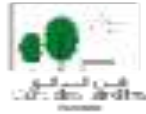




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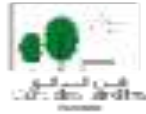
Innovation Forum of project WaterReTUNe

**Tuesday, 21 March 2023,
ElMouradi AFRICA hotel**





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WaterReTUNE



Sidi Amor Water Living Lab

Taieb Ben Miled & Karim Rgaieg & Haidar Ben Hassen & Hedi Segond & Sofiene Akkari





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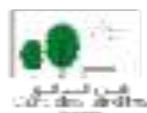
Sidi Amor Water Living Lab

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& Hedi Segond & Sofiene Akkari





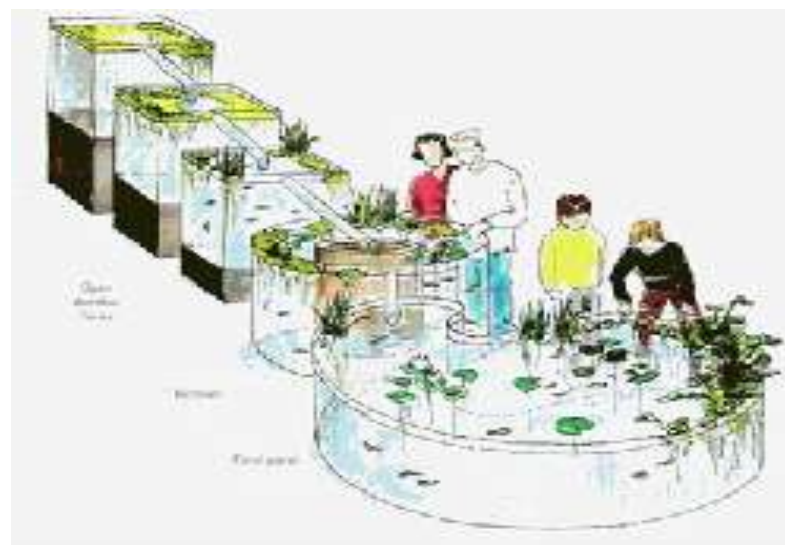
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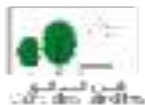


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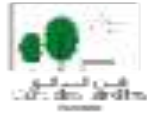


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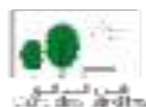
Sidi Amor Units and Gardens
become living labs for scientists,
watershed groups and farmers

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Training workshop

Watermaster and Bioskills Institute in Using Constructed Wetlands
and Living Labs

28th March - 1st April 2015, Tunis, Tunisia



Usage of constructed wetland at NGO Sidi Amor
Lessons learned from a tunisian case study
Taher Ben Miled, GDA Sidi Amor – Aziziana -Tunis



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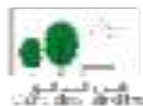




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Empowering Farmers in setting up Innovative Strategies for Water related Agroecosystem services

Italy Farm Lab

Subcatchment: Tuscany Cortal area
Local Partner: Scuola Superiore S. Anna



WEF Nexus challenge

Agricultural areas are using large amount of water causing groundwater exploitation and externalities such as salinization, subsidence, disappearing of groundwater-related ecosystems

Existing Technologies

- Managed aquifer recharge. A fully equipped MAK scheme using rainwater harvesting concept valuable up to 1.3 M m3

Stakeholders

Land and Irrigation Management authorities, River Basin Authority, farmers organisations

Spain Farm Lab

Subcatchment: Rio Daja (Diero)
Local Partner: Universidad Politécnica de Madrid



WEF Nexus challenge

The extensive cultivation devoted to grapes cereals and other annual crops put pressure on both water and energy resources; the efficient use of the energy in irrigation networks will be addressed and the optimal water resources management as well.

Existing Technologies

- Direct solar pumping for water well extraction and for pressurized plot irrigation equipped with drip irrigation system

Stakeholders

Irrigation district authorities, River Basin Authority, farmers organisations, local communities

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Tunisia Farm lab

Subcatchment: Gouvernorat de l'Ariana
Local Partner: GDA Sidi Amor



WEF Nexus challenge

The irrigation area of Boj Tozil is characterized by olives and flower production. The increasing water demand is putting pressure on local water resources that are limiting the development of this important economic sectors

Existing Technologies

- Drilling with photovoltaic panels
- Constructed wetland system for wastewater treatment

Stakeholders

Agriculture Ministry; Environment Ministry; UTAP (National Farmer's Organisation) Municipality (Rasied)

Turkey Farm Lab

Subcatchment: Antalya basin
Local Partner: SUEN
Turkish Water Institute



WEF Nexus challenge

Antalya Basin is under water stress due to both agricultural activities and mass tourism. Current agriculture practices (mainly greenhouses but also open field cultivation) show criticalities regarding optimum water/nutrients use and minimization of runoff, so that quality/quantity of water bodies can be sustained in the basin

Existing Technologies

Traditional irrigation systems

Stakeholders

State Hydraulic Works (DSI), farmers and local communities

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Water-BATING



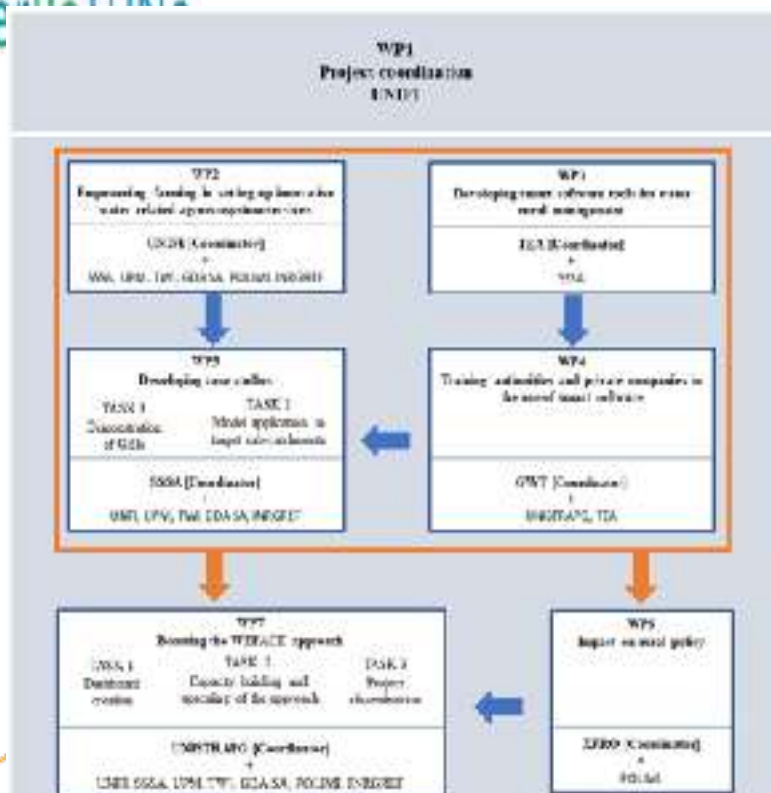
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UNIVERSITY OF SIDI AMOR

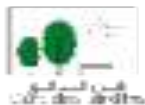


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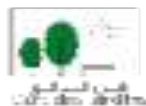


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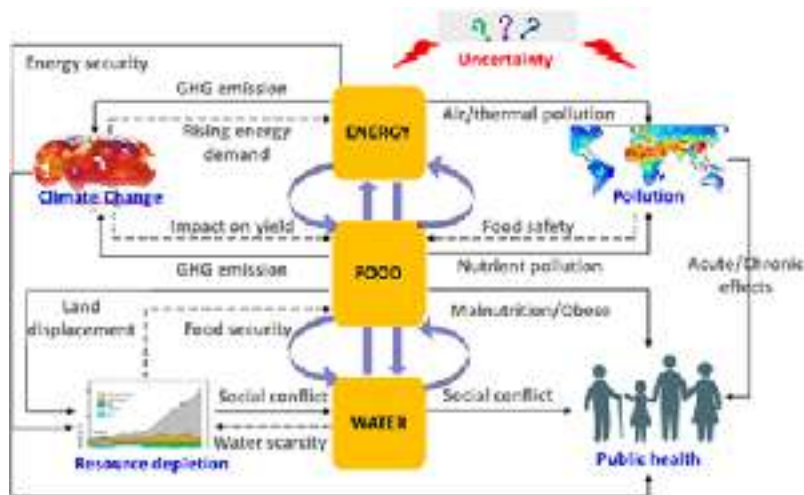


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The Water Pathway

Existing water systems are often inefficient – from water loss in reservoirs, loss in distribution, water is lost, collected, treated etc. – losses. Such systems will continue to contribute to the problem of delivering potable & adequate supply and services. The water pathway should be redesigned as a closed loop system, with secondary water quality options (reclaimed, and effluent treated in use). (CERTE) of this part has been created (SARPA), efficient (SARPA) systems are required to meet the first line of defense against water scarcity (SARPA) for a comprehensive demand management strategy that includes sustainable strategies and measures to improve water security.

CIRCULAR ECONOMY & WASTE WATER IN SIDI AMOR AREA

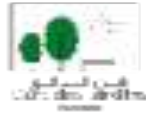


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The Water Pathway

Water is a precious resource. It is essential for life, health, and economic growth. However, water is not distributed evenly across the globe. In some areas, water is abundant, while in others, it is scarce. This is due to a variety of factors, including climate change, population growth, and land use changes. The Water Pathway is a project that aims to address these challenges by developing sustainable water management solutions. It focuses on three main areas: water conservation, water treatment, and water distribution. The project is led by the Ministry of Higher Education and Scientific Research, in collaboration with the Sidi Amor Water Living Lab and the CERTE. The project is currently in the planning stage and is expected to be implemented in the near future.

CIRCULAR ECONOMY & WASTE WATER IN SIDI AMOR AREA

Sidi Amor Units and Gardens become
living labs for scientists,
watershed
groups and farmers

Sidi Amor Living Lab is first to pilot
concept that will now be used across
Tunisia



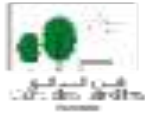
Stakeholder	Contribution	Benefit
City	Water supply	Water conservation
Factory	Water treatment	Water reuse
Farm	Water conservation	Water reuse
Garden	Water conservation	Water reuse
School	Water conservation	Water reuse
Hospital	Water conservation	Water reuse

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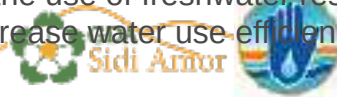
How can the Living Labs develop sustainable and efficient solutions for water use?

Climate change and economic or population growth – those factors create challenges to the water sector in coastal areas and beyond. Water scarcity and increasing water demand result in the overexploitation of resources, quality deterioration and regional imbalances in the availability of water resources.

To tackle these challenges, the European research project 'building a water-smart society and economy', short [B-WaterSmart](#), develops and demonstrates smart technologies and circular economy approaches for the water sector. The research in the project is based on the work of six demonstration sites, called Living Labs, all across Europe. Together with research partners and local technology providers they develop and test water-smart management solutions and technologies

In order to implement those solutions strongly in the practice of the water sector, technical and digital solutions, as well as new business models, are jointly developed by all project partners. The overall aim is to accelerate the transformation to water-smart economies and societies in coastal Europe and beyond by reducing the use of freshwater resources, improving the recovery and reuse of resources, and increase water use efficiency.

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Prof. Dr. Martin G. Grambow

Honorar professor der TUM seit 2012 / Fakultät

Ingenieur fakultät Bau Geo Umwelt /

Fachgebiet International Water Management



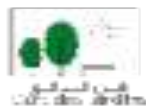
Exploratory Mission of Bavarian « Forest-Water-Well being in Tunisia » with Munich University team. **Prof. Dr Jörg E. Drewes** Chair Professor

Chair of Urban Water Systems Engineering, Technische Universität





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