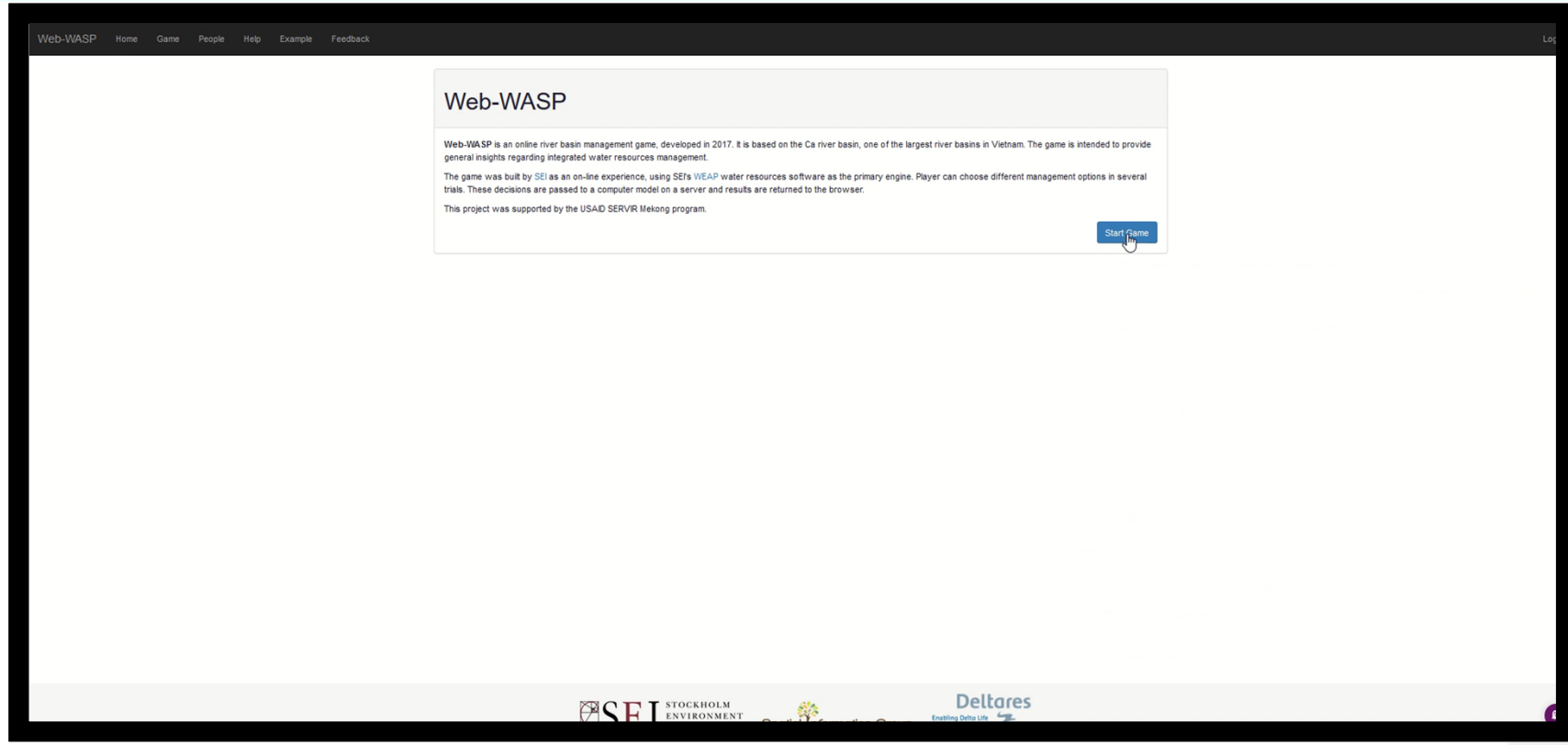
Quantitative
outputs



Parameter	Climate Scenario	Agricultural Yield ⓘ	Hydropower Generation ⓘ	Urban Water Supply ⓘ	Flood Flow ⓘ	Environmental Flow ⓘ	Habitat Fragmentation ⓘ	Final Score	
Score	Baseline	0	0	0	0	0	0	0	0
	Current	1	1	1	-1	1	-0.3	2.7	2.1
	Dry	-1	-1	-1	1	-1	-0.3	-3.3	
	Wet	1	1	1	-1	1	-0.3	2.7	



A Short demonstration of the Web-WASP tool



Summary and conclusions

Proven benefits

-  Integrated assessment
-  Stakeholder ownership
-  Capacity building for wide range of users
-  Addresses uncertainties (climate & development)
-  Knowledge base for transboundary co-operation

Enabling conditions


-  Stakeholder interest
-  Data sharing in transboundary basins
-  Future basin development plans
-  Infrastructure (technical, financial & institutional) to maintain the tool

Upscaling

-  Identify key water management hotspots
-  Buy-in from the national agencies
-  Multi-stakeholder working groups
-  Resource for capacity building, digital infrastructure, etc

Thank You

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