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## Why a Global Network of Demonstration Sites in Ecohydrology? Arabic Countries Potential

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# Why a Global Network of Demonstration Sites in Ecohydrology? Arabic Countries Potential

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# What is Ecohydrology?

## IHP-VIII: Water Security

### Responses to Local, Regional, and Global Challenges



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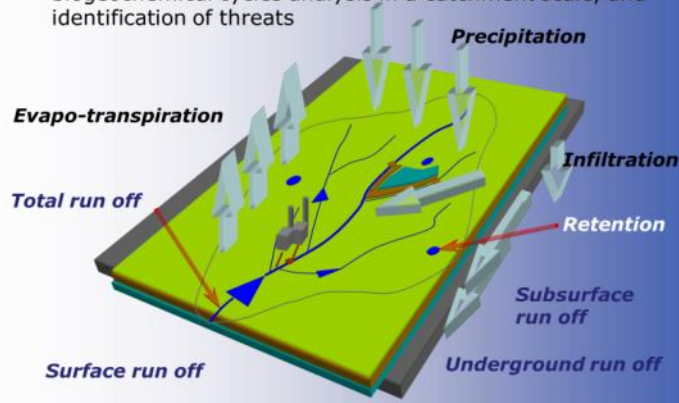
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# What is Ecohydrology?



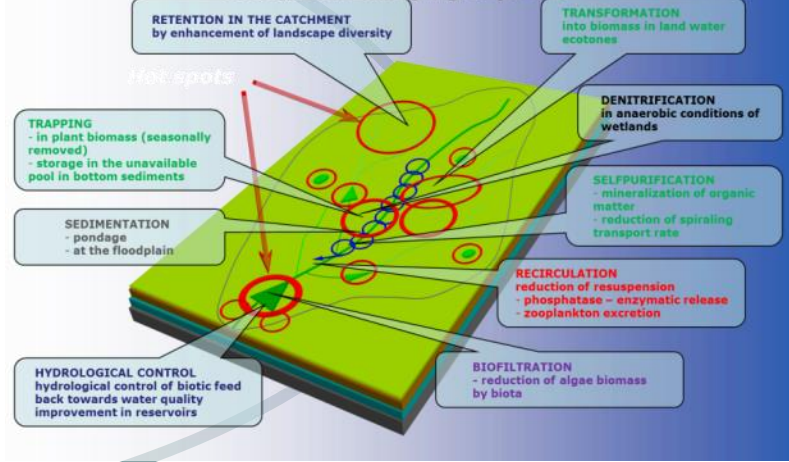
## I – FIRST PRINCIPLE (Zalewski 2010)

Quantification of hydrological cycle as a template for biogeochemical cycles analysis in a catchment scale, and identification of threats



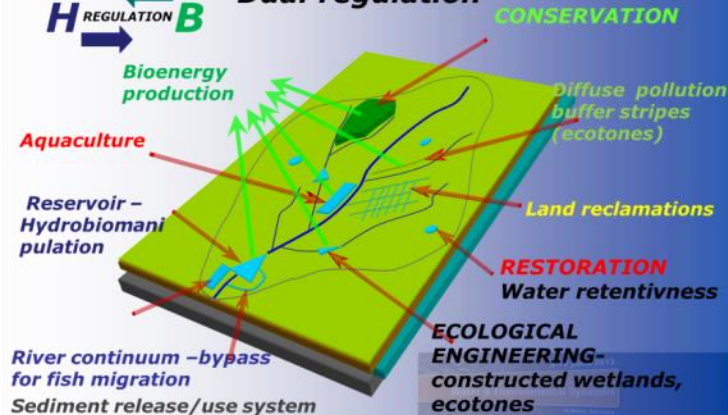
## II – SECOND PRINCIPLE (Zalewski 2008)

Identification of potential areas for enhancement of ecosystem carrying capacity



## III – THIRD PRINCIPLE

Using biota to control hydrological processes and vice versa, using hydrology to regulate biota dynamics





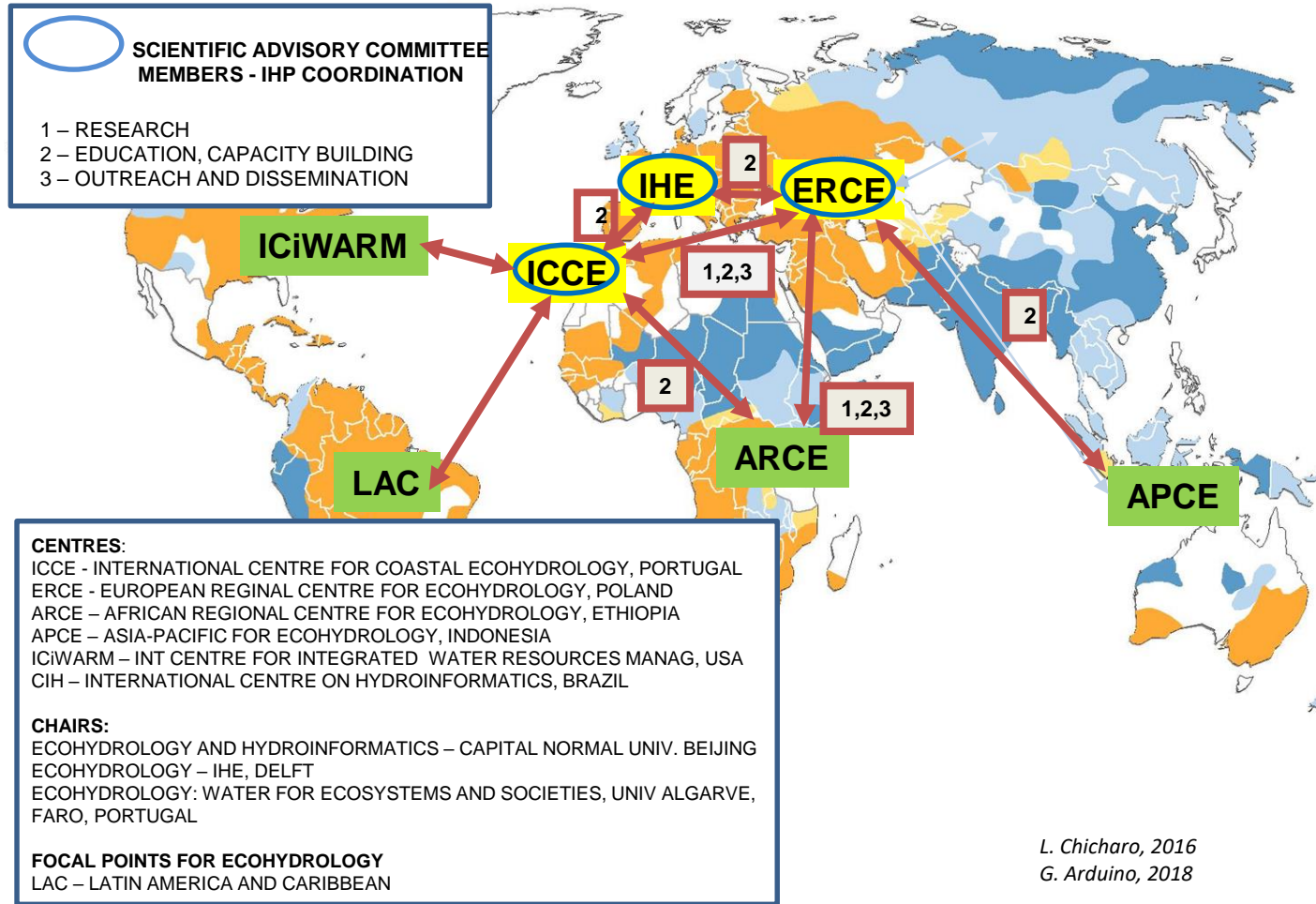
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# UNESCO ECOHYDROLOGY "FAMILY"





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# What are the « demosites » ?

The Ecohydrology Programme is also based on a network of demonstration sites which integrate the concept of “**enhanced ecosystem potential**” with EH strategies closely related with water to improve IWRM on specific areas.

They:

- Are **long-term monitoring** projects involving different local stakeholders in order to solve environmental, economic and social issues.
- Use the **most appropriate** and **cost-effective** ecohydrological engineering solutions for each ecosystem as management tools for Integrated Water Resources Management (IWRM).
- Provide contribution for both **human** Sustainable Development Goals and **environmental** ones .

These projects follow a solution-oriented approach for the enhancement of **W**ater resources, **B**iodiversity and ecosystem **S**ervices for society and of the **R**esilience to various forms of anthropogenic impacts (**WBSR**).



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# What are the « demosites » ?



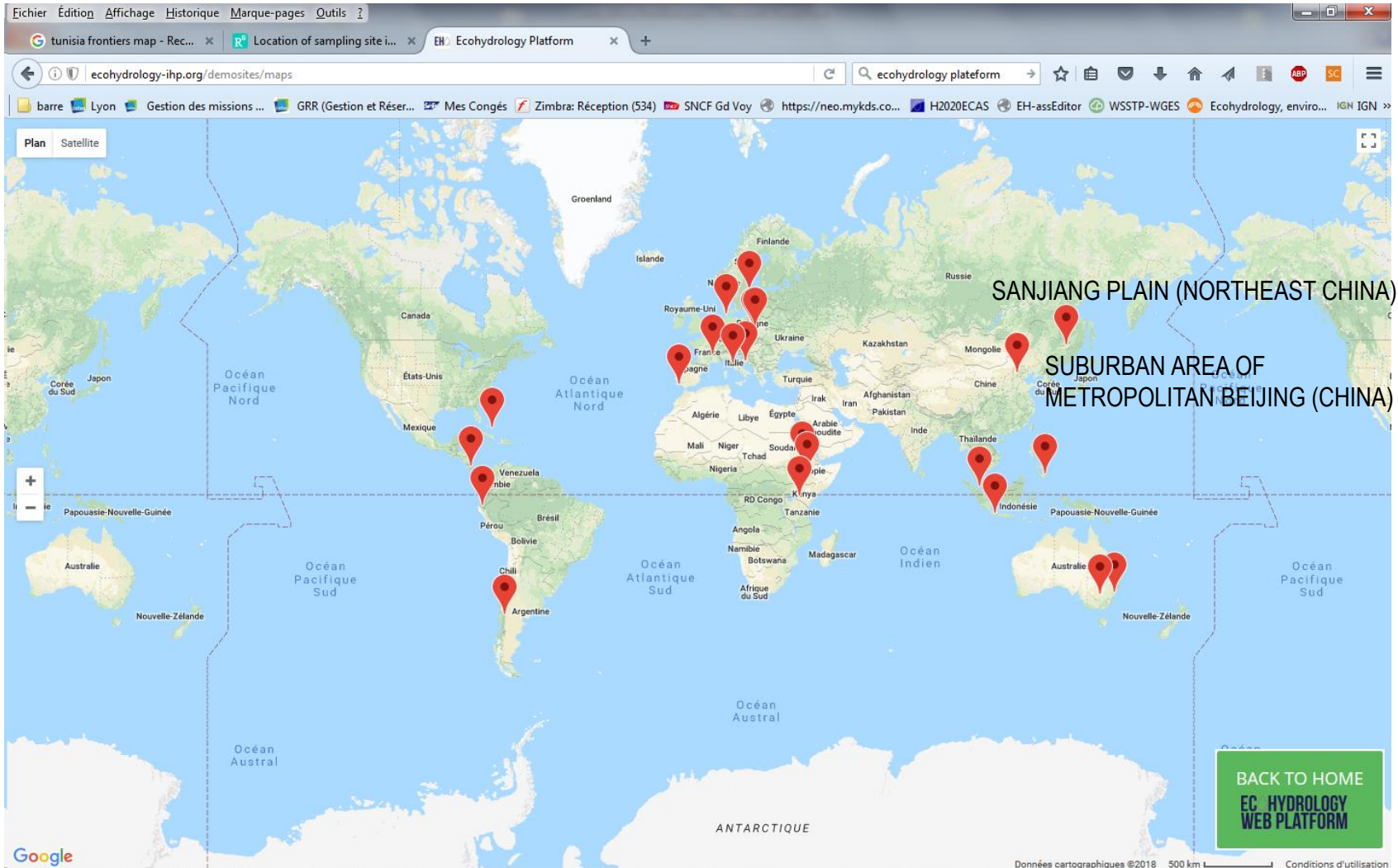


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<http://ecohydrology-ihp.org/demosites/>



**Water Resources Dialogue: China-Africa Water Forum Series No. 6 - Sharm El Sheik – July 23 to 27, 2018 - Egypt**





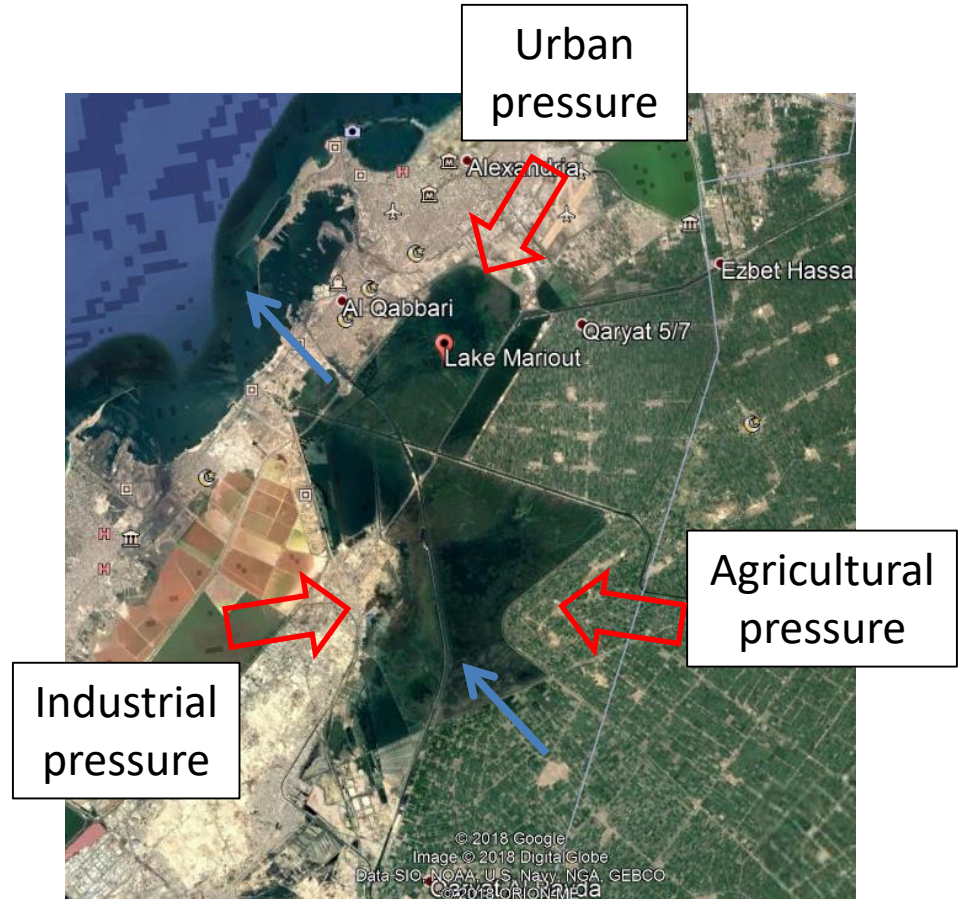
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# Mariout Lake (Egypt)





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# EcoHydrological solutions?





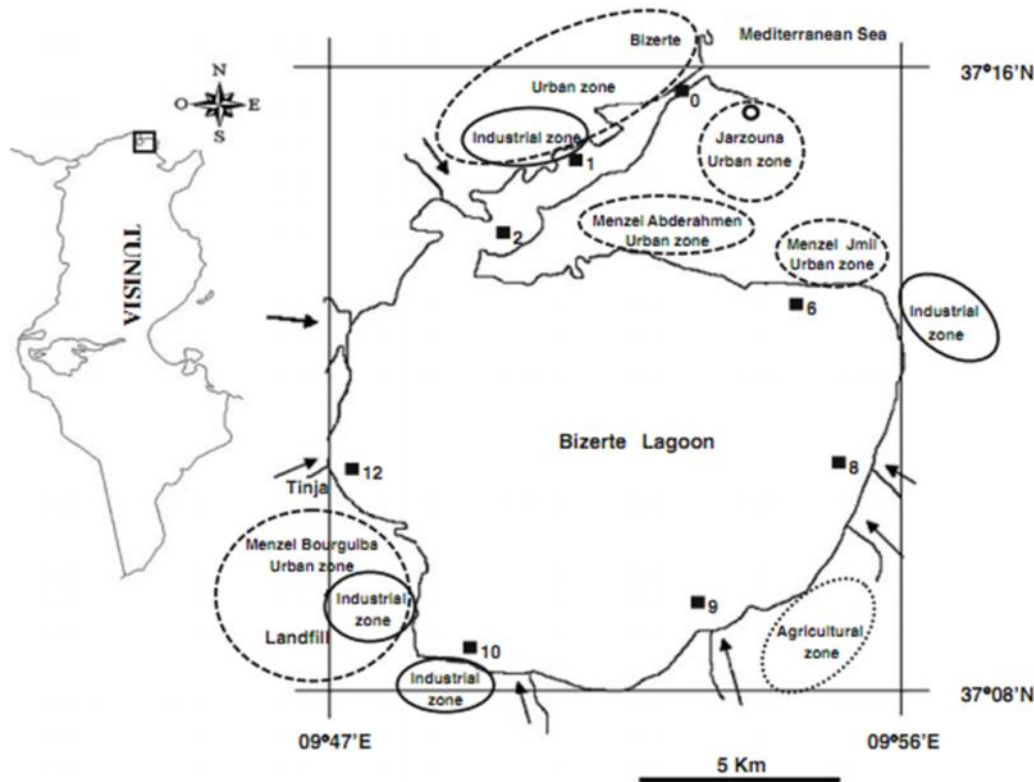
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# Bizerte laguna (Tunisia)

The Laguna of Bizerte is a nearly circular body of brackish water about 12 km in radius and up to 13m deep, open to the sea through the narrow Bizerte canal. It is surrounded by farmland and two medium-sized metropolitan areas (Bizerte with a population of 140,000, and Menzel-Bourguiba with a population of 55,000). Major industrial plants with a strong water demand on the shores are present. The Laguna itself is exploited for fishing and shell farming.





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# EcoHydrological solutions?



The Laguna system has important subsistence and small scale commercial fisheries and hosts shellfish aquaculture. Aquifers provide water to the communities and are exploited by agricultural activities in the basin but also are at a receiving end of local pollutions. A variety of municipal, agriculture and industrial activities pollute the system.

**The result is a system where the potential flows of ecological services are diminished by the environmental degradation, implying a strong case for remediation and prevention of additional pollution.**

UNIVERSITE DE CARTHAGE  
Laboratory of Environment, Biomonitoring, LBE LR 01 ES 14  
Coastal Ecology and Ecotoxicology Group GREEC  
Bizerte Faculty of Sciences

**Other Research works**

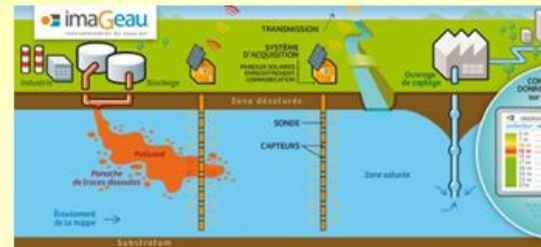
«The Bizerte lagoon between pressures and microbial adaptation: re ecosystem ??»

Oifa BEN SAÏD<sup>1</sup>\*, María Soledad GOÑI-URRIZA<sup>2</sup>, Amel LOUATI<sup>1,4</sup>, Cristiana CRAVO-LAUREAU<sup>3</sup>, Olivier PRIENGAU<sup>5</sup> et Robert DURAN<sup>6</sup>.



Pétrole brut

**Bioremediation and biorehabilitation of industrial contaminated sites on the shores of the Bizerte lagoon**

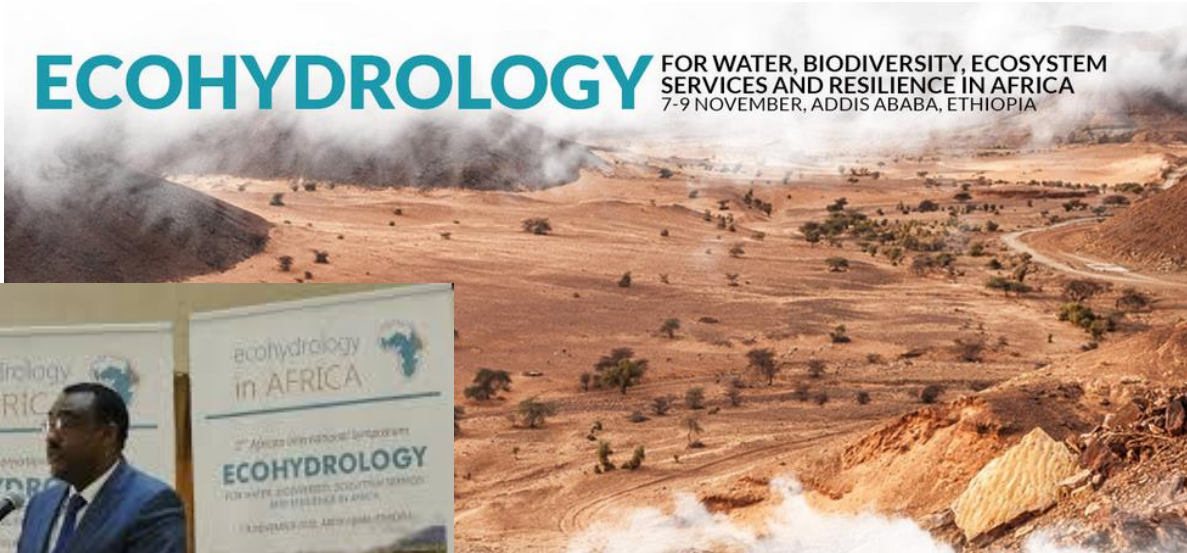


July 2016-March 2017:  
**Ex situ bioremediation of oil residual sludge using the windrow soil pile system at STIR refinery**

- Addition of structuring agent
- Homogenization of land
- Fertilizer addition
- Windrowing
- Bacterial seeding on the dispositif 1
- Supply of oxygen by turning

# ECOHYDROLOGY FOR WATER, BIODIVERSITY, ECOSYSTEM SERVICES AND RESILIENCE IN AFRICA

7-9 NOVEMBER, ADDIS ABABA, ETHIOPIA





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# To learn more on EH....

<http://8thfriendwater.iwhr.org/40?lang=en>

The 8th Global FRIEND-Water Conference  
BEIJING CHINA  
November 6-9, 2018

Home Committee Program Location Sponsors&Exhibitors News&Notice Questionnaire Travel Info

<http://isews.nwu.edu.cn/>

INTERNATIONAL SYMPOSIUM OF ECOHYDROLOGY AND WATER SECURITY:  
OPPORTUNITIES & CHALLENGES FROM DEVELOPING COUNTRIES  
XI'AN, SHAANXI, CHINA | 16-18 OCTOBER, 2018

Coming 2020 EcoHydroEco conference in Faro (Portugal)

*Water Resources Dialogue: China-Africa Water Forum Series No. 6 - Sharm El Sheik – July 23 to 27, 2018 - Egypt*