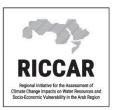


Piloting Climate Change Adaptation

Dr Gerhard Lichtenthäler Advisor GIZ ACCWaM Egypt



Adaptation Pilots

Jordan

Solar Energy Farming in the Azraq Basin

Lebanon

How to Prevent Sea Water Intrusion in Coastal Cities – Case Study Beirut

Egypt

Reuse of Agricultural Drainage Water











Jordan: Solar Energy Farming (PV)



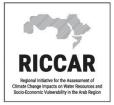




A Triple-win Nexus

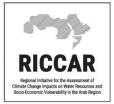
- Water Security
- Energy Security
- Food Security

saves drinking water for 200 families



Jordan: Lessons

- Water Security: reduces the further lowering of the groundwater table of the aquifer
- Food Security / Livelihood: offers a source of income to farmers as a water-friendly alternative to agriculture
- Energy Security: generates electricity (Jordan has a high energy import bill for energy - oil and gas)
- Climate Change: contributes to increase the share of renewable energies, hence reducing CO2 emissions



Jordan: Transferability

Preconditions

- Network (Electricity)
- FiT (Feed-in-Tariff) Contracts between the grid operator and the farmer
- Information on the pros and cons of Energy Farming
- Access to loans (bank security, land ownership)
- Access to technical services for implementation and maintenance (training)



Lebanon: Managed Aquifer Recharge

How to Prevent Sea Water Intrusion in the Beirut Area

Upper Watershed

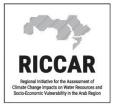
- **Unplanned settlements -**Deforestation – Surface sealing
- Reduced aquifer recharge

Beirut Area

- Overexploitation of coastal aquifer > Seawater intrusion
- Deteriorating water quality
- Flash floods
- Feasibility of MAR (Managed Aquifer Recharge)







Lebanon: Lessons

- IWRM: solution needs many different types of interventions
- NEXUS: MAR needs holistic approach (state/non-state/research/public)
- Urgency: the progressing impacts of climate change, including the rising sea levels, will aggravate the
 - already existing problems
- Scope: needs large area in order to be efficient

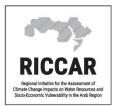




Lebanon: Transferability

- IWRM approach can be transferred to other densely populated coastal areas in MENA region
- High costs involved calls for the involvement of an international donor
- Complexity of an IWRM approach and the general paucity of relevant data demand inputs by scientists of numerous disciplines





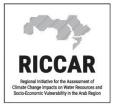
Egypt: Reuse of Irrigation Drainage Water

- Nile Delta
 - High demand for irrigation water > tail enders > limited freshwater especially in summer
- Farmers use drainage water directly from the drains to irrigate their lands, unaware of potential

harms

Climate change exacerbates vulnerability





Egypt: Lessons

- National Policy: reuse of agricultural drainage water
- Mixing fresh irrigation water with drainage water under controlled conditions
- Mobile Pump Unit cooperation of MWRI & WUA
- Increases water supply and safeguards water quality
- improves water use efficiency reduces energy consumption

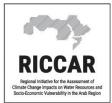




Egypt: Transferability

- Legal framework guidelines to be developed and complied with
- close partnership between national and local-level
 water institutions > operation and maintenance
 of the system
- acceptable quality of drainage water
 - + quantity of irrigation water
- Regular monitoring
 water & soil quality
 training (farmers/operators)





ACCWaM Online Digital Access Tool

giz ACCWaM

LIST OF PUBLICATIONS AND THEIR LINK TO THE SDGs

For questions, and gueries please contact Dr. Gerhard Lichtenthaeler (&CCWald) – gerhard lichtenthaeler (at) git de

Topics

- → ACCWaM Programme
- → ACSAD | ESCWA
- → League of Arab States
- Mainstreaming
- → Learning Knowledge Institutions
- → Nexus
- → Pilots
- → Reports (Management & Steering Committee)



The Icons next to each publication indicate their link to the Sustainable Development Goals (SDGs). Keywords of SDGs and their targets are selected here on the basis of their relevance to the publications. For the complete list of the SDGs and their key targets see last pages. And also; https://justainable.development.un.org/adds

ACCWaM Programme



2016 Bartely / Lichtenthieler

German Development Cooperation in Times of Crises and Uncertainty

This programme brief describes some of the particular challenges: faced by the gist regional programme Adaptation to Climate Change in the Water Sector in the MENA Region (ACCWalk) during and following the Arab Sgring, 2011 — 2015.

Read more hargining (Pages: 5)





Enyments of 200s, strategy | planning | separaty Suiting | seeparation

ACCWaM Reports with

Relevance to SDGs

Download file here

www.accwam.org