Sustain Water MED: Network of demonstration activities for sustainable integrated wastewater treatment and reuse in the Mediterranean

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Agenda

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- **GIZ's purpose** is to promote **international cooperation for sustainable development and international education**.
- **GIZ** is 100% federally owned, public-benefit enterprise, we support the **German Government** to achieve its objectives in the field of **international cooperation.**
- **GIZ** operates in more than **130 countries**, employs more than **17,000 staff** members worldwide.

Objectives of Sustain Water MED

- To promote sustainable water policies and practises
- To support integrated approach of sustainable water resources management based on WDM and sustainable use of non conventional water resources
- To support adequate and low cost technologies
- To develop skills in planning and management at local and national level

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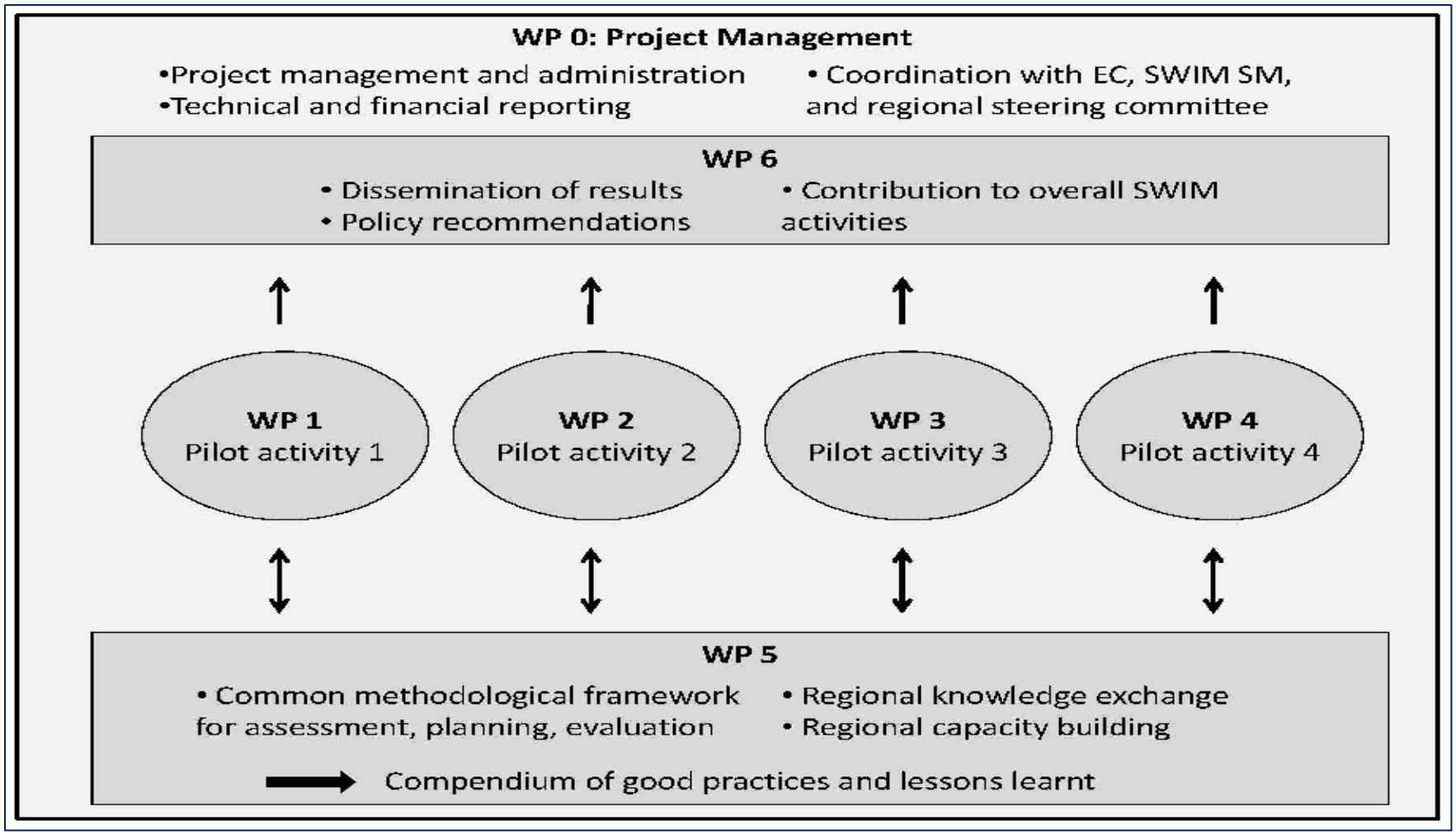
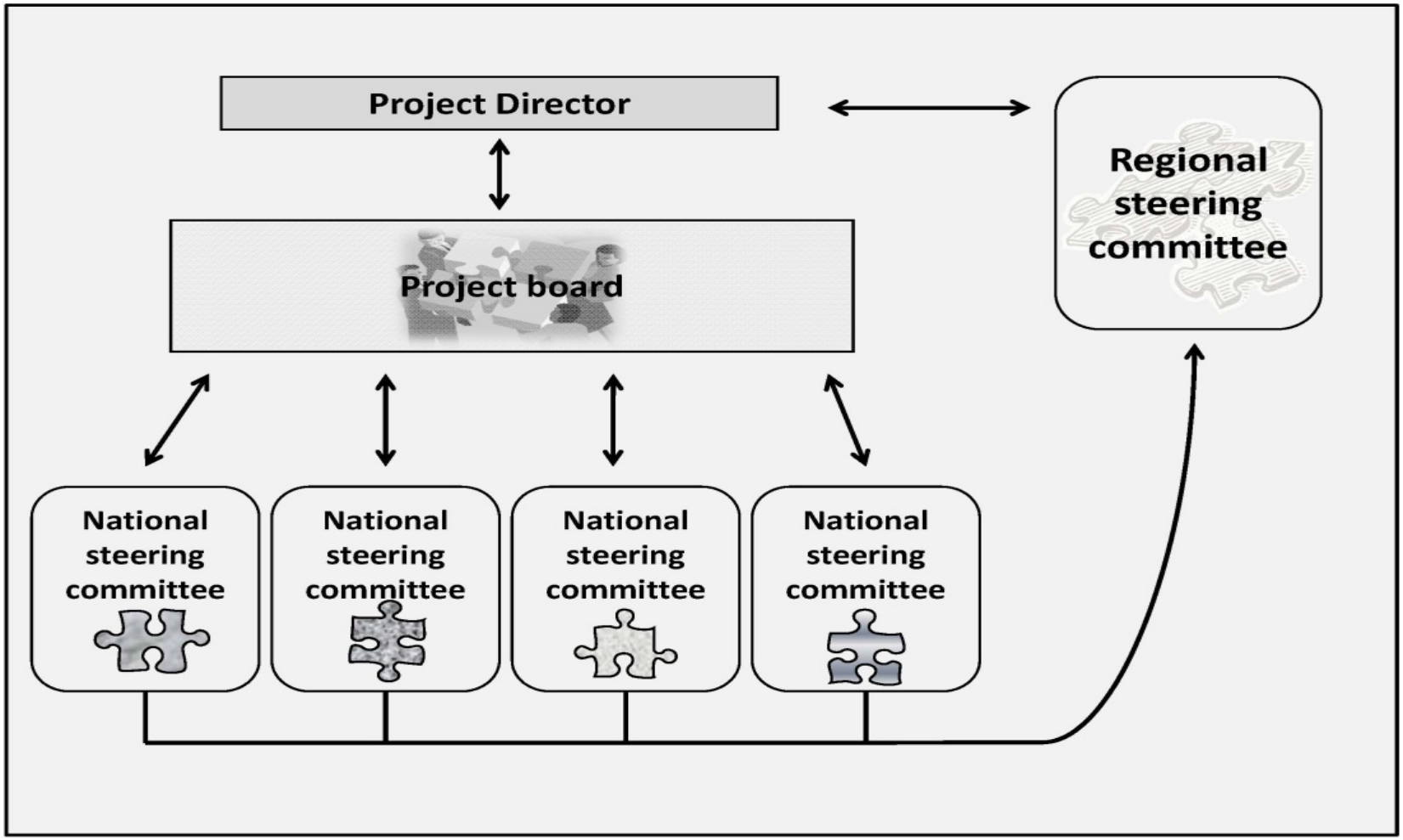
Partners of Sustain Water MED

1. **GIZ:** *Germany, Lead*
2. **Adelphi Research:** *Berlin, Germany*
3. **ENEA:** *Bologna, Italy*
4. **IUCN:** *International Union for Conservation of Nature, Belgium*
5. **BAU:** *Al Balga Applied University, Jordan*
6. **NRC:** *National Research Centre, Egypt*
7. **ONAS:** *Office National de l Assainissement, Tunisia*
8. **ABH-SMD:** *Agence du Bassin Hydraulique du Souss-Massa et Draa*, (*State Secretary of Water and Environment, Morocco)*

Overview of Work Packages of Sustain Water MED



Organisational structure of the Sustain Water MED



Common approach of pilot activities

- **Establishment of a national steering committee** that will advise on all steps of the pilot activity and include relevant stakeholders from different interest groups and levels of administration
- **Baseline assessment and final adjustment of pilot activity** incl. detailed analysies of stakeholders, social acceptance, legal frameworks, environmental conditions, env. and health risks
- **Implementation of pilot activity together with local stakeholders**
- **Action oriented capacity development and awareness raising** incl. on-the-job-training, establishing information center at pilot cite
- **Accompanying study of social, environmental and economic effects** of pilot activites according to a common framework

Integrated vision of wastewater treatment and reuse

Biomass production, e.g. bamboo

Irrigation (cereals, fruits and vegetables for further processing)

Irrigation (parks and golf courts, food for direct consumption…)

Energy production (CH4)

Separate treatment or recycling

Industrial wastewater

Domestic wastewater

Rainwater

Primary treatment: mechanical

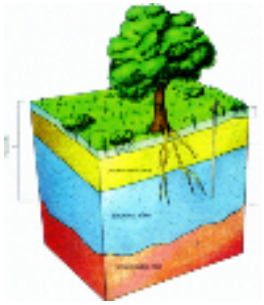
Secondary treatment: biological-anaerobic

Tertiary treatment: disinfection

Refined treatment: elimination of N and P

Direct use and/or groundwater recharge

Groundwater recharge



Pilot activity Morocco

Objective: a sustainable concept of locally adapted wastewater /human excreta management

Location: rural oasis community in Dades Valley (Tanghir Province Southern Morocco)

Treatment approaches: Source separation and reuse-oriented decentralised treatment

Innovative aspect: ecosan concept, incl. energy generation from biogas, combination with rainwater harvesting and production of artificial soil

Expected out come:

- improvment of ground water quality
- improvment of sanitation infrastructure and life conditions of local population.
- contribution to the resilience measures against climate change impact

Pilot activity Jordan

Objective: Demonstrate potential for agricultural irrigation of wastewater effluents from different treatment technologies

Location: Zarqa River Basin

Treatment approaches: Central conventional treatment and decentralised alternative technologies like constructed wettlands , grey water recycling and modified septic tanks

Innovative aspect: Proven applicability of decentralised alternative wastewater treatment for reuse in agriculture

Expected out come:

- improvement of sanitation infrastructure of rural population
- support the decentralised approach of WWT in Jordan
- improvement of safe irrigation

Pilot activity Egypt

Objective: economic benefits of secondary WWT through selection of (1) optimal crops, (2) appropriate agricultural practices and irrigation techniques.

Location: Abu Rawash Village (Giza Governorate)

Treatment approaches: Decentralised secondary treatment of primary effluents (Abu Rawash WWTP)

Innovative aspect: Additional secondary treatment and innovative agricultural practices

Expected out come:

- **improvement of safe irrigation**
- **improvement of farmers income**
- **encourage the reuse of treated secondary effluents**

Pilot activity Tunisia

Objective: Demonstrate a system of water quality monitoring, control and early warning for water supply to enhance acceptance and security of reuse

Location: Oueljet El Khodher in the province Medenine

Treatment approaches: Conventional tertiary treatment

Innovative aspect: Joint monitoring through water provider and end-user, quality based effluent supply contracts

Expected out come:

- **set up an efficient and applicable water quality monitoring system (WQMS)**
- **increase capacity of regional partner (CRDA) to run WQMS**
- **increase acceptance of reuse of non conventional water resources.**

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Conclusions

- the actions of Sustain Water MED will strongly contribute to the objectives of SWIM-Programme
- demonstrate solutions for local problems which are applicable in the region
- continuous base line assessment and evaluation
- improvement of sanitation and safe irrigation
- stakeholders involvement
- decentralised, low cost, low maintenance
- support existing national plans/programmes for sustainable sanitation
- build up on existing and successfully conducted programmes (EMPOWER,EMWATER, Zero M, SMART)

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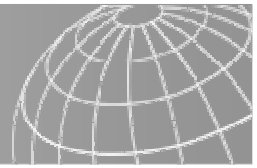

Thank you for your attention